STAT Sheffield Planning and Assessment Grids Statement Descriptors

By Year Group

Supplementary guidance to assist teachers using the STAT Sheffield Planning and Assessment Grids (STAT Sheffield, 2014) in making judgements about attainment within the statutory requirements from the programmes of study in *The National Curriculum in England* (Department for Education, 2013)

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STAT Sheffield

Edition 2

Contents

Acknowledgements

The Sheffield Assessment Project is a wonderful example of schools and practitioners collaborating together for the benefit of children. On their behalf we would like to give special thanks to the following people who worked to develop the Statement Descriptors during the Academic Year 2014/15 (in alphabetical order):

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General Information

Statement Descriptors and Exemplars

In February 2015 a group of teachers and consultants met together to start work on writing descriptors for each statement in the statutory requirements of the National Curriculum in England (Department for Education, 2013). The purpose is to help teachers using the STAT Sheffield Planning and Assessment Grids© (STAT Sheffield, 2014) to make judgements about attainment of a statement from the National Curriculum and thus also assist with moderation.

The original ideas for the English statement descriptors and exemplars from the first group meeting have been adapted and supplemented by the Sheffield ESCAL team. The mathematics statement descriptors and exemplars have been adapted and supplemented by Alex Crawshaw from Sheffield Performance and Analysis Service. Many of the mathematics statement descriptors have been sourced from The National Strategies Primary Teaching Blocks (The National Strategies, The National Archives, 2009) and a few from NZ Maths (Ministry of Education (New Zealand)).

Reading through the list of statement descriptors for each statutory requirement should help teachers decide whether pupils are Beginning, Progressing, or Secure within that statement. A few of the statements have no descriptors as they are explicit in the statement itself. The number of statement descriptors varies from one to another.

Resources

Apparatus mentioned in exemplars should be available from educational equipment stockists. ITPs, (The National Strategies, Interactive Teaching Programs accessed 5/6/2015) were still available at the first date of publication of this document.

Key Messages

Important messages are found at the beginning of each year group strand. These are for guidance only and are not part of the National curriculum statutory content.

Formatting

- A solid round bullet is a main descriptor for an objective.
  - ♦ A diamond bullet represents one of a series of exemplars for a descriptor.
  - ○ An open round bullet is a sub descriptor related to a main descriptor.
    - ◊ An open diamond bullet is one of a series of exemplars for a sub descriptor.

Notes are written in red font and are for guidance only.
Key Performance Indicators (KPIs) are in bold italics.
Blue underscored italic text indicates that there is another closely related objective.

Navigating the Electronic Document

Clicking on the house returns to the navigation table page. The navigation page itself has a series of quick links to the different strands for each year group.

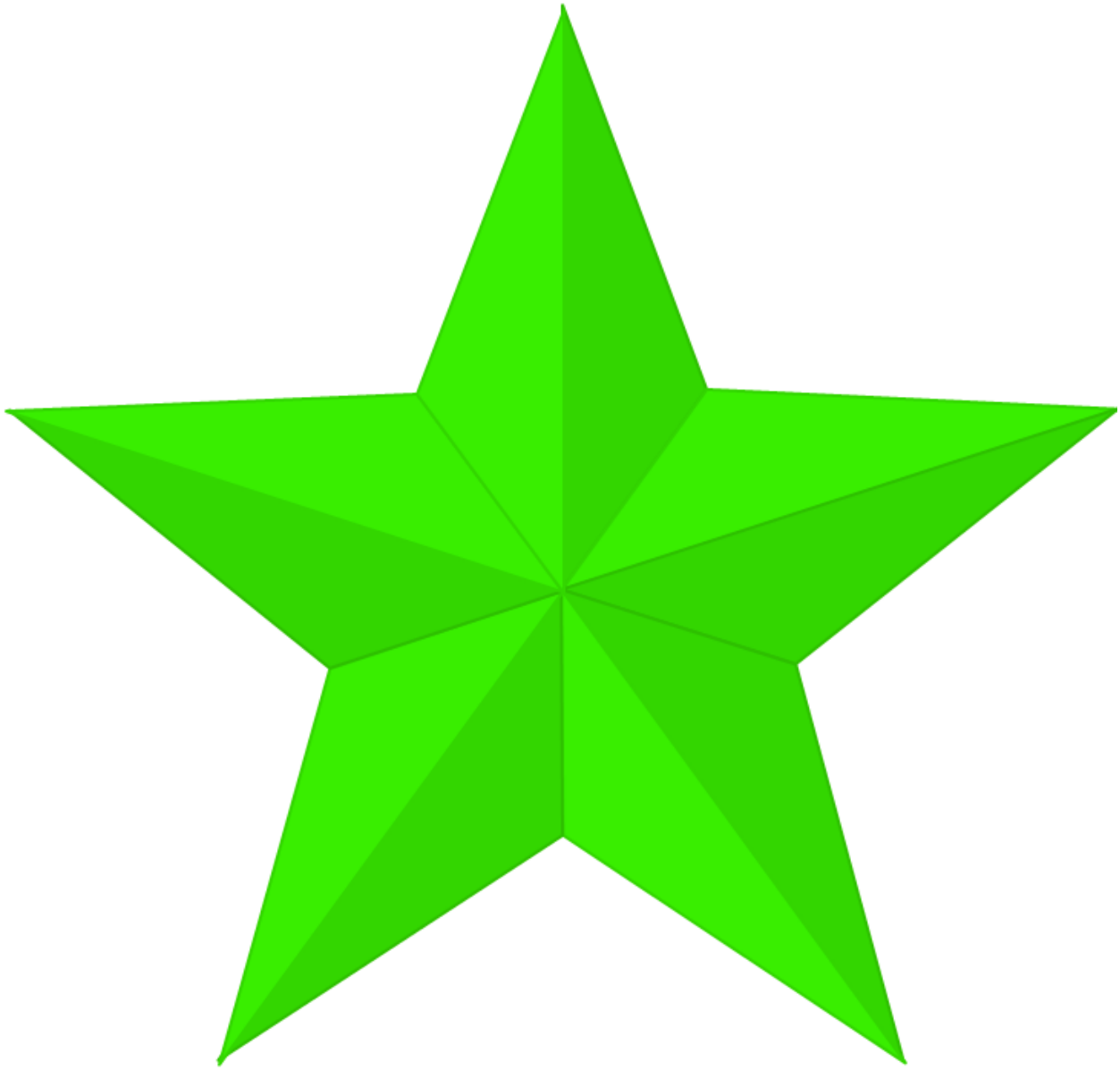
◀Y2 Y5▶ Clicking on these symbols at the beginning of each section moves forwards and backwards to different year groups within the same area of learning.
Where there is a significant link between objectives, clicking on a blue hyperlink will allow quick movement between items.

Navigation Table

If using an electronic version of the document, click on the ticks to navigate to strands and the house to go to the contents page.

SUBJECT	DOMAIN	AREA	Y1	Y2	Y3	Y4	Y5	Y6
ENGLISH	Reading	Word Reading	✔	✔	✔	✔	✔	✔
		Comprehension	✔	✔	✔	✔	✔	✔
	Writing	Transcription - Spelling	✔	✔	✔	✔	✔	✔
		Transcription Handwriting	✔	✔	✔	✔	✔	✔
		Composition	✔	✔	✔	✔	✔	✔
		Vocabulary, Grammar and Punctuation	✔	✔	✔	✔	✔	✔
MATHEMATICS	Number	Number & Place Value	✔	✔	✔	✔	✔	✔
		Addition & Subtraction	✔	✔	✔	✔	✔	
		Multiplication & Division	✔	✔	✔	✔	✔	
		Addition, Subtraction, Multiplication & Division						✔
		Fractions	✔	✔	✔			
		Fractions. including Decimals				✔	✔	
		Fractions, including Decimals & Percentages						✔
		Ratio & Proportion						✔
		Algebra						✔
	Measurement	Measurement	✔	✔	✔	✔	✔	✔
	Geometry	Properties of Shapes	✔	✔	✔	✔	✔	✔
		Position and Direction	✔	✔		✔	✔	✔
	Statistics	Statistics		✔	✔	✔	✔	✔

Year 1: Steps 16-18



Y1 Steps 16–18	Reading Word Reading	Y2▶
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*		

Y1 Steps 16–18	Word Reading Y1
Statement	**Descriptors**
	See English Appendix 1.
Apply phonic knowledge and skills as the route to decode words.	• Blend sounds to read words.
Respond speedily with the correct sound to graphemes (letters or groups of letters) for all 40+ phonemes, including, where applicable, alternative sounds for graphemes.	• Recognise words with the same phoneme but different grapheme when reading *e.g. put them into word collection charts and link to meaning.* ⇒ *Spell words containing each of the 40+ phonemes already taught. (Spelling, Year 1)*
Read accurately by blending sounds in unfamiliar words containing GPCs that have been taught.	• Blend sounds to read words.
Read common exception words, noting unusual correspondences between spelling and sound and where these occur in the word.	• Find common exception words when reading, *e.g. when using a masking card to locate and isolate words within text.* • Answer questions about common exception words when reading, *e.g. 'How many times can you find the word 'the' on this page?'* • Find common exception words around the provision, *e.g. through word mats, wall display and games within the provision.* • When reading, identify common exception words noting unusual correspondences, *e.g. come, today, said.* • *Read common exception words,* ⇒ *Spell common exception words. (Spelling, Year 1)*
Read words containing taught GPCs and –s, –es, –ing, –ed, –er and –est endings.	• Use text to identify words having the suffixes of interest. • Discuss how suffixes change the root word and orally be able to use the word in a sentence, *e.g. 'Today, I jump . . . yesterday, I jumped.'* • Match root words with the suffix and then put it into a sentence effectively. • Read words with suffixes by building on root words already known, *e.g. use masking cards within reading to isolate root words and word endings.* ⇒ *Regular plural noun suffixes –s or –es (e.g. dog, dogs; wish, wishes), including the effects of these suffixes on the meaning of the noun. (VG&P, Year 1)* ⇒ *Suffixes that can be added to verbs where no change is needed in the spelling of root words (e.g. helping, helped, helper). (VG&P, Year 1)* ⇒ *Add prefixes and suffixes using the spelling rule for adding –s or –es as the plural marker for nouns and the third person singular marker for verbs;. (VG&P, Year 1)* ⇒ *Add prefixes and suffixes using –ing, –ed, –er and –est where no change is needed in the spelling of root . (Spelling, Year 1)*
Read other words of more than one syllable that contain taught GPCs.	See English Appendix 1 for full list. • Identify words through reading, *e.g. table, window, fairy.* • Show an understanding of how knowledge of syllables can support word reading, through a range of activities, e.g. ♦ *locating a word with one / two / three syllables;* ♦ *clapping the syllables in the word;* ♦ *breaking words into syllables before reading the whole word.*
Read words with contractions [for example, I'm, I'll, we'll], and understand that the apostrophe represents the omitted letter(s).	• Use text to identify words having contractions. • Discuss how an apostrophe replaces letters. • Use the word in a sentence orally, *e.g.'I'm going to the shops today.'* • Match contractions to expanded form, *e.g. 'I'm' with 'I am'.*
Read aloud accurately books that are consistent with their developing phonic knowledge and that do not require them to use other strategies to work out words.	• Read text consistent with phonic knowledge. • Read books at age appropriate instructional level. (90-94% accuracy.)

Y1 Steps 16–18	***Word Reading Y1***
Statement	**Descriptors**
Re-read these books to build up their fluency and confidence in word reading.	• Use phrasing within reading, such as 'Once upon a time', *e.g. teacher might model chunking language units together in text.* • Attend to punctuation when reading, *e.g. teacher might model how individual punctuation changes the way reading sounds.* • Know how words go together to build up phrasing in reading, *e.g. teacher might use cut up sentences to model this.* • Return to texts read previously in guided reading, *e.g. select a book from a 'familiar reading' basket.* • Track text with eyes. (Pace of reading should not be dictated by finger pointing.)

Y1 Steps 16–18	Reading Comprehension	Y2▶
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*		

Y1 Steps 16–18	Comprehension Y1
Statement	**Descriptors**
Develop pleasure in reading, motivation to read, vocabulary and understanding by:	
listening to and discussing a wide range of poems, stories and non-fiction at a level beyond that at which they can read independently;	• Discuss books with other adults / pupils and listen to their views, e.g. ◆ *favourite events;* ◆ *characters;* ◆ *genre;* ◆ *settings;* ◆ *likes / dislike.* • Discuss unknown vocabulary. • Show greater understanding of a text through participation in drama activities, *such as hot seating, freeze framing, etc.* • Discuss how language is used in fiction, *e.g. describe a character or a setting.* • Understand the difference between fiction and non-fiction, identifying purpose. • Discuss some of the features of non-fiction texts including: ◦ contents and index; ◦ structure; ◦ diagram and illustrations; ◦ captions and labels; ◦ lists. • Read non-fiction books for a purpose, *e.g. teacher poses questions that can be answered by finding information in a non-fiction text.*
being encouraged to link what they read or hear read to their own experiences;	• Talk about books already known, *e.g. 'Have you ever been to the beach?' 'What did you do there?' 'Are you frightened of spiders?' 'Why?'* • Discuss what words make you think of, *e.g. After reading the title 'Voices in the Park,' ask 'What does the word 'voices' make you think of? Why do you think that?'* • Predict what might happen next in books, *e.g. "I think the children will go swimming and build sandcastles at the beach.'*
becoming very familiar with key stories, fairy stories and traditional tales, retelling then and considering their particular characteristics;	• Share high quality books. • Develop vocabulary linked to storytelling, *e.g.' Once upon a time', 'a wicked stepmother', 'what big teeth you've got . . . '* • Re-visit and re-read favourite stories. • Re-visit stories as directed by an adult. • Discuss characters (good and bad), settings and events. • Know the key phases within a story: order main events using story language, *e.g. Once upon a time, one day, then, after that, finally.* • Orally re-tell stories on a regular basis, *e.g. create story maps to support oral re-telling of stories.*
recognising and joining in with predictable phrases;	• Join in with repetitive language patterns, *e.g. during shared reading.* • Predict what will come next using context and rhyme.
learning to appreciate rhymes and poems, and to recite some by heart;	• Listen to poems and rhymes: ◦ as a whole class; ◦ in small groups; ◦ individually, *e.g. with a listening centre*. • Use music or actions with poems to aid recall. • Talk about likes and dislikes of the poem or rhyme. • Select favourite poems / rhymes and explain why. • Learn and recite rhymes / poems. • Present rhymes and poems learnt to an audience.

Y1 Steps 16–18	Comprehension Y1
Statement	**Descriptors**
discussing word meanings, linking new meanings to those already known.	• Learn new vocabulary with reference to text. • Link new meanings of words to those already known, *e.g. 'big' to 'enormous' or 'huge' to 'massive'.* • Find interesting words linked to books and stories, *e.g. make collections of interesting words.*
Understand both the books they can already read accurately and fluently and those they listen to by:	
drawing on what they already know or on background information and vocabulary provided by the teacher;	• Discuss front covers of books, referring to prior experiences and other books read. • Ask questions before and during reading. • Discuss unknown vocabulary to aid clarity of meaning. • Make predictions before and during reading.
checking that the text makes sense to them as they read correcting inaccurate reading;	• Demonstrate active listening when reading. • Self-correct when a word / sentence does not make sense. • Answer retrieval questions about the text, *e.g. 'What colour coat is she wearing?'* • Take notice of and use the punctuation during reading. • Take notice of and use the meaning during reading, *e.g. be able to answer questions relating to the accuracy of their reading such as:* ♦ *'Does that make sense?'* ♦ *'Why did you stop?'* ♦ *'Does that sound right?'*
discussing the significance of the title and events;	• Generate own questions from reading the title (with support), *e.g. for 'Voices in The Park' a question such as 'I wonder what the voices are saying?'* • Predict what might happen in the story based on the title and front cover picture. • Discuss events as the story is read, reflecting on why things happen. • Identify the main events and characters in stories.
making inferences on the basis of what is being said and done;	• Answer simple inference questions about the text, *e.g. 'How is she feeling?', 'Why did she visit her Grandma?'* • Use visualisation techniques to help make information explicit, *e.g.* ♦ *drawing;* ♦ *acting out;* ♦ *freeze framing.*
predicting what might happen on the basis of what has been read so far.	• During reading, stop at various points in the story and predict what might happen next, showing an understanding of ideas, events and characters linked to evidence in the text.
Participate in discussion about what is read to them, taking turns and listening to what others say.	• Discuss events during reading, reflecting on why things happen. • Ask and respond to questions. • Actively listen to others.
Explain clearly their understanding of what is read to them.	• Respond to questions asked during discussions. • Participate in discussions about characters, events, likes / dislikes, why things are happening, etc. • Understand what different question words mean.

Y1 Steps 16–18	Writing Spelling	Y2▶
Key Messages • *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Pupils should be supported in re-reading their own and other's writing to check and improve clarity and the accuracy and consistency of spelling.*		

Y1 Steps 16–18	Spelling Y1
Statement	**Descriptors**
Develop their understanding of the concepts set out in English Appendix 2 (Year 1). Spell	
words containing each of the 40+ phonemes already taught;	See English Appendix 1 for full list. • Identify words in text containing target phoneme / grapheme. • Identify words, in text, with the same phoneme but different grapheme and group appropriately into word collection charts. • Write words, including the target phoneme. ⇒ *Respond speedily with the correct sound to graphemes (letters or groups of letters) for all 40+ phonemes . . .. (Word Reading, Year 1)*
common exception words;	See English Appendix 1 for full list. • Identify common exception words in text, discussing unusual correspondences, *e.g. come, today, said*. • Identify common exception words around the provision *e.g. through words mats, wall displays and games within the provision.* • Accurately spell common exception words, *e.g. use magnetic letters.* • Write common exception words from memory. • Use common exception words in writing continuous text. ⇒ *Read common exception words, noting unusual correspondences between spelling and sound and where these occur in the word. (Word Reading, Year 1)*
the days of the week	• Identify the days of the week in text. • Write the days of the week from memory. • Use accurate spelling for days of the week in writing continuous text.
Name the letters of the alphabet:	
naming the letters of the alphabet in order;	• Recite the alphabet starting at the beginning.. • Recite the alphabet starting at different points. • Name and write upper and lower case letters.
using letter names to distinguish between alternative spellings of the same sound.	• Spell words using letter names.
Add prefixes and suffixes:	
using the spelling rule for adding –s or –es as the plural marker for nouns and the third person singular marker for verbs;	See English Appendix 1 for full list. • Identify words with the suffixes ***s*** or ***es*** and discuss how the suffix changes the meaning of the word. • Show understanding by matching root words with suffix. • Write sentences in which plurals are used and spelt accurately. ⇒ *Read words containing taught GPCs and –s, –es, –ing, –ed, –er and –est endings. (Word Reading, Year 1)* ⇒ *Regular plural noun suffixes –s or –es (e.g. dog, dogs; wish, wishes), including the effects of these suffixes on the meaning of the noun.; (VG&P, Year 1)*
using the prefix un–;	• Identify words with the prefix ***un***, discuss and understand how adding the prefix changes the meaning of the word. • Show understanding by matching root words with the prefix ***un***. • Write sentences in which root words and prefixed words are spelt and used accurately. ⇒ *How the prefix un– changes the meaning of verbs and adjectives (negation, e.g. unkind, or undoing, e.g. untie the boat). (VP&G, Year 1)*

Y1 Steps 16–18	Spelling Y1
Statement	**Descriptors**
using –ing, –ed, –er and –est where no change is needed in the spelling of root words [for example, helping, helped, helper, eating, quicker, quickest].	• Identify words having the suffixes of interest, discuss and understand how adding the suffix changes the meaning of the word. • Show understanding by matching root words with suffix. • Write sentences in which root words, and those with suffixes added, are used and spelt accurately. ⇒ *Suffixes that can be added to verbs . . .. (VG&P, Year 1)* ⇒ *Read words containing taught GPCs and –s, –es, –ing, –ed, –er and –est endings. (Word Reading, Year 1)*
Apply simple spelling rules and guidance, as listed in English Appendix 1.	See English Appendix 1 for full list.
Write from memory simple sentences dictated by the teacher that include words using the GPCs and common exception words taught so far.	• Write, from memory, simple sentences dictated by the teacher that include words using GPCs and common exception words taught so far.

Y1 Steps 16–18	Writing Handwriting	Y2▶
Key Messages • *Explicit teaching of the skills and processes essential to handwriting must precede, support and inform assessment of the STAT statements.*		

Y1 Steps 16–18	Writing Handwriting Y1
Statement	**No descriptors required for handwriting**
Sit correctly at a table, holding a pencil comfortably and correctly.	
Begin to form lower-case letters in the correct direction, starting and finishing in the right place.	
Form capital letters.	
Form digits 0-9.	
Understand which letters belong to which handwriting 'families' (i.e., letters that are formed in similar ways) and to practise these.	

Y1 Steps 16–18	Writing Composition	Y2▶
Key Messages • *At the beginning of Year 1 not all pupils will have the spelling and handwriting skills they need to write down everything that they can compose out loud.* • *Use of talk for writing, role play, drama, reading, etc., is essential.* • *Modelling in shared writing must come prior to independent writing.* • *Write for a range of real purposes and audiences.* • *When using this grid for assessment, practitioners should look also for evidence from the SPaG and Reading grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*		

Y1 Steps 16–18	Composition Y1
Statement	**Descriptors**
Write sentences by:	
saying out loud what they are going to write about;	• Speak to others about the subject they want to write about. • Discuss ideas with other children or adults before writing.
composing a sentence orally before writing it;	• Compose orally and rehearse a sentence prior to writing, *e.g. say a sentence to a partner before writing.* • Count aloud words in a sentence before writing.
sequencing sentences to form short narratives;	• Re-tell simple narratives, *e.g. through drama, to talk partners.* • Use support to plan writing and use these to orally practise simple narratives, *e.g. story maps, photographs*. • Write a number of sentences that follow a logical order. • Use simple time conjunctions to link sentences. • Use punctuation to indicate sentence boundaries within narratives. • Re-read previous sentence to ensure next sentence links logically. ⇒ *Sequencing sentences to form short narratives. (VG&P, Year 1)*
re-reading what they have written to check that it makes sense.	• Re-read during the process of writing to check that writing makes sense. • Re-read sentences when completed to check for: ◦ omitted words; ◦ spacing; ◦ accurate punctuation.
Discuss what they have written with the teacher or other pupils.	• Explain the subject of their writing to a teacher / pupil, *e.g.' It is a story about the three little pigs.'* • Discuss with an adult or other pupil what they like about their writing and identify next steps.
Read aloud their writing clearly enough to be heard by their peers and the teacher.	• Read aloud their writing to peers and the teacher, within meaningful contexts: ◦ articulating clearly; ◦ adjusting volume appropriately; ◦ attending to punctuation.

Y1 Steps 16–18	Writing Vocabulary, Grammar and Punctuation	Y2▶
Key Messages • *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Develop their understanding of the concepts set out in English Appendix 2 (Year 1).*		

Y1 Steps 16–18	Vocabulary, Grammar and Punctuation Y1
Statement	**Descriptors**
Word content to be introduced (statutory requirement):	
Regular plural noun suffixes –s or –es (e.g. dog, dogs; wish, wishes), including the effects of these suffixes on the meaning of the noun.	• Identify examples of regular plural nouns (-s, -es) and discuss how the meaning of the word is changed. • Create sentences orally which include words with plural noun suffixes, *e.g. use a word from a word list to make a sentence.* • Show understanding by using root words and words with the plural noun suffix in written sentences. ⇒ *Read words containing taught GPCs and –s, –es, –ing, –ed, –er and –est endings. (Word Reading, Year 1)* ⇒ *Add prefixes and suffixes using the spelling rule for adding –s or –es as the plural marker for nouns and the third person singular marker for verbs. (Spelling, Year 1)*
Suffixes that can be added to verbs where no change is needed in the spelling of root words (e.g. helping, helped, helper).	• Identify words with ***ing***, ***ed***, ***er*** suffix, separate the root word and discuss why a specific suffix is used, *e.g. Red Riding Hood helped Grandma to eat her dinner. Discuss why the word 'helped' is used rather than 'helping' or 'helper'.* • Show understanding by using appropriate suffix in writing. ⇒ *Read words containing taught GPCs and –s, –es, –ing, –ed, –er and –est endings. (Word Reading Year 1)* ⇒ *Add prefixes and suffices using –ing, –ed, –er and –est . . . (Spelling, Year 1)*
How the prefix un– changes the meaning of verbs and adjectives (negation, e.g. unkind, or undoing, e.g. untie the boat).	• Identify words with ***un*** prefix, separate the root word and discuss how the prefix changes the meaning of the verb or adjective. • Show understanding by using appropriately in writing. ⇒ *Add prefixes and suffixes using the prefix un–; (Spelling, Year 1)*
Sentence content to be introduced (statutory requirement):	
How words can combine to make sentences.	• Show understanding of how words combine to make sentences by responding orally in complete sentences. • Show understanding by assembling individual words into sentences, accurately, *e.g. cut up sentences from familiar stories.*
*Joining words and joining clauses using **and**.*	• Identify ***and*** being used to join words and clauses. • Show understanding in oral work by using ***and*** appropriately to join given words and clauses. • Show, in writing, understanding of how ***and*** can be used to join words and clauses.
Text content to be introduced (statutory requirement):	
Sequencing sentences to form short narratives.	• Show understanding of how sentences can be sequenced to form short narratives by re-assembling cut up sentences (initially from familiar stories). • Show understanding through oral storytelling using appropriate conjunctions and phrases to indicate time, *e.g. Once upon a time, one day, then, after that, finally.* • Show, in writing, understanding of how sentences can be sequenced to form short narratives using appropriate conjunctions and phrases to indicate time, *e.g. Once upon a time, one day, then, after that, finally.* ⇒ *Sequencing sentences to form short narratives. (Writing Composition, Year 1)*
Punctuation content to be introduced (statutory requirement):	
Separation of words with spaces.	• Show an understanding of how words are spaced in sentences by re-assembling 'cut-up' sentences, consistently spacing individual words. • Write sentences in which words are consistently spaced.

Y1 Steps 16–18	Vocabulary, Grammar and Punctuation Y1
Statement	**Descriptors**

Introduction to capital letters, full stops, question marks and exclamation marks to demarcate sentences.	• Identify capital letters in text and discuss where and why they are used.
	• Identify and discuss the different meanings and uses of:
	  ◦ full stops;
	  ◦ question marks;
	  ◦ exclamation marks.
	• Show understanding by re-assembling cut up sentences placing punctuation and capital letters accurately.
	• Use capital letters, full stops, question marks and exclamation marks to demarcate sentences some of the time.
	• Generate and record questions and answers using appropriate punctuation.

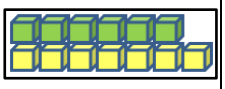
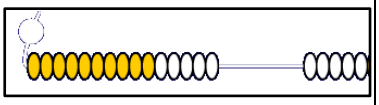
Using a capital letter for names of people, places, the days of the week, and the personal pronoun 'I'.	• Identify and discuss how capital letters are used to indicate names of people, places and the days of the week. • Use capital letters for names of people, places and the days of the week consistently in writing. • Identify and discuss how capital letters are used to indicate proper nouns and the personal pronoun 'I'. • Use capital letters for proper nouns and the personal pronoun 'I' consistently in writing.
Terminology for pupils content to be introduced (statutory requirement):	
Use the grammatical terminology in English Appendix 2 in discussing their writing: *letter, capital letter;* *word, singular, plural;* *sentence;* *punctuation, full stop, question; mark, exclamation mark.*	• Use accurate grammatical terminology when analysing text and explain the impact created. • Use accurate terminology when discussing how grammar has been used to create effect within writing.

Y1 Steps 16–18	Number Number and Place Value	Y2▶

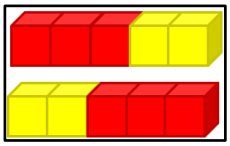
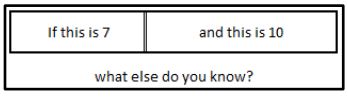
Key Messages

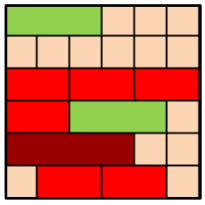
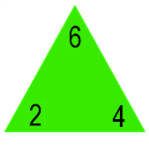
- *Make sure children see numerals displayed and that they read numbers aloud.*
- *Give children frequent opportunities to count forwards and backwards as most learning about calculation will be based on this.*
- *Use models and images to support counting, such as number tracks and number lines, so they can draw on visualisation skills when explaining.*
- *Activities should be almost entirely practical - recording will be with equipment, drawings and photographs.*
- *Although not explicit in this statement, pupils as young as Y1 can count forwards and backwards from and to single-digit negative numbers, especially if they are stepping physically backwards and forwards from 0.*
- *Vocabulary: units, ones, tens, exchange, digit, 'teens' number, the same number as, as many as equal to, half-way between.*

Y1 Steps 16–18	Number and Place Value Y1
Statement	**Descriptors**
Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	Begin with counting within 10, then 20, then 100, then through the 100 boundary. There is no reason to begin or end at 0 or 1 each time once children are comfortable with these values. • Count whilst moving forwards and backwards, *e.g. in the playground.* • Count actions, *e.g. claps, jumps, moving cubes.* • Recite numbers starting / ending with 1 stopping at any point up to 100. • Recite numbers starting / ending with 0 stopping and any point up to 100. • Count forwards and backwards from 0 and 1 (or any other starting points), *e.g. 'Stop at 53' or 'Start counting at 96 and stop at 110.'* • Order objects and say ordinal names, *e.g. 4 pupils sort themselves into height order. 'Who is third in the line?'* Children should be able to count in hundreds, thousands and millions, stopping at appropriate points. This extends counting in ones, allowing pupils to familiarise with large numbers.
Count, read and write numbers to 100 in numerals; ***count in multiples of twos, fives and tens.***	⇒ *Read and write numbers from 1 to 20 in numerals and words. (Number: Number and Place Value, Year 1)* Counting to 100 • Use the sequence of number names to count a small set of objects reliably by touching or moving. • Recognise a small number of objects without counting them and explain how they know. • Know that when objects are rearranged the number remains the same. • Read numbers to 100 as numerals, *e.g. when shown a numeral, count out the correct number.* • Write numbers to 100 as numerals, *e.g. record how many shells were in the cup.* • Solve counting problems, *e.g.* ◆ *'Are there enough books on the shelf for everyone to have one?'* ◆ *'This is 16 (pointing to the end of the stick). If you count back in ones, which number is at the beginning of the stick?'*  Counting in multiples of 2 • Count forwards and backwards up to 100 in multiples of 2 from any multiple of 2. • Count sets in the multiple, *e.g. 8 socks on the line, count the pairs as 2, 4, 6, 8.* • Recognise some patterns in the number system, *e.g. when counting in 2s from 0, the numbers always end in 0, 2, 4, 6 or 8 and these are even numbers.* Counting in multiples of 5 • Count forwards and backwards up to 100 in multiples of 5 from any multiple of 5. • Count sets in the multiple, *e.g. fingers on hands, 5, 10, 15.* • Recognise some patterns in the number system, *e.g. when counting in 5s from 0, the numbers always end in 0 or 5.* Counting in multiples of 10 • Count forwards and backwards up to 100 in multiples of 10 from any multiple of 5. • Count sets in the multiple, *e.g. sticks made from 10 Multilink, 10, 20, 30.* • Recognise some patterns in the number system, *e.g. when counting backwards or forwards in 10s from 0 the numbers always end in 0.* ⇒ *Solve one-step problems involving multiplication and division,. . .. (Number: Number and Place Value, Year 1)*

Y1 Steps 16–18	Number and Place Value Y1
Statement	**Descriptors**
Given a number, identify one more and one less.	⇒ *Add and subtract one-digit and two-digit numbers to 20, including zero. (Number: Addition and Subtraction, Year 1)* • Find the number that is one more or one less than a given number by adding / removing one object from a set then counting the new number. • Know that, when counting forwards, each number is one more and the numbers get bigger; when counting back, each number is one less and the numbers get smaller. • Find any number on a number track / 100-square and say the number that is one more or one less. • Identify a missing number in a spoken sequence (forwards / backwards), *e.g. 44, 45, 46, (clap), 48.* • Find missing or covered numbers on a number track.
Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	⇒ *Represent and use number bonds and related subtraction facts within 20. (Number: Addition and Subtraction, Year 1)* Emphasis should be on the language used in discussion. There are no statistics objectives for Year 1 but there are opportunities for representing objects and numbers in simple tables and pictograms that would be part of this particular objective and would lay foundations for Year 2. Objects • Compare and record with objects that can / cannot be moved, *e.g. cubes, pictures of owls in a tree.* • Identify which of two sets contains more objects, by matching the objects and counting the number in each set. • Arrange objects systematically to make counting easy, *e.g. a group grab a handful of cubes each and find out who grabbed most / least, etc., by arranging them into a physical pictogram with adult support or by making a table of names and cubes grabbed.* Pictorial Representations  • Understand the significance of the first digit in a two-digit number, supported by objects and pictorial representations, *e.g. 23 is a smaller number than 32.* • Understand place value in two-digit numbers and partition them into tens and ones, *e.g. count 15 straws, and bundle 10 together with an elastic band leaving 5 as single straws and relate this to the way that 15 is written.* Number Tracks, Number Lines and 100-Squares • Find and compare two numbers on a number track or number line using mathematical language. • Compare numbers, knowing which is bigger / smaller using knowledge of where numbers lie on a number line, *e.g. find numbers lying between 15 and 25.* • Order a set of numbers up to 100, using understanding of place value, *e.g. might refer to a number line or 100-square.*  • Position numbers on a number line. Estimation • Make estimates of a number of objects based on experience of visual patterns and arrays that can be checked by counting, *e.g. having counted how many counters fit in an egg cup, use this to estimate how many counters will fit in a small tin.* • Estimate how many there are in a larger number of objects and check by counting.
Read and write numbers from 1 to 20 in numerals and words.	⇒ *Count, read and write numbers to 100 in numerals. (Number: Place Value, Year 1)* • Read numbers 1 to 20 in numerals, using number tracks, number lines and number squares to identify where they lie, individually or in blocks, *e.g. point to 19 on the grid.* • Write numerals for numbers to 20, understanding that numbers from 10 to 20 have two digits. • Use apparatus to make a teens number and record the tens and ones, *e.g. they should know why they need to write 15 and not 51 for the number fifteen.* • Read numbers to 20 in words, *e.g. labels around the classroom.* • Write numbers to 20 in words (this could be a writing activity), *e.g. start counting, stop and pupil writes the next number on a whiteboard in words (and numerals).* 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Y1 Steps 16–18	Number Addition and Subtraction	Y2▶
Key Messages • *Model problems with apparatus, pictures and number sentences to build up models and images, and encourage children to choose how to represent problems.* • *Model addition and subtraction together, with small numbers at first, to embed links between them and to demonstrate when the order of numbers matters.* • *The order of subtraction is a difficult concept but don't tell children they can't subtract a bigger number from a smaller one. They cannot eat 3 cakes if there are only 2 but they can step backwards from 0 on a number line.* • *Know that, when counting on or back with a number line, the first move is the first count.* • *Ask children to describe and compare methods and support them to develop clear explanations.* • *When annotating teens numbers pupils need to know that 13 is written as one ten and three ones not three tens and one one (as the spoken pronunciation suggests). They need lots of modelling and practice with base 10 representations before being asked to write the numbers themselves.* • *Vocabulary: add, plus, sum, total, take away, increase, decrease, on, back, subtract, equals, less than, more than.*		

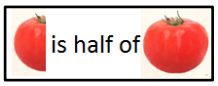
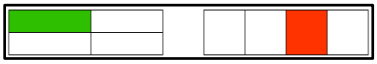
Y1 Steps 16–18	Addition and Subtraction Y1
Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.	• Understand that the = sign represents equality rather than the answer to a calculation and use the term 'equals' rather than 'makes'. • Understand that each side of an equation must balance / be equal, i.e., the total on each side must be the same, *e.g. 3 + 1 = 2 + 2.* • Understand which operation is required when interpreting the addition (+) and subtraction (–) symbols. • Represent number stories and practical problems with number sentences using the +, - and = symbols. • Understand written calculations with the symbols in any possible order, e.g. *1 + 6 = 7, 7 = 6 + 1, 7 - 1 = 6, 6 = 7 - 1.*
Represent and use number bonds and related subtraction facts within 20.	Addition and subtraction should be presented alongside each other at every opportunity to establish links between them. ⇒ *Identify and represent numbers using objects and pictorial representations . . .. (Number: Number and Place Value, Year 1)* • Recognise and represent patterns in addition to 20 and talk about what has been done, *e.g.* ♦ *find all the number bonds that equal the same answer,* e.g. use Cuisenaire rod, two rods each time, to make a '5' wall showing 5 + 0 = 5, 4 + 1 =5, 3 + 2 = 5, etc. ♦ *add the same number to each different starting number systematically (totals up to 20),* e.g. make a series of steps with two parts in each step showing 1 + 1, 2 + 1, 3 + 1, etc. ♦ *tell the story of 3, 4, 5 . . .* • Understand that the order of numbers in a subtraction sentence matters, i.e., 3 – 2 does not give the same outcome as 2 – 3 and, if using concrete objects, there are not enough objects to complete the task. (Don't express this to pupils by saying the calculation can't be done.) • Relate addition and subtraction, noticing the effect of adding a number and then subtracting the same number, *e.g. Begin with 3 and add 2. Record the addition sentence 3 + 2 = 5. Now take away 2. What is left? Record the subtraction sentence 5 - 2 = 3. What do you notice about the two calculations?* • Find all related subtraction facts for a given number bond to 10, *e.g. 1 + 3 = 4 so, 4 - 1 = 3 and 4 - 3 = 1.* • Know that the order of two numbers in an addition calculation can be changed round and still give the same answer, *e.g. use 3 red Multilink and 2 yellow Multilink and fasten them together to make a rod of 5. Make another with the red and yellow at different ends, laying them side-by-side for comparison and recognising that they both have 5 bricks.*  • Make number trio families by starting with a number bond, commuting the addition fact, and making two related subtraction facts, such as 7 + 10 = 17, 10 + 7 = 17, 17 – 7 = 10, 17 - 10 = 7, *e.g. use strips of card with rubber bands around them and write two addition and two subtraction facts.*  • Recognise that doubles of numbers only have one addition and one subtraction fact associated with them and explain why, *e.g. 4 + 4 = 8 and 8 – 4 = 4.* • Apply number bonds in problem solving (see below). ⇒ *Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9. (Number: Addition and Subtraction, Year 1)*

Y1 Steps 16–18	Addition and Subtraction Y1
Add and subtract one-digit and two-digit numbers to 20, including zero.	⇒ *Given a number, identify one more and one less. (Number: Number and Place Value, Year 1)* • Use practical and informal methods to: ◦ combine groups of concrete objects; ◦ increase numbers by counting on, *e.g. put 4 more bricks out / jump 4 forwards on the number line;* ◦ decrease numbers by removing concrete objects; ◦ decrease numbers by counting back, *e.g. take 3 hops back on the number line;* ◦ find the difference between two numbers by: ◊ *matching objects and counting 'extras'; and* ◊ *counting on on a number line.*  • Recognise that there is no change to the number of objects / outcome when zero is added or subtracted. • Use number bonds to 10 and their related subtraction facts in practical activities. • Use known number bonds to 10 to work out new number bonds and related subtraction facts to 20 by adding 10 to one of the numbers (working with base 10 apparatus would be helpful), *e.g.* ◆ *2 + 3 = 5 so 12 + 3 = 15.* ◆ *5 - 2 = 3 so 15 - 2 = 13.* • Practice all number bonds that have two single-digit numbers and their related subtraction facts, *e.g. 9 + 7 and 16 – 9 = 7.* (These are the hardest to learn.)  • Add more than two numbers together, *e.g. use Cuisenaire rods or colour squares in many different ways on grid paper to make the story of 6.* • Subtract more than one number from a given number. • Improve counting strategies from counting in ones to counting in jumps of 2 and 10, *e.g. 12 + 6 could be illustrated on a number line in loops of 2 with a verbal count of 14, 16,* ***18*** *accompanying it.*
Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ▢ – 9.	• Solve one-step addition and subtraction problems using role play / concrete objects, *e.g.* ◆ *Getting on and off the bus scenarios.* ◆ *Coat hangers / pegs – adding, subtracting, hiding some.* ◆ *Bead strings problems.* ◆ *Floor number track,* e.g. ◊ 'Put yourself on the number track at 6. Take 3 steps the way the numbers are getting bigger. Where are you now?' ◊ 'Put yourself on the number track at 2. Take 3 steps the way the numbers are getting smaller (backwards). Where are you now?' (children should be able to handle the negative in a practical task.) • Solve one-step addition and subtraction problems using pictorial representations, *e.g.* ◆ *There are four t-shirts on a washing line. Draw some more to equal seven altogether.* ◆ *Use number lines and / or 100 squares to work out and record solutions, verbalising what has been done, such as 16 subtract 2 is 14.* • Undertake simple investigations, *e.g.* ◆ *Explore patterns in pairs of numbers with a total of 10, e.g.* Make Cuisenaire walls. ◆ *Break a rod of 12 cubes into three pieces. How many cubes are in each piece? Can you do it in different ways?* • Recognise and create repeating patterns with objects / numbers, *e.g.* ◆ *Make a simple pattern with dominoes.* • Solve missing number problems and puzzles, *e.g.* ◆ *7 = ▢ + 5, or 7 = ▢ – 9.* ◆ *Make number trios,* e.g. from triangles with related numbers in each corner. ◆ *'How many birthday candles have been blown out since you were born?'*  • Present problem findings in own way with concrete objects, drawings and number sentences. ⇒ *Represent and use number bonds and related subtraction facts within 20. (Number: Addition and Subtraction, Year 1)*

Y1 Steps 16–18	Number Multiplication and Division	Y2▶
Key Messages • *Counting is a key activity and most learning about calculation will be based on this so it should be a daily event.* • *Concrete objects and pictorial representations provide models and images for later mental calculations.* • *Wherever possible calculation should be taught in the context of solving real life problems.* • *Use language of multiplication and division: double, halve, share, equal groups, equal sets, lots of, groups of.*		

Y1 Steps 16–18	Multiplication and Division Y1
Statement	**Descriptors**
Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	• Make and complete sequences of multiples of 2, 5 and 10, *e.g.* ◆ *'How far can you count in fives?'* ◆ *20, 18, 16. Describe the pattern. What comes next?* ◆ *Hops forwards and backwards on number tiles / tracks. What numbers will you land on?* • Solve problems with concrete objects, *e.g.* ◆ *Exchange 2p, 5p or 10p coins for 10p, 20p, 50p, £1.* ◆ *Share objects into equal groups.* ◆ *Count repeated groups of objects, such as listening to 5p coins being dropped into a tin.* • Solve problems by drawing diagrams / pictures, *e.g.* ◆ *16 wheels, how many bicycles?* ◆ *5 squares, how many corners?* • Solve problems with arrays, *e.g.* ◆ *Find different ways to arrange 12 counters in equal rows.* Doubling and Halving • Find the double of each number to 10, *e.g. double dice throws (10-sided die).* • Find half of each even number to 20, *e.g. divide 12 spots equally on a ladybird.* ⇒ *Recognise, find and name a half as one of two equal parts of an object, shape or quantity. (Number: Fractions, Year 1)* ⇒ *Count in multiples of twos, fives and tens. (Number: Number and Place Value, Year 1)*

Y1 Steps 16–18	Number Fractions	Y2▶
Key Messages • *There should be clarity about the differences between finding half / quarter of one and half / quarter of a quantity.* • *Use the terminology one as opposed to whole / whole one in the context of shapes.* • *When finding half of one don't use objects that have been combined together, such as a stick of 6 Multilink, as this could cause confusion with fractions of quantities later.* • *Pupils are not expected to annotate using ½ in Year 1 but they may see ½ in visual presentation.* • *Through grouping and sharing small quantities, pupils begin to understand finding simple fractions of objects, numbers and quantities.* • *Use language of fractions: half, halve, quarter.*		

Y1 Steps 16–18	Fractions Y1
Statement	**Descriptors**
Recognise, find and name a half as one of two equal parts of an object, shape or quantity.	Half of one • Find half of one object that can be broken / contents moved, *e.g. playdough, container of water, string, piece of fruit, and piece of paper.* • Find half of one object that cannot be broken, *e.g. metre stick.* Half of a shape • Find half of a range of different paper shapes (different sizes and orientations). • Recognise / talk about an object that is half of something. • Make links between half a circle and half past on the clock face. • Know that two halves of a shape can combine to make one. • Know that half of one shape might be larger or smaller than half of another one.  Half of a quantity more than one • Find half of a quantity of objects that can be moved, *e.g. counters.* • Know that objects might not always share equally into two groups – there may be one left. • Find half of a quantity that cannot be moved, *e.g. objects in a picture.* • Find half in the context of measures and money, *e.g. 'Where is half way between 0 and 20 cm on the ruler?'* Half • Know the difference between half of one and half of a quantity. • Understand what the symbol ½ represents. ⇒ *Solve one-step problems involving multiplication and division,. . .. (Number: Multiplication and Division, Year 1)*
Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	Quarter of one • Find a quarter of one object that can be broken / contents moved, *e.g. playdough, container of water, string, piece of fruit, and piece of paper.* • Find a quarter of one object that cannot be broken, *e.g. metre stick.* Quarter of a shape • Find a quarter of a range of different paper shapes (different sizes and orientations). • Recognise / talk about an object that is a quarter of something. • Make links between a quarter of a circle and quarter past and quarter to on the clock face. • Know that four quarters of a shape can combine to make one. • Know that a quarter of one shape might be larger or smaller than a quarter of another one. • Know that a quarter of the same shape, such as a rectangle, can be shown in different ways and they may look different from each other.  Quarter of a quantity more than one • Find a quarter of a quantity of objects that can be moved, *e.g. counters.* • Know that objects might not always share equally into four groups – there may be 1, 2 or 3 left. • Find a quarter of a quantity that cannot be moved, *e.g. objects in a picture.* • Find a quarter in the context of measures and money, *e.g. 'Where is a quarter of the way between 0 and 20 cm on the ruler?'* Quarter • Know the difference between a quarter of one and a quarter of a quantity. • Understand what the symbol ¼ represents.

Y1 Steps 16–18	Measurement	Y2▶
Key Messages • *There are no statistics statements in Year 1 but work with measures provides many opportunities to lay the foundations for pictograms, tables and lists.* • *Pose questions in measurement contexts, gather information, order and interpret the information in a whole-class enquiry to lay the foundations of data collection and presentation* • *Ensure that the learning environment includes a range of practical equipment so that properties can be explored.* • *Children need to understand that they should use standard equipment if measures are to be consistent.* • *Provide lots of opportunities for children to explore and talk about working with objects and measuring instruments.* • *Use measurement language regularly: longer than / shorter than, heavier than / lighter than, roughly, about the same as, close to, just over, just under, narrow, wide, shallow, deep, thick, thin, first, today, yesterday, tomorrow, morning, afternoon, evening.*		

Y1 Steps 16–18	Measurement Y1
Statement	**Descriptors**
Compare, describe and solve practical problems for:	
lengths and heights *[e.g. long/short, longer/shorter, tall/short, double/half]*	• Describe objects using length words, *e.g. 'This straw is very short.'* • Compare two objects / areas directly, *e.g. 'Which is bigger, the classroom or the playground?'* • Find objects that are longer / shorter than another object starting from the same point, *e.g. a ruler or a metre stick.* • Compare, match and order two or more objects, order and describe what has been done, *e.g. Match and order a set of gingerbread men and their napkins by height / size.* • Compare lengths with a standard measure, such as a metre stick, *e.g. the drawers and the table.* • Explain why the same unit must be used to accurately compare the lengths of different objects.
mass/weight *[e.g. heavy/light, heavier than, lighter than]*	The pairs of terms: mass and weight are used interchangeably at this stage. • Describe objects using weight words, e.g. *'This box is heavy.'* • Compare two objects directly by feeling and balancing, pushing and lifting, including objects that are large and light, small and heavy. • Find objects that are heavier / lighter than a standard measure, *e.g. a 100 g or a 1 kg weight.* • Compare more than two objects, order and describe what has been done using weight words. • Compare several objects in relation to a standard measure, such as a kilogram weight. • Explain why the same unit must be used to accurately compare the weights of different objects. • Recognise that a malleable object remains the same weight if it changes shape.
capacity and volume *[e.g. full/empty, more than, less than, half, half full, quarter]*	The pairs of terms volume and capacity are used interchangeably at this stage. • Describe objects using capacity and volume words, *e.g. 'This jug is less than half full.' or 'This tower takes up the space of 16 bricks.'* • Compare two objects directly by packing and pouring. • Find objects that hold more / hold less than a standard measure, *e.g. a litre jug.* • Compare more than two objects, order and describe what has been done using capacity and volume words, *e.g. match the contents of bowls of porridge to the three bears.* • Compare several objects in relation to a standard measure, such as a litre. • Explain why the same unit must be used to accurately compare the capacity and volume of different objects. • Recognise that an amount of liquid remains the same when poured into a different container.
time *[e.g. quicker, slower, earlier, later]*	• Describe events using time words, *e.g. 'I'm quicker at running than Maisie,' or 'That took a long time!'* • Compare two events directly, *e.g. 'Who can do 20 jumps the quickest, you or Roy?'* • Compare two events with a non-standard unit, *e.g. touching toes, walking to the door and back.* • Compare two or more events in relation to a standard measure, *e.g. a one-minute sand timer.*
Measure and begin to record the following:	
lengths and heights;	• Measure an object / area with a non-standard unit, *e.g. 'How many counters cover the square?'* • Measure one object with different non-standard measures and record outcomes, *e.g. Find the length of a book with toy cars, counters and Multilink. Record by displaying the concrete objects.* • Measure objects with the same non-standard unit and record, *e.g. Measure the length of several objects with straws. Draw objects with numbers beside or fill in a data table an adult has drawn.* • Solve problems, *e.g. Tell me two objects that are about the same length as each other.* • Select the most appropriate tool to measure and object, *e.g. ruler, metre stick, trundle wheel.* • Estimate lengths and heights. • Use charts / diagrams to record findings, *e.g. a group cut string lengths of feet and stick on a chart.*

Y1 Steps 16–18	Measurement Y1
Statement	**Descriptors**
Measure and begin to record the following:	
mass and weight;	• Measure an object with a non-standard unit, *e.g. 'How many big shells do you think will balance your shoe? See if you were right.'* • Measure one object with different non-standard measures and record outcomes, *e.g. Find how many toy cars / conkers / cubes balance a tennis ball. Record by displaying the concrete objects.* • Measure several objects with the same non-standard unit and record, *e.g. Balance a selection of objects with shells. Record by drawing objects with numbers beside or fill in a data table an adult has drawn.* • Solve problems, *e.g. Lucy's book balances with 15 bricks and Guy's balances with 18 bricks. What's the difference?* • Select the most appropriate instrument for the object being weighed, *e.g. scales or balance.* • Estimate weights. • Use charts / diagrams to record findings, *e.g. Carroll diagrams heavier than / not heavier than 1 kg.*
capacity and volume;	There are 2 elements involved here: how much space an object takes up; measuring liquids / pourable solids in containers. • Find the volume / capacity of one object, *e.g. Find how many bricks can be packed into a bucket, how many cups of water fill a jug.* • Measure one object with different non-standard measures and record outcomes, *e.g. Fill a small bucket with a range of different objects such as beanbags and bricks and count them. Record with objects.* • Measure objects with the same non-standard unit and record, *e.g. Use spoonfuls of sand to fill different small containers. Draw objects with numbers beside or fill in a data table an adult has drawn.* • Solve problems, *e.g. 'Here are 3 bowls of cereal. Which is for Daddy Bear? How can you be sure?'* • Select the most appropriate container for liquids / pourable solids / objects being measured. • Estimate before finding capacities and volumes. • Use charts / diagrams to record findings, *e.g. Carroll diagrams holds more than / does not hold more than half a litre.*
time (hours, minutes, seconds).	• Develop a sense of how long events take, *e.g. Can they clear the table before 20 is counted?* • Measure one event with different non-standard measures and record outcomes, *e.g. 'How many times can you clap / jump / how far can you count whilst Sam puts his pumps on?'* • Measure more than one event with the same non-standard unit and record informally. • Explain why the same unit must be used to compare how long different events take. • Be able to say what might take a few seconds, a minute, more than an hour, etc. • Record outcomes of tasks in a practical context, *e.g. Talk about what has been done, or record with objects, numbers and units of measure.* • Solve time problems in a practical context, *e.g.* ♦ *'Draw a picture of your favourite time of day and a clock to show the time.'* ♦ *It's 10 o'clock now. What time was it 3 hours ago? What time will it be in 1 hour?* (Some of these questions could take the time across the noon boundary so take care with what is asked.)
Recognise and know the value of different denominations of coins and notes.	• Recognise the value of different coins. • Exchange higher ranked coins for the correct amount of 1p coins. • Order a set of coins and notes by value. • Exchange a collection of 1p coins for a higher ranked coin. • Total two or more coins (might exchange for 1p coins to do this), *e.g. In a money game collect coins up to 10p, the player with most wins.* • Read and write prices such as 8p or £4, *e.g. in role play.* • Solve problems with money, *e.g.* ♦ *'How many different ways could I pay for the rubber that costs 8p?'* ♦ *'Which purse would you rather have and why?'*
Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].	• Use time words correctly in context, *e.g. before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening.* • Sequence events correctly and describe what has been done, *e.g. in familiar stories or day-time routines.*

Y1 Steps 16–18	Measurement Y1
Statement	**Descriptors**

Recognise and use language relating to dates, including days of the week, weeks, months and years.	• Know the days of the week in order*, e.g. in story settings such as 'The Very Hungry Caterpillar.'.*
	• Know that some things occur at regular intervals, including:
	  ◦ daily;
	  ◦ weekly;
	  ◦ monthly;
	  ◦ yearly (annually).
	• Know that weekend days are Saturday and Sunday.
	• Know the months of the year in order.
	• Become familiar with a calendar in a class activity*, e.g. add special events to a class calendar that has a page for each month.*
	• Know that each day has a date with a day, a month and a year that is only used once.

Tell the time to the hour and quarter past the hour and draw the hands on a clock face to show these times.	Only use geared clocks when manipulating the hands to reinforce the concept of clockwise.
	• Become familiar with clocks in stories and rhymes*, e.g. Hickory Dickory Dock, Mr Wolf's Week*.
	• Know that there are different types of clocks that show us what time it is.
	• Know the features of an analogue clock: second hand, hour hand, minute hand and twelve numbers.
	• Know that it takes the minute hand one hour to make a full turn and at the same time the hour hand moves from one number to the next.
	⇒ *Describe position, direction and movement, including whole, half, quarter and three-quarter turns. (Geometry: Position and Direction, Year 1)*
	• Know the meaning of clockwise ('the way the clock turns') and anti-clockwise*, e.g.*
	  ♦ *Routinely move clock hands in a clockwise direction;*
	  ♦ *Follow instructions to turn clockwise and anti-clockwise.*
	• Tell / show the time on an analogue clock relating movement to amounts of turn for:
	  ◦ o'clock;
	  ◦ half past.
	• Recognise key times in the day on a clock and know what they are doing*, e.g. going home, bedtime.*

Y1 Steps 16–18	Geometry Properties of Shapes	Y2▶
Key Messages • *Make sure children have frequent hands-on opportunities to manipulate and build shapes and to talk about their names and properties with peers and adults.* • *Give children experience of regular and irregular shapes, of different size and in different orientations, so they can see what is the same and what is different.* • *Children need to apply their knowledge and understanding of 3-D shapes to real-life objects and experience 2-D shapes through exploring the faces of 3-D shapes.* • *Use prompts and probing questions to develop children's reasoning skills about shape, position and movement.* • *Use shape and space language: rectangle, square, circle, triangle, cuboid (rectangular prism), cube, pyramid, sphere, point, pointed, apex.*		

Y1 Steps 16–18	Properties of Shapes Y1
Statement	**Descriptors**
Recognise and name common 2-D and 3-D shapes, including:	

2-D shapes [for example, rectangles (including squares), circles and triangles];	Steps for each shape, including rectangles, squares, triangles and circles
	• Name a shape correctly.
	• Recognise a shape in the environment in different positions and orientations, *e.g. 'I Spy'.*
	• Select a described shape from a set of shapes / objects.
	• Describe a shape *e.g. Make pictures / models with shapes and talk about them.*
	• Visualise a shape, *e.g.*
	  ◆ *Take part in feely bag activities.*
	  ◆ *Select a shape matching a description from a collection.*
	  ◆ *Describe a shape for a friend to select without using its proper name.*
	• Know that all triangles have 3 sides and recognise any shape with three sides as a triangle.
	• Know that rectangles have 4 sides and their corners are all the same size and recognise rectangles in a set of four-sided shapes.

3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	Steps for each shape, including cuboids, cubes, pyramids and spheres
	• Name a shape correctly.
	• Recognise a shape in the environment in different positions and orientations, *e.g. 'I Spy'.*
	• Select a described shape from a set of shapes / objects.
	• Describe a shape *e.g. Make pictures / models with shapes and talk about them.*
	• Visualise a shape, *e.g.*
	  ◆ *Take part in feely bag activities.*
	  ◆ *Select a shape matching a description from a collection.*
	  ◆ *Describe a shape for a friend to select without using its proper name,*
	• Know that cuboids (rectangular prisms) have six faces that are all rectangles.
	• Know that a cube is a special cuboid where all its faces are square.
	• Know that pyramids can have different shapes on their base (except a circle) but all their other sides are triangles that meet at a point (apex).
	• Identify spheres in a set of mixed 3-D solids.
	• Solve shape problems, *e.g.*
	Sets of shapes will become more refined over time, *e.g. from a set of different shapes altogether to a set of 4-sided shapes only.*
	  ◆ *Recognise and create repeating patterns with shapes, explaining what has been done.*
	  ◆ *Sort shapes and say how they have been selected.*
	  ◆ *Identify shapes that do not belong to a set,* e.g. a square in a set of triangles.

Y1 Steps 16–18	Geometry Position and Direction	Y2▶
Key Messages • *Use prompts and probing questions to develop children's reasoning skills about shape, position and movement.* • *Use everyday routines and incidental occasions to reinforce the vocabulary of position and movement.* • *Plan opportunities where the language of position and movement will naturally support the activity, for example, through construction activities.* • *Use position and direction language: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside, ordinal numbers whole, half, quarter, three-quarter turns, in front, behind, underneath, forwards, backwards, sideways, close, near, far, opposite, beside, between.*		

Y1 Steps 16–18	Position and Direction Y1
Statement	**Descriptors**
Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	⇒ *Tell the time to the hour and quarter past the hour and draw the hands on a clock face to show these times. (Measurement, Year 1)* Position • Place objects according to instructions, *e.g.* ♦ *Move play people in a scene.* ♦ *Take part in 'behind the screen' – one child has pattern, describes it to friend who makes it, check if they look the same.* • Describe objects by their position in everyday language, *e.g. 'Tell me how I should arrange this plate, knife, fork, spoon and cup to lay the table properly.'* • Respond to instructions correctly, *e.g. 'Go and stand: under a light . . . in front of a window . . . beside the door.'* • Be able to imagine the position of something, *e.g. 'We can't see the hall, but what is next to the piano?'* Direction and Movement • Identify objects that turn: ◦ about a point, *e.g. scissors, number spinner*; ◦ about a line, *e.g. a door, hand of a clock.* • Make whole, half and quarter turns with objects, *e.g. Place a doll on the carpet with four objects around it. Make the doll do quarter turns, half turns, three-quarter turns or whole turns and see which of the objects the doll is facing.* • Know the meaning of left and right, *e.g. 'Which is your left hand?'* • Follow instructions for turning, *e.g.* ♦ *In PE turn left, right, make whole turn, half turn, three-quarter turn.* ♦ *In the outdoor area walk along the log, then make a half-turn and walk back.* ♦ *Imagine you are facing the window, now turn half a turn . . . what are you facing now?* • Use left, right, quarter turn, half turn, three quarter turn, straight line when talking about how they / objects have moved from one place to another, *e.g.* ♦ *Give me directions that take me from here to the hopscotch grid.* ♦ *Michelle and Solomon are going to take the register to the school office. Give them instructions to tell them how to get there.* • Know the meaning of clockwise ('the way the clock turns') and anti-clockwise, *e.g.* ♦ *Routinely move clock hands in a clockwise direction* (this must be a **geared** clock). ♦ *Use this language when giving instructions for movement*.

Year 2: Steps 19-21

Y2 Steps 19–21	Reading Word Reading	◀Y1
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*		Y3/4▶

Y2 Steps 19–21	Word Reading Y2
	See English Appendix 1.
Statement	**Descriptors**
Continue to apply phonic knowledge and skills as the route to decode words until automatic decoding has become embedded and reading is fluent.	• Blend sounds to read words.
Read accurately by blending the sounds in words that contain the graphemes taught so far, especially recognising alternative sounds for graphemes.	• Blend sounds to read words.

Read accurately words of two or more syllables that contain the same graphemes as above.	• Blend sounds to read words.
	• Identify words of two or more syllables through reading.
	• Show understanding of how using knowledge of syllables can support word reading, through a range of activities, e.g.
	  ◆ *locating a word with two / three syllables;*
	  ◆ *clapping the syllables in the word;*
	  ◆ *orally play games with words of two or more syllables.*
	• Read words of two or more syllables, including:
	  ○ splitting words into syllable chunks (identify syllable boundary) to aid reading, *e.g. using masking cards;*
	  ○ reading each syllable separately before combining syllables to read a word.

Read words containing common suffixes.	• Find words containing the suffix being focused on, when reading. • Identify root words and suffixes. • Use words within a sentence to apply understanding. ⇒ *Add suffixes to spell longer words, including –ment, –ness, –ful, –less, –ly. (Spelling, Year 2)* ⇒ *Formation of nouns using suffixes such as –ness, –er and by compounding. (VG&P, Year 2)* ⇒ *Formation of adjectives using suffixes such as –ful, –less. (VG&P, Year 2)* ⇒ *Use of the suffixes –er, –est in adjectives and –ly to turn adjectives into adverbs. (VG&P, Year 2)*
Read further common exception words, noting unusual correspondences between spelling and sound and where these occur in the word.	• Find common exception words when reading. • Discuss unusual correspondences between spelling and sound, *e.g. segment common exception words to locate tricky parts when spelling does not match sounds in a regular way.*
Read most words quickly and accurately, without overt sounding and blending, when they have been frequently encountered.	Books need to be at instructional level 90-94% accuracy**.** • Blend sounds to read words. • Read text consistent with phonic knowledge. • Read books at an age appropriate instructional level.
Read aloud books closely matched to their improving phonic knowledge, sounding out unfamiliar words accurately, automatically and without undue hesitation.	Books need to be at instructional level 90-94% accuracy**.** • Read text consistent with phonic knowledge. • Read books that are at an age appropriate instructional level.
Re-read these books to build up their fluency and confidence in word reading.	When re-reading books, *e.g. from 'familiar reading' baskets:* • Chunk language units together in text to practice phrasing within reading, *e.g. 'Once upon a time . . .'.* • Take notice of and use punctuation to phrase correctly when reading aloud. • Track text with eyes. (Pace of reading should not be dictated by finger pointing.)

Y2 Steps 19–21	Reading Comprehension Y2	◀Y1
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*		Y3/4▶

Y2 Steps 19–21	Comprehension Y2
Statement	**Descriptors**
Develop pleasure in reading, motivation to read, vocabulary and understanding by:	

listening to, discussing and expressing views about a wide range of contemporary and classic poetry, stories and non-fiction at a level beyond that at which they can read independently;	• Discuss books with other adults / pupils and consider their views.
	• Express ideas such as likes and dislikes and justify views.
	• Compare stories by the same and different authors, *e.g. discuss story themes, characters and plots.*
	• Compare information about topics from different sources.
	• Discuss cause and effect in both narrative and non-fiction, e.g.
	  ◆ *what prompted a character's behaviour in a story;*
	  ◆ *why certain dates are commemorated annually.*

discussing the sequence of events in books and how items of information are related;	• Identify key events across the text being discussed.
	• Link ideas and information across a text by:
	  ○ discussing how some events relate to each other, *e.g. problems and their resolutions;*
	  ○ identifying main ideas and summarising these to give some reasons why characters feel or behave as they do.
	• Orally tell real and imagined stories.
	• Sequence picture events.

becoming increasingly familiar with and re-telling a wider range of stories, fairy stories and traditional tales;	• Listen to a wide variety of stories read to them.
	• Read a wide variety of stories.
	• Identify story language, *e.g.*
	  ◆ *story openers;*
	  ◆ *favourite words and phrases;*
	  ◆ *scene setting language.*
	• Compare stories by the same and different authors, *e.g. discuss story themes, characters and plots.*
	• Identify what they know about settings, characters and events linking directly to the text.
	• Self-select books according to personal interest and preference, giving reasons for their selection.
	• Re-tell stories using a visual representation such as a story map, story mountain or flow diagram.
	• Use language from stories to enhance meaning, *e.g. 'In a far-away country', 'After a while', 'To his surprise', 'Sadly', 'Finally', 'Eventually'.*
	• Use intonation, volume and expression appropriately in oral re-telling.
	• Re-tell a story using own word without prompts.

being introduced to non-fiction books that are structured in different ways;	• Identify specific features of non-fiction text, including:
	  ○ headings and sub-headings;
	  ○ facts;
	  ○ contents;
	  ○ index;
	  ○ glossary;
	  ○ diagrams;
	  ○ captions and labels;
	  ○ bullet points;
	  ○ photographs.
	• Find information linked to specific purposes, using the structure of non-fiction texts, including:
	  ○ index;
	  ○ alphabetical order;
	  ○ contents page;
	  ○ headings and sub-headings.
	• Generate questions linked to their learning.
	• Skim across sections to discuss possible meanings, *e.g. read the title, headings, sub-headings, and diagrams.*
	• Scan sections for specific information, locating key word and phrases in answer to questions being explored.

Y2 Steps 19–21	***Comprehension Y2***
Statement	**Descriptors**
recognising simple recurring literary language in stories and poetry;	• Recognise repetitive language patterns. • Predict what will come next. • Recognise rhymes and rhythms.
discussing and clarifying the meanings of words, linking new meanings to known vocabulary;	• Learn new vocabulary when reading texts. • Speculate about possible meanings of words, checking to see if the meaning makes sense within its current context. • Use strategies to find the meaning of unfamiliar words, *e.g. re-reading sentences and reading on.* • Use a dictionary to locate words by their initial letter. • Improve vocabulary, *e.g. use a thesaurus or learning wall.*
discussing their favourite words and phrases;	• Identify favourite words and phrases in text. • Compare story openers, language which conveys change over time, including: ◦ settings, *e.g. 'In a deep, dark forest . . . ';* ◦ character moods and / or actions, *e.g. 'Angrily, he stomped out.';* ◦ timing of events, *e.g. 'Just at that moment . . . '*
continuing to build up a repertoire of poems learnt by heart, appreciating these and reciting some, with appropriate intonation to make the meaning clear	• Listen to a rich selection of poetry. • Learn chosen poems off by heart. • Talk about likes and dislikes of poems read, giving reasons for this. • Select favourite poems and explain why. • Show understanding of poetry by reciting orally using appropriate intonation, volume and expression.
Understand both the books that they can already read accurately and fluently and those that they listen to by:	
drawing on what they already know or on background information and vocabulary provided by the teacher;	• Make links to prior experience and other books previously read. • Identify how language contributes to meaning, *e.g.* ♦ *'Why is this book called . . . ?'* ♦ *'What do you think it is going to be about?'* • Discuss unknown vocabulary. • Suggest alternative synonyms.
checking that the text makes sense to them as they read and correcting inaccurate reading;	• Answer retrieval questions about the text, *e.g. 'What colour coat is she wearing?'* • Self-correct when a sentence does not make sense and re-read, *e.g. when reading 'palace' for 'place'.* • Take notice of and use punctuation when reading.
making inferences on the basis of what is being said and done;	• Make simple inferences about what characters might be thinking or feeling from what they say and do.
answering and asking questions;	• Explain thoughts about characters using the words in the text, *e.g. 'Would you like to be her friend?' 'Why?'* • Give an opinion on characters, character behaviour, authors and events, *e.g. 'What do you think about how Goldilocks behaved in the house of the three bears?' 'Why?'* • Generate questions about the text.
predicting what might happen on the basis of what has been read so far.	• Make a plausible prediction based on what has been read so far. • Discuss predictions drawing on evidence from the text.
Participate in discussion about books, poems and other works that are read to them and those that they can read for themselves, taking turns and listening to what others say.	Through discussion: • Express ideas such as likes and dislikes and explain why. • Compare stories by the same and different authors. • Discuss story themes, such as friendship and loss, characters and plots. • Self-select reading materials based on interests, past experience, recommendations and being able to explain preference. • Actively listen, *e.g. demonstrate through body language and being able to respond in turn.*
Explain and discuss their understanding of books, poems and other material, both those that they listen to and those that they read for themselves.	• Express ideas such as likes and dislikes and explain why. • Compare stories by the same and different authors, *e.g. discuss story themes, such as friendship and loss, characters and plots.* • Self-select reading materials based on interests, past experience and recommendations. • Explain preferences.

Y2 Steps 19–21	Writing Spelling Y2	◀Y1
Key Messages • *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Pupils should re-read their own and other's writing, with support, to check and improve clarity and the accuracy and consistency of spelling.*		Y3/4▶

Y2 Steps 19–21	Spelling Y2
Statement	**Descriptors**
Develop their understanding of the concepts set out in English Appendix 2 (Year 2) by:	
segmenting spoken words into phonemes and representing these by graphemes, spelling many correctly;	• Segment spoken words into phonemes. • Write graphemes to match phonemes heard, in the right order in single-syllable words. • Write graphemes to match phonemes heard, in the right order in multi-syllabic words. • Use phonic knowledge and skills when checking spelling.
learning new ways of spelling phonemes for which one or more spellings are already known, and learn some words with each spelling, including a few common homophones;	• Use some alternative graphemes to spell words with the same phoneme, *e.g. ow, oa, o-e.* • Spell common homophones with the correct graphemes, *e.g. sea / see, bare / bear.* • Use words in a sentence to demonstrate understanding of their meaning.
learning to spell common exception words;	• Identify common exception words when reading, noting unusual correspondences between spelling and sound, *e.g. because, could, should, beautiful.* • Spell and use new words learnt within a meaningful context. • Choose and use appropriate spelling strategies to support learning the word, *e.g.* ♦ *look, cover, say, write, check;* ♦ *mnemonics;* ♦ *highlighting the tricky part.* • Write new words with automaticity, *e.g. during spelling games.* • Use common exception words in independent writing.
learning to spell more words with contracted forms;	• Identify words with contracted forms. • Match the contracted form to words it represents *e.g. cannot / can't.* • Spell words with contracted forms; know where to place the apostrophe and which letters have been removed, *e.g. cannot – can't.*
learning the possessive apostrophe (singular) [for example, the girl's book];	• Identify words in context, *e.g. explain why the apostrophe has been added.* • Use and check that apostrophes have been added for singular possession in own writing, *e.g. the girl's name*. ⇒ *Apostrophes to mark . . . singular possession in nouns. (VG&P, Year 2)*
distinguish between homophones and near- homophones.	• Identify homophones and near-homophones. • Match the homophone / near-homophone to its meaning, *e.g. play homophone snap.* • Use words accurately in a sentence to demonstrate understanding of meaning.
Add suffixes to spell longer words, including –ment, –ness, –ful, –less, –ly.	• Identify words with the suffix being focused upon. • Identify and match the root word to the appropriate suffix. • Explain how the suffix changes the meaning of the word. • Use words with appropriate suffixes in independent writing. • Choose and use appropriate spelling strategies to support learning the word, *e.g.* ♦ *clapping syllables;* ♦ *writing each syllable;* ♦ *highlighting tricky parts.* • Read accurately words containing common suffixes. ⇒ *Read words containing common suffixes. (Word Reading, Year 2)* ⇒ *Formation of nouns using suffixes such as –ness, –er and by compounding. (VG&P, Year 2)* ⇒ *Formation of adjectives using suffixes such as –ful, –less. (VG&P, Year 2)* ⇒ *Use of the suffixes –er, –est in adjectives and –ly to turn adjectives into adverbs. (VG&P, Year 2)*
Apply spelling rules and guidance, as listed in English Appendix 1.	See English Appendix 1 spelling for Y2.
Write from memory simple sentences dictated by the teacher that include words using the GPCs, common exception words and punctuation taught so far.	• Write from memory simple sentences dictated by the teacher that include words using GPCs and common exception words taught so far.

Y2 Steps 19–21	Writing Handwriting	◀Y1
Key Messages • *Explicit teaching of the skills and processes essential to handwriting must precede, support and inform assessment of the STAT statements.*		Y3/4▶

Y2 Steps 19–21	Handwriting Y2
Statement	**No descriptors required for handwriting**
Form lower-case letters of the correct size relative to one another.	
Start using some of the diagonal and horizontal strokes needed to join letters and understand which letters, when adjacent to one another, are best left unjoined.	
Write capital letters and digits of the correct size, orientation and relationship to one another and to lower case letters.	
Use spacing between words that reflects the size of the letters.	

Y2 Steps 19–21	Writing Composition	◀Y1
Key Messages • *Use of talk for writing, role play, drama, reading, etc., is essential.* • *Modelling in shared writing must come prior to independent writing.* • *Write for a range of real purposes and audiences.* • *When using this grid for assessment, practitioners should look also for evidence from the SPaG and Reading grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*		Y3/4▶

Y2 Steps 16–18	Composition Y2
Statement	**Descriptors**
Develop positive attitudes towards and stamina for writing by:	
writing narratives about personal experiences and those of others (real and fictional);	• Write narratives which imitate and innovate upon good models of text which have been read to them, *e.g. during shared reading.* • Show a desire to write about meaningful, exciting experiences. • Re-tell personal experiences through writing. • Re-tell experiences of fictional characters through writing. • Persevere with writing tasks to completion.
writing about real events;	• Show a desire to write about meaningful, exciting experiences, *e.g.* ♦ *visitors;* ♦ *trips out of school;* ♦ *events within school and the local community.* • Write about real events, drawing upon experiences of listening to high quality texts which have been read to them. • Write recounts, *e.g. personal experience;* • Write instructions, *e.g. a simple recipe or rules to a game;* • Write explanations, *e.g. explain the lifecycle of a tadpole.*
writing poetry;	• Write poems in a given style inspired by poems read together. • Write poems based on personal experience, *e.g. visits to the woodland, seaside.*
writing for different purposes.	• Write for different purposes and audiences in a range of styles and genres, *e.g.* ♦ *lists;* ♦ *postcards / letters;* ♦ *diary entries;* ♦ *recounts;* ♦ *instructions;* ♦ *explanations;* ♦ *non chronological reports;* ♦ *writing in role.*
Consider what they are going to write before beginning by:	
planning or saying out loud what they are going to write about;	• Plan what they are going to write by orally rehearsing through a range of activities, *e.g.* ♦ *drama, such as hot seating, freeze framing, thought tracking;* ♦ *talk partner exchanges.* • Compose and rehearse sentences orally prior to writing.
writing down ideas and / or key words, including new vocabulary;	• Use a range of planning structures to record ideas prior to writing and to establish clear sections for writing, *e.g. mapping or story mountain.* • Record new vocabulary, key words and phrases to include in writing following class discussions, drama, role play, shared reading, etc. • Record and collect noun phrases for description and specification, *e.g. the blue butterfly, plain flour.* • Identify language to support cohesion and coherence, *e.g. time conjunctions.* • Show an understanding of how meaning links from section to section, *e.g. appropriate use of time conjunctions in context.* • Show an understanding of how ideas are grouped in sections for writing, *e.g. a cyclical diagram to plan how to organise an explanation of the life cycle of a tadpole.*
encapsulating what they want to say, sentence by sentence.	• Orally rehearse what they are going to write about sentence by sentence, *e.g. use talk frames, talk partners.*

Y2 Steps 16–18	Composition Y2
Statement	**Descriptors**
Make simple additions, revisions and corrections to their own writing by:	
evaluating their writing with the teacher and other pupils;	• Use self-assessment and peer assessment to say what they like about their writing and how they might improve it. • Identify next steps by discussing their writing with an adult.
re-reading to check that their writing makes sense and that verbs to indicate time are used correctly and consistently, including verbs in the continuous form;	• Re-read sentences during and / or after writing, making revisions which improve clarity. • Read writing to a partner, discuss if it makes sense and make appropriate revisions / corrections. • Make appropriate revisions and corrections to writing by checking verb tenses are used correctly and consistently, including continuous forms, *e.g.; 'is sitting', 'was sitting'.* • Identify verbs indicating time in their writing and check that they are used correctly and consistently. ⇒ *Correct choice and consistent use of present tense and past tense throughout writing. (VG&P, Year)*
proof-reading to check for errors in spelling, grammar and punctuation [for example, ends of sentences punctuated correctly];	See also English Appendix 1 and 2 (Y2). • Identify (with support) possible spelling errors and know strategies for how and when to make changes. • Identify possible errors in grammar and make appropriate improvements, *e.g. read writing with a response partner.* • Identify accurate use of capital letters, full stops, question marks and exclamation marks to demarcate sentences and correct errors. • Identify accurate use of commas to separate items in a list and correct errors. • Identify accurate use of apostrophes of omission and apostrophes to mark singular possession in nouns and correct errors, *e.g.; the girl's name.* • Re-read writing and independently identify errors and make all necessary corrections, using support provided in the provision, *e.g.* ◆ *working walls;* ◆ *vocabulary banks;* ◆ *spelling journals;* ◆ *dictionaries;* ◆ *punctuation fan.* ⇒ *Use of capital letters, full stops, question marks and exclamation marks to demarcate sentences. (VG&P, Year 2)* ⇒ *Commas to separate items in a list.* ⇒ *Apostrophes to mark where letters are missing in spelling and to mark singular possession in nouns [e.g. the girl's name].* ⇒ *How the grammatical patterns in a sentence indicate its function as a statement, question, exclamation or command. (VG&P, Year 2)*
Read aloud what they have written with appropriate intonation to make the meaning clear.	• Read aloud their writing to a range of audiences using appropriate intonation to make the meaning clear. • Vary the speaking voice when reading aloud to reflect their understanding of how punctuation informs the way in which we read, *e.g. 'It's a giant! A giant? A giant is coming.'*

Y2 Steps 19–21	Writing Vocabulary, Grammar and Punctuation	◀Y1
Key Messages • *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Develop their understanding of the concepts set out in English Appendix 2 by learning how to use both familiar and new punctuation correctly from English Appendix 2 (Year 2).*		Y3▶

Y2 Steps 19–21	Vocabulary, Grammar and Punctuation Y2
Statement	**Descriptors**
Word content to be introduced (statutory requirement):	
Formation of nouns using suffixes such as –ness, –er and by compounding (e.g. whiteboard, superman).	• Identify nouns in reading and discuss how adding suffixes changes the meaning of words. • Recognise and group nouns together based on their suffixes, *e.g. generate word collection charts, adding to them as words are found in reading.* • Discuss the meaning of new words and use them in sentences to demonstrate understanding. • Identify compound words in reading and add to word collection charts. • Discuss the meaning of new compound words and use them in a sentence to demonstrate understanding. • Make compound words, *e.g. match two words to form a compound word and use them in sentences to demonstrate understanding.* ⇒ *Add suffixes to spell longer words, including –ment, –ness, –ful, –less, –ly. (Spelling, Year 2)*
Formation of adjectives using suffixes such as –ful, –less.	A fuller list of suffixes can be found in the year 2 spelling appendix. • Identify adjectives with suffixes in reading. • Recognise and group adjectives together based on her suffixes, *e.g. generate word collection charts, adding to them as words are found in reading.* • Discuss the meaning of new adjectives and use them in a sentence to demonstrate understanding. • Show, in writing, an understanding of how adding suffixes changes the meaning of words. ⇒ *Add suffixes to spell longer words, including –ment, –ness, –ful, –less, –ly. (Spelling, Year 2)*
Use of the suffixes –er, –est in adjectives and –ly to turn adjectives into adverbs.	In writing: • Use suffixes ***er*** and ***est*** added to adjectives to form comparatives and superlatives, *e.g. tall, taller, tallest.* • Use the suffix ***ly*** added to an adjective to form an adverb, *e.g. quiet, quietly.* ⇒ *Add suffixes to spell longer words, including –ment, –ness, –ful, –less, –ly. (Spelling, Year 2)*
Sentence content to be introduced (statutory requirement):	
Subordination (using when, if, that, because) and co-ordination (using or, and, but).	• Identify subordinating conjunctions in reading and understand that they can extend sentences, *e.g. 'Jack grabbed the hen that laid the golden eggs.'* • Identify co-ordinating conjunctions in reading and understand that they can extend sentences, *e.g. Anne loves fish and chips but hates mushy peas.* • Orally rehearse sentences using both subordinating and co-ordinating conjunctions. • Use subordination in writing, *e.g. when, if, that, because.* • Use co-ordination in writing, *e.g. or, but, and.*
Expanded noun phrases for description and specification (e.g. the blue butterfly, plain flour, the man in the moon).	• Identify expanded noun phrases in reading and understand that they can add detail to writing. • Use expanded noun phrases in writing.

How the grammatical patterns in a sentence indicate its function as a statement, question, exclamation or command.	• Identify punctuation which denotes statements, questions, exclamations and commands and understand the difference in use.
	• Show an understanding of how the grammatical patterns in a sentence indicate its function by using appropriately in writing:
	  ◦ a statement, *e.g. The Y2 children visited Whirlow Hall farm.*
	  ◦ a question, *e.g. How many new born lambs were in the lambing barn?*
	  ◦ an exclamation, *e.g. A baby lamb. How cuddly!*
	  ◦ a command, *e.g. Sit down and eat your lunch.*
	⇒ *Make simple additions, revisions and corrections to their own writing by proof-reading to check for errors in spelling, grammar and punctuation. (Composition, Year 2)*
	⇒ *Correct choice and consistent use of present tense and past tense throughout writing. (VG&P: Punctuation, Year 2)*

Y2 Steps 19–21	Vocabulary, Grammar and Punctuation Y2
Statement	**Descriptors**
Text content to be introduced (statutory requirement):	
Correct choice and consistent use of present tense and past tense throughout writing.	• Identify verbs which indicate past and present tense. • Show an understanding of how tenses must be consistent, in writing. ⇒ *Make simple additions, revisions and corrections to their own writing by re-reading to check that their writing makes sense and that verbs to indicate time are used correctly and consistently, including verbs in the continuous form; (Composition, Year 2)* ⇒ *How the grammatical patterns in a sentence indicate its function as a statement, question, exclamation or command. (VG&P: Sentence, Year 2)*
Use of the progressive form of verbs in the present and past tense to mark actions in progress (e.g. she is drumming, he was shouting).	• Identify progressive form of verbs in the present and past tense. • Use the progressive form of verbs in the present and past tense to mark actions in progress, in writing.
Punctuation content to be introduced (statutory requirement):	
Use of capital letters, full stops, question marks and exclamation marks to demarcate sentences.	• Use correct punctuation in own writing to demarcate sentences. • Use the punctuation appropriately to inform the way text / writing needs to be read. ⇒ *Make simple additions, revisions and corrections to their own writing by proof-reading to check for errors in spelling, grammar and punctuation. (Composition, Year 2)* ⇒
Commas to separate items in a list.	• Identify how commas are used in lists. • Use commas accurately in lists, in writing, *e.g. Tom had bacon, eggs and tomatoes for breakfast.* ⇒ *Make simple additions, revisions and corrections to their own writing by proof-reading to check for errors in spelling, grammar and punctuation. (Composition, Year 2)*
Apostrophes to mark where letters are missing in spelling and to mark singular possession in nouns [e.g. the girl's name].	• Identify words with contracted forms and demonstrate, orally, an understanding of the expanded form. • Show understanding of apostrophes by matching the contracted form to the word or words it represents, *e.g. can't / cannot.* • Identify words in which the apostrophe indicates possession. • Show understanding by using apostrophes denoting singular possession accurately in writing. • Use contracted forms in writing. ⇒ *Develop their understanding by learning the possessive apostrophe (singular). (Spelling, Year 2)* ⇒ *Make simple additions, revisions and corrections to their own writing by proof-reading to check for errors in spelling, grammar and punctuation. (Composition, Year 2)*
Terminology for pupils content to be introduced (statutory requirement):	
Use and understand the grammatical terminology in English Appendix 2 in discussing their writing: *noun, noun phrase* *statement, question, exclamation, command;* *compound, suffix;* *adjective, adverb, verb;* *tense (past, present);* *apostrophe, comma.*	• Use accurate grammatical terminology when analysing text and explain the impact created. • Use accurate terminology when discussing how grammar has been used to create effect within writing.

Y2 Steps 19–21	Number Number and Place Value	◀Y1 Y3▶

Key Messages

- *Counting is a key activity and most learning about calculation will be based on this so it should be a daily activity.*
- *Concrete objects, pictorial representations, and mental calculation are the basis of activities and provide models and images for later mental calculations.*
- *Developing the concept of place value is critical. Pupils should be given opportunities to explain their reasoning.*
- *Give children lots of opportunities to solve practical problems involving estimating, counting and ordering.*
- *Wherever possible calculation should be taught in the context of solving real life problems.*
- *A number sentence should only be recorded about what a child knows and understands.*
- *Vocabulary: hundreds, digit, one-, two- or three-digit number, 'teens' number, place, place value, stands for, represents, exchange, the same.*

Y2 Steps 19–21	Number and Place Value Y2
Statement	**Descriptors**

Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.

Count in multiples of 2

- Count forwards in multiples of 2 from 0.
- Count backwards in multiples of 2 from any multiple up to 12×.
- Recognise digit patterns.
- Use to solve problems, *e.g. How many 2p coins are needed to make 12p?*

Count in multiples of 5

- Count forwards in multiples of 5 from 0.
- Count backwards in multiples of 5 from any multiple up to 12×.
- Recognise digit patterns.
- Use to solve problems, *e.g. How many toes on 7 feet?*

Count in multiples of 3

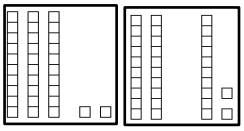
- Count forwards in multiples of 3 from 0.
- Count backwards in multiples of 3 from any multiple up to 12×.
- Recognise digit patterns.
- Use to solve problems, *e.g. How many corners on 5 triangles?*

- Explore the patterns of multiples and their final digits, *e.g. colouring on 100-squares.*
- Count up to 100 objects efficiently by grouping them and counting in tens, fives or twos.
- Count confidently forwards and backwards in multiples of 10 from any number and use to solve problems, *e.g. 'How much change is needed from £1 if you spend 45p?' (count on in 10s from 45p)*
- Recognise patterns when counting in tens, forwards or backwards, from any start number, *e.g. when counting backwards or forwards in 10s from 16 the numbers always end in 6.*

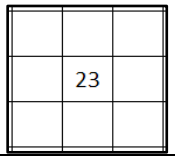
Recognise the place value of each digit in a two-digit number (tens, ones).

- Explain why it is necessary to have a 0 in some numbers, *e.g. 40.*
- Know what each digit in a two-digit number represents using apparatus to support the explanation, *e.g. 'In 23 the 2 has a value of 20 and the 3 is three ones.'*

- Know which two multiples of 10 any two-digit number lies between.
- Partition two-digit numbers in different ways, including into multiples of 10 and 1, with and without concrete apparatus to support subtraction, *e.g.* *32 = 30 + 2 and 20 + 12 so 32 – 12 = 20 and 32 – 20 = 12.*



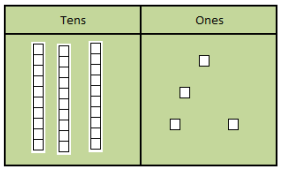
- Solve place value problems, *e.g.*
  - *Make as many different numbers as possible with the cards 20, 40, 3 and 5.*
  - *32 = ▢ + 2.*
  - *Fill in the missing values in a partly numbered 100-square.*



Identify, represent and estimate numbers using different representations, including the number line.

Using Apparatus

- Record solutions in an organised way using pictures or symbols.
- Refer to materials used, such as tens and ones boards with base 10 apparatus, and talk about what has been done their work, *e.g. 'I have 3 tens and 4 ones and that is 34.'*
- Use bead strings / number lines / number tracks / hundred squares to represent calculations and compare their relationships, *e.g. 'How many more than 33 is 53', 'How many less than 53 is 33?'*



Estimation

- Estimate concrete objects to the nearest 10, *e.g. A pot with19 pairs of scissors has about 20 pairs.*
- Estimate amounts more than 10 represented in different ways, *e.g.*
  - *Grab handfuls of tens and ones (base 10 apparatus), estimate and count.*
  - *Estimate objects in random arrangements,* e.g. Counting ITP.
  - *How many marbles in a jar?*

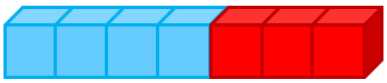
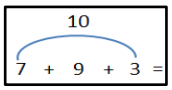
Y2 Steps 19–21	Number and Place Value Y2
Statement	**Descriptors**
Compare and order numbers from 0 up to 100; ***use <, > and = signs.***	Recognise odd and even numbers in context: ◦ Count in twos from zero. ◦ Find halves of quantities. ◦ Use repeated subtraction in twos (division). • Know that the tens digit in a two-digit number is more significant than the units digit when deciding on size, *e.g. position a number in the correct place on an un-numbered number track.* • Order a selection of numbers in ascending and descending order, discussing the value of their digits and considering their relative positions on a number line, *e.g. 65, 56, 66, 55.* • Compare the size of two numbers using the <, > and = symbols correctly to record comparisons. • Explain the relationship between three or more numbers, *e.g. 15 is greater than 3 but less than 62.* • *Solve problems, e.g. Fill in numbers that make sense ▢> ▢< ▢= ▢.*
Read and write numbers to at least 100 in numerals and in words.	Should be able to concentrate on 20 to 100 as 1 to 20 were covered thoroughly in Year 1. • Read numbers 1 to 100 in numerals, using number tracks, number lines and number squares to identify where they lie, individually or in blocks, *e.g. Identify the 'fifties' on a 100-square.* • Write numerals for numbers to 100, understanding that numbers from 10 to 99 have 2 digits, and why it is important that the order of the digits is correct, *e.g. Be able to explain the difference between 14 and 41.* • Explain why there is a place keeping zero in the tens numbers, *e.g. How is 40 different from 4?* • Read numbers to 100 in words, such as labels around the classroom. • Write numbers to 100 in words (this could be a writing activity), *e.g. Start counting, stop and pupil writes the next number on a whiteboard in words (and numerals).*
Use place value and number facts to solve problems.	• Describe and extend number sequences, *e.g.* ♦ *Find missing numbers in sequences of threes.* Not necessarily at the same time as the counting work with threes. ♦ *Describe patterns in the sequences generated when they count on or back in steps of 1, 2, 3, 5 and 10,* e.g. When counting in fives the numbers are odd, even, odd, etc. • Use and apply number and place value into word problems, *e.g.* ♦ *Using three single-digit numbers, make the largest / smallest two-digit number possible.* ♦ *How would you create the largest possible two-digit even number from the digit 7 and another one of your choice?* • Use and apply number and place value into investigations, *e.g.* ♦ *A purse contains 63p. How much money is left when 10p is taken out?* • Use charts and diagrams to present information, *e.g.* ♦ *Sort a set of dominoes on a Carroll diagram for 'has a two spot' and 'does not have a two spot'.* ♦ *Sort a set of numbers on a Venn diagram for 'odd number' and 'smaller than 10'.*

Y2 Steps 19–21	Number Addition and Subtraction	◀Y1 Y3▶

Key Messages

- *In oral and mental work generate subtraction facts from addition facts and vice versa to model inverse operations and show how to find a missing number.*
- *Provide regular opportunities for pupils to explain how they decided whether to use addition or subtraction to solve particular problems, including those involving money and measures.*
- *Model the correct use of addition and subtraction vocabulary in a variety of contexts and support pupils towards using the language to explain their thinking and methods.*
- *Model how to represent practical situations, using apparatus, pictures, and jottings and then using number sentences.*
- *Provide opportunities for pupils to choose when to use a counting back or a counting on method for subtraction.*
- *Provide opportunities for children to explain their methods and to discuss and compare alternative methods.*
- *Use language of addition and subtraction: add, subtract, plus, minus, count on, count back, less than, more than, fewer than, greater than and difference between.*

Y2 Steps 19–21	Addition and Subtraction Y2
Statement	**Descriptors**
Solve problems with addition and subtraction:	
using concrete objects and pictorial representations, including those involving numbers, quantities and measures.	• Solve problems using a range of concrete objects and pictorial representations: ◦ Use counting objects, *e.g. Put 15 buttons in three boxes so that each box has 3 more buttons than the one before.* ◦ Use cut lengths for measuring or comparison, such as pieces of string, to answer the questions such as 'Is your stride longer than Mary's? How much longer or shorter is it?' ◦ Use measuring instruments, such as a balance and weights, to answer 'How much lighter is the green ball than the blue one?' or 'There is a green ball on one side and a blue one on the other. How can you make it balance?' ◦ Use pictures, such as two thermometers, to answer the question 'What's the difference between the temperature inside and outside the classroom?' ◦ Draw illustrations, *e.g. 'Sue has 13 litres of water. A bucket holds 5 litres. How many buckets are needed to hold all the water?* ◦ Use coins to answer questions, *e.g. Marcus spent 24p. He spent 8p more than Chelsea. How much did Chelsea spend?* ◦ Use a 100 square grid, *e.g. to add or subtract a multiple of 10 to or from any two-digit number.* ◦ Use place value apparatus, such as base 10 / abacus, *e.g. to add multiple of 10 to a two-digit number or to partition a number before subtraction.* ◦ Use number lines, *e.g. use an empty number line to find passage of time between two events, such as 'We started the PE lesson at 9:30 and finished it at 10:15. How long did it last?'* • Select apparatus and representations appropriate to the task.
applying their increasing knowledge of mental and written methods.	If number facts are not known, i.e., mental recall is not secure, support for calculation will be number lines and number grids as opposed to concrete objects or pictorial representations for this objective. • Look at the numbers in a calculation carefully before deciding whether to use a mental or written solution to addition and subtraction calculations / problems. Explain decision. • Select the easiest method of subtraction in context of the problem and explain the choice made, such as: counting back from the larger number; finding a difference by counting on from the smaller number. • Record answers to problems in number sentences, using the appropriate words and symbols of plus (+), minus (–) and equals (=). ⇒ *Add and subtract numbers using concrete objects, pictorial representations, and mentally . . . (Number: Addition and Subtraction, Year 2)*
Recall and use addition and subtraction facts:	
to 20 fluently.	• Know all pairs of numbers that equal any given number up to 20, *e.g. 'Which addition equations equal 6? Have you got them all?'* • Know all the subtraction facts within 20 that equal a specified answer, *e.g. Tell me six different subtraction facts with an answer of 3 where no number in the number sentence is greater than 20. Could you have found any more? How would you know if you had found them all?* • Know number bonds and related subtraction facts to 20, *e.g. Respond instantly to questions such as:* ◆ *What must I add to 6 to equal 11?* ◆ *Which double has an answer of 14?* ◆ *What is the difference between 15 and 9?* ◆ *Tell me an addition fact that equals 15.* ⇒ *Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. (Number: Addition and Subtraction, Year 2)*

Y2 Steps 19–21	Addition and Subtraction Y2
Statement	**Descriptors**
and derive and use related facts up to 100.	⇒ *Recall and use addition and subtraction facts to 20 fluently (Number: Addition and Subtraction, Year 2) for the first part of this objective (Number: Addition and Subtraction, Year 2)* • Add and subtract ten to any two-digit number, initially using equipment such as base 10 apparatus. • Using number bond knowledge to 10, derive all pairs of multiples of 10 with totals up to 100, *e.g. 3 + 4 = 7 so 30 + 40 = 70.* • Know what needs to be added / subtracted to / from a two-digit number to reach the next multiple of 10 (not into negatives for subtraction), *e.g.* ◆ *What needs to be added to 87 to equal 90? or 87 + ▢ = 90.* ◆ *▢ + 87 = 90.* ◆ *What needs to be subtracted from 87 to reach 80?* ◆ *87 - ▢ = 80.* • Use known number bonds, that have single digits only, and their related subtraction fact, to derive number bonds to 100 and related subtraction facts, *e.g.* ◆ *6 + 7 = 13 so 36 + 7 = 43 and 36 + 27 = 63.* ◆ *9 – 7 = 2 so 49 – 7 = 32 and 49 – 27 = 22.*
Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: *See 'using concrete objects and pictorial representations, including those involving numbers, quantities and measures' (first objective in this section).*	
a two-digit number and ones;	• Add or subtract a one-digit number to or from a two-digit number. • Mentally add or subtract any one-digit number to or from any two-digit number by applying known number facts. • Mentally add 9 to any number by adding 10 then subtracting 1. • Mentally subtract 9 from any number by subtracting 10 then adding 1.
a two digit number and tens;	• Mentally be able to say pairs of multiples of 10 that equal 100, *e.g. 30 + 70.* • Mentally add or subtract a multiple of 10 to or from any two-digit number.
two two-digit numbers;	• Mentally add 11 to any number by adding 10 then adding 1 more. • Mentally subtract 11 from any number by subtracting 10 then subtracting 1 more. • Add or subtract a multiple of 10 to or from any two-digit number, *e.g. use a 100 square grid.* • Add or subtract two two-digit numbers, where: ◦ the ones do not cross a tens boundary, such as 21 + 37 or 56 – 23; ◦ the ones do cross a tens boundary and bridging is required, such as 36 + 48 or 45 – 27. • Mentally add or subtract any two two-digit numbers not crossing boundaries, *e.g. 16 + 21 or 86 - 43.*
adding three one-digit numbers.	• Add three one-digit numbers starting with the largest, *e.g. In your head turn 1 + 2 + 5 into 5 + 2 + 1.* • Add and subtract single-digit numbers in the same equation, *e.g. 9 + 4 – 5.*
Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	• Understand that the answer is always the same when the same two or more numbers are added together in different orders, *e.g. make a number bond with Multilink, flip it over, talk about what has happened and write equations to match the two outcomes.*  • Use knowledge that addition can be done in any order to: ◦ find pairs of multiples of 10 before addition, such as **7** + 9 + **3** = 10 + 9 or 6 + **7** + **33** = 40 + 6; ◦ start with the largest number first, *e.g.* 2 + 9 + 2 = 13 can be calculated as 9 + 2 + 2 = 13.  • Know subtraction cannot be done in any order, such as 9 - 4 does not give the same answer as 4 – 9, *e.g. demonstrate this with objects and on number lines.* (Don't say, 'We **can't** take 9 away from 4.')
Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	• Explore inverse operations, recognising that subtraction 'undoes' an addition and vice versa, *e.g. add 7 to any number and then subtract 7 and record, such as 48 + 7 = 55, 55 - 7 = 48.* • Apply inverse operations to missing number problems, *e.g.* ◆ *24 - ▢ = 15.* ◆ *Put + or – in each circle to make these calculations correct: 27 ▢ 8 = 35 or 62 ▢ 55 = 7.* ◆ *Here are two numbers (13 and 7). They are part of a missing number calculation. What could the other number be? Write down all the number facts you can with your numbers.* ◆ *Use 1, 4, 5 and +, –, = to write as many calculations as you can.* • Use addition to check the answer to subtraction calculations and subtraction to check addition.

Y2 Steps 19–21	Number Multiplication and Division	◀Y1 Y3▶

Key Messages

- *Counting is a key activity and most learning about calculation will be based on this so it should be a daily event.*
- *Concrete objects and pictorial representations provide models and images for later mental calculations.*
- *Wherever possible calculation should be taught in the context of solving real life problems.*
- *A number sentence should only be recorded about what a child knows and understands.*
- *Use language of multiplication and division: repeated addition, multiply, repeated subtraction, share equally, divide, equal groups of, twice as (big, long, wide), half as (big, long, wide), left over, multiple.*

Y2 Steps 19–21	Multiplication and Division Y2
Statement	**Descriptors**

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables,

Steps to knowing the 10× table:

- Recite the times table fluently forwards and backwards.
- Write the times tables in ascending and descending order.
- Know by heart the multiplication and division facts.
- Use the 10× table facts confidently in calculations.

Steps to knowing 2× table:

- Recite the times table fluently forwards and backwards.
- Write the times tables in ascending and descending order.
- Know by heart the multiplication and division facts.
- Use the 2× table facts confidently in calculations.

Steps to knowing 5× table:

- Recite the times table fluently forwards and backwards.
- Write the times tables in ascending and descending order.
- Know by heart the multiplication and division facts.
- Use the 5× table facts confidently in calculations.

- Know the term 'multiple' as a property of a number, *e.g. 50 is a multiple of 5*

Doubling and Halving

- Recognise that doubling a number is the same as multiplying it by 2.
- Use diagrams to show doubling of a quantity, amount or measure, *e.g. Draw hops on a number line.*
- Recognise that finding half of a number is the same as dividing it by 2.
- Use diagrams to show halving a quantity, amount or measure, *e.g. Share 16 cherries between 2 cakes.*
- Understand that halving is the inverse of doubling, *e.g. 40 ÷ 2 = 20, 20 is half of 40.*
- Recall doubles of all numbers up to 20 in context, such as money and measures.
- Recall halves of even numbers up to 40 in context, such as money and measures.

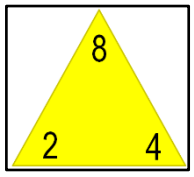
including recognising odd and even numbers.

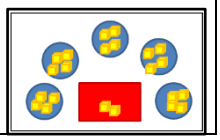
Odd and Even Numbers

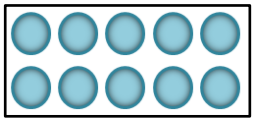
- Know that even numbers are multiples of 2 and odd numbers are non-multiples of 2, *e.g. Explain that there is one left over when sharing any odd number equally between 2 people.*
- Recognise odd and even numbers written in numerals by number patterns in the final digit, *e.g. Sort a range of numbers up to 100 for odd and even properties.*

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.

- Relate division to multiplication by rephrasing an equation into words or vice versa, *e.g. 20 shared into groups of 5 can be altered to, 'How many 5s make 20?'*
- Understand and write the symbols × and ÷ in mathematical statements.
- Record equal jumps on a number line or bead string, writing the repeated addition / subtraction statement and the matching multiplication / division statement, *e.g. 2 + 2 + 2 + 2 + 2 + 2 and 6 × 2.*
- Be able to use inverse operations of × and ÷ to record number facts, *e.g. Write down 4 calculations that have only the trio of numbers 8, 2 and 4 in them.*
- Know it might be necessary to record a remainder when sharing unknown quantities, *e.g. 22 sweets shared between 5 children results in a remainder of 2 ⇒ 22 ÷ 5 = 4 remainder 2.*





Y2 Steps 19–21	Multiplication and Division Y2
Statement	**Descriptors**
Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	• Investigate the answers and patterns of rotated pairs of numbers in multiplication, such as *2 × 4 and then 4 × 2, e.g. make arrays on peg boards or counters on squared paper.* • Explain why multiplication can be done in any order based on practical experience. • Explain why division cannot be done in any order based on practical experience, *e.g. Share 8 cubes between 2 cups so there are 4 in each cup, then 2 cubes between 8 cups so there are some cups without any cubes (unless the cubes can be quartered).* • Know that if the number of objects is smaller than the number they are being shared between there will not be enough for one each. • Recognise that in some cases, where objects can be broken into parts, equal sharing is possible but the answer might not be a whole number, *e.g. 1 cake can be equally shared between 2 people by cutting the cake in half.* ⇒ *Recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity. (Number: Fractions, Year 2)*
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	• Understand and solve problems in different formats and by different methods, including: ◦ using and interpreting arrays, *e.g. How many different calculations can you write about this array?* ◦ using repeated addition / subtraction on number lines, *e.g. A carton of orange fills 5 cups. Gareth is having 12 people to his party and needs enough orange for everybody. How many cartons of orange does he need to buy?* ◦ using mental recall, *e.g. If you can hop 10 times in one minute, how many hops could you do in 5 minutes? Can you work out how many you could do in half a minute?'*  • Solve properties of numbers problems, *e.g.* ♦ *Write down 3 different numbers that can be shared equally between 2 people and also equally between 5 people. What do you notice? Can you write down more numbers without checking them? (10, 20, 30 . . .)* ♦ *Sort numbers such as 13, 4, 30, 82, 19, 166 into double-circled Venn diagrams, with properties 'even' / 'a multiple of 5' / 'bigger than 50', etc.* • Solve calculation problems, *e.g.* ♦ *Use function machines, such as ☐ ⇒ double ⇒ subtract 2 ⇒ halve ⇒ ☐. What do you notice about your answers?* ♦ *Tell or draw a division or multiplication story for 20 ÷ 5 or 6 × 5;* ♦ *Shut your eyes and imagine your pencil is on 0 on a number line. Draw five loops going up in 2s. Now draw two loops going back in 2s towards 0. What number did you finish on? Draw what you imagined on your whiteboard.* • Complete missing numbers problems, *e.g.* ♦ *What could the missing numbers be for ☐ × ☐ = 20?* ♦ *Look at this number pattern, 15, 20, 25. Can you write the two numbers that come before / after?* • Explain how a problem has been solved.

Y2 Steps 19–21	Number Fractions	◀Y1 Y3▶

Key Messages

- *Children should manipulate and generate examples of fractions, using practical equipment to represent parts of a whole.*
- *There should be clarity about the differences between fractions of shapes and fractions of quantities.*
- *Children need to be confident with unitary fractions, e.g. ¼, before moving on to multiple numerators, e.g. ¾.*
- *When finding a fraction of one don't use objects that have been combined together, such as a stick of 6 Multilink, as this could cause confusion with fractions of quantities later.*
- *Work with all the fractions during the same time period so that concepts can be properly understood.*
- *Fraction notation can gradually be introduced during the course of work on this objective.*
- *Use language of fractions; part, equal parts, fraction, whole, one half, two halves, one quarter, two / three / four quarters.*

Y2 Steps 19–21	Fractions Y2
Statement	**Descriptors**
Recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity.	*See Fractions Year 1 for detailed work on half and a quarter of shapes and quantities. Re-visit if necessary.* ⇒ *Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. (Number: Multiplication and Division, Year 2)* Third of one • Find a third of one object that can be broken / contents moved, *e.g. playdough, container of water, string, piece of fruit, and piece of paper.* • Find a third of one object that cannot be broken, *e.g. a 30 cm ruler.* Third of a shape • Find a third of a range of different paper shapes (different sizes and orientations). • Recognise / talk about an object that is a third of something. • Know that three thirds of a shape can combine to make one. • Know that a third of one shape might be larger or smaller than a third of another one. Third of a quantity more than one • Find a third of a quantity of objects by equal sharing, *e.g. counters.* • Know that objects might not always share equally into 3 groups – there may be 1 or 2 left. • Find a third of a quantity that cannot be moved, *e.g. objects in a picture.* • Find a third in the context of measures and money, *e.g.* 'You have 60p. One third of your money will buy a ball. How much does a ball cost?' Three-Quarters • Find three-quarters of one object that can be broken / contents moved, *e.g. playdough, container of water, string, piece of fruit, and piece of paper.* • Combine quarters of shapes to make three-quarters of the shape, explaining what has been done. • Know that three-quarters of the same shape, such as a rectangle, can be shown in different ways and they may look different from each other.  • Find ¾ of a quantity by equal sharing into four and recombining three lots. General • Recognise and write fraction notation for ⅓, ¼, ²⁄₄, and ¾.
Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	• Find fractions in the context of numbers and measures through equal sharing and grouping, *e.g.* ♦ How long is half of this piece of string? ♦ How many $m\ell$, do you need to make the one-litre cylinder one-quarter full? • Record findings about fractional quantities in equations using fractional notation, *e.g.* 1/2 of 12 cm is 6 cm. • Find half of an odd number within 100, *e.g. half of 3 cakes, half of 81.* Equivalence of One-Half and Two-Quarters • Count forwards and backwards in quarters up to 10, changing equivalence along the way, i.e., 1¾ will become 1½. • Know that ½ and ²⁄₄ are equivalent fractions in all contexts, *e.g.* ♦ *When counting on a number line, label the same number line in halves on the top and quarters on the bottom and compare.* ♦ *Would you rather have a half of the pizza or two quarters? Why?* ♦ *Would you rather have a half of these sweets or two quarters?*

Y2 Steps 19–21	Measurement	◀Y1 Y3▶

Key Messages

- *In oral work count in numbers relating to scale divisions and provide opportunities for pupils to read and measure with scales with different division.*
- *Provide opportunities for measuring and comparing in data handling / statistics and apply across the curriculum. Measures provide opportunities for many sorting and recording activities such as Venn / Carroll Diagrams.*
- *Talk about amounts over £1 without saying pence at the end, e.g. say 'four pounds fifty' not 'four pounds fifty pence'.*
- *Use measurement language: benchmarks, further, furthest, longer, shorter, taller, smaller, wider, narrower, higher, lower, about the same capacity, fortnight, digital, analogue.*

Y2 Steps 19–21	Measurement Y2
Statement	**Descriptors**
Choose and use appropriate standard units to estimate and measure to the nearest appropriate unit, using:	
using rulers for length/height in any direction (m/cm);	• Establish benchmarks for lengths, heights and widths, *e.g. a door is just about 2 m high; a piece of A4 paper is 30 cm long; my finger is 1 cm wide.* • Make a sensible estimate of what an object measures using benchmarks, check and discuss how close the estimate was, *e.g. How wide is the classroom to the nearest metre?* • Measure an object using the most appropriate unit, *e.g. metres or centimetres.* • Read a scale to the nearest division, *e.g. Make own tape measure, marked every 10 cm, and use.* • Measure objects / areas (length and width only) and record using standard abbreviations of cm and m. • Know the relationship between 1 cm and 1 m.
using scales for mass (kg/g);	• Establish benchmarks to help with estimation of weights, *e.g. apple about 150 g, bag of sugar 1 kg.* • Make a sensible estimate of what an object weighs, using benchmarks to refine guesses. • Measure an object using the most appropriate unit, *e.g. grams or kilograms.* • Read a scale to the nearest division. • Record using standard abbreviations of g and kg. • Know the relationship between: ◦ 1 g weight and 10 g weight; ◦ 10 g weights and 100 g weight; ◦ 100 g weight and l kg weight.
measuring vessels for capacity (ml/l);	• Establish approximate benchmarks for capacity and volume, *e.g. a teaspoon holds 5 mℓ, a can / bottle of cola holds 330 $m\ell$, so 3 cans is about l* large milk is 2 ℓ. • Make a sensible estimate of how much a vessel will hold, using benchmarks to refine guesses. • Measure an object using the most appropriate unit, *e.g. millilitres or litres*? • Record using standard abbreviations of $m\ell$ and ℓ. • Read a scale to the nearest division, *e.g. on a litre jug marked in* 100 $m\ell$ divisions. • Know the relationship between 100 $m\ell$ and 1 ℓ.
using thermometers for Temperature (°C).	• Establish a benchmark for temperature and use in estimation, *e.g. the classroom is about 20°C.* • Describe and compare air temperatures / liquids, using temperature language such as feels cold, colder, hot, and hotter, freezing, too hot to drink. • Measure the temperature with a thermometer to the nearest degree and record temperature using °C, *e.g. class record temperatures for inside and outside the classroom on a chart and compare.*
Compare and order measures and record the results using >, < and =.	<u>Length and height</u> • Use language of comparison such as longer, shorter, taller, smaller, wider, narrower, higher, lower, about the same, etc., *e.g. James is taller than Mohammed but shorter than Angela. Is this true?* • Find the difference in length between two objects to the nearest centimetre / metre and record and / or explain, *e.g. 'The pencil is just under 2 cm shorter than the straw.'* • Solve practical problems, *e.g. How much longer / shorter than the red ribbon is the blue ribbon?* • Record comparisons with concrete objects or in words with the symbols <, > and =, *e.g. red rod < yellow rod > lime rod.*  <u>Mass</u> • Use language of comparison, *e.g. The jug is heavier than the box but lighter than the tin.* • Find the difference in weight between two objects to the nearest gram / kilogram or scale division and record and / or explain, *e.g. The book is 100 g heavier than the tin.* • Solve practical problems, *e.g. How much lighter than half a kilogram is each of these objects – just a bit lighter, a lot lighter, or about the same?* • Record comparisons with concrete objects or in words with the symbols <, > and =, *e.g. in a cake recipe, flour > sugar = butter.*

Y2 Steps 19–21	Measurement Y2
Statement	**Descriptors**
	Volume and capacity • Use language of comparison, *e.g. empty, full, half empty / full, hold less / more, no space left.* • Find the difference in capacities / volumes between two objects, *e.g. 'The jug holds about 200 ml more than the cup.' 'I can pack 6 more cubes into the yellow box than into the blue one.'* • Solve practical problems, *e.g. Find a bottle that holds enough to fill 7 beakers.* • Record comparisons of capacity or volume with concrete objects or in words with the symbols <, > and =, *e.g. in a cocktail mix, orange juice = lime juice < water.*
Recognise and:	
use symbols for pounds (£) and pence (p);	• Understand and use £ and p symbols when recording money calculations. • Write amounts totalling more than £1 correctly, *e.g. £1·23, not £1·23p.*
combine amounts to make a particular value.	• Make amounts with tens and ones when doing similar place value activities to reinforce the relationships, *e.g. Pay for an object costing 24p with 10p + 10p + 1p +1p + 1p + 1p.* • In work involving giving change routinely select the least combination of coins possible, *e.g. 20p + 2p + 2p to make 24p.* • Develop efficient totalling strategies such as selecting / rearranging the coins in descending order and mentally adding each amount, *e.g. Count out loud, '20 whilst moving a 20p, 22 whilst moving a 2p, 24 whilst moving the final 2p.*
Find different combinations of coins that equal the same amounts of money.	• Know how many of each coin denomination makes another, *e.g. two 10p coins = 20p.* • Find different combinations to make a given amount, checking that no two are the same by ordering each arrangement. • Understand the relationship between coins and notes, *e.g. Exchange 20p, 50p and £1 coins for £5 and £10 notes in different ways.*
Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	⇒ *Solve problems with addition and subtraction. (Number: Addition and Subtraction, Year 2)* Recording will usually be an image of practical results rather than a formal number sentence. • Count forwards and backwards in coin / note amounts. • Add mixed sets of coins totalling less than £1. • Total mixed sets of £1 and £2 coins and £5, £10 and £20 notes. • Subtract a pence amount from a pence amount. (Within context of numbers used in calculation.) • Subtract whole pounds from whole pounds. (Within context of numbers used in calculation.) • Compare amounts, *e.g. How much more has Jane than Bobby?* • Subtract money amounts in the context of change, *e.g. Pay for an item worth 33p with only 20p coins and take change in least coins possible.* • Solve practical problems , *e.g.* ◆ *Which purse would you rather have?* ◆ *From the shop, find different pairs of items you can you afford with 50p, £1, £1·50, etc.* ◆ *Give change (up to £1), perhaps with some rules such as 'There are no 10p coins left in the till.'*
Compare and sequence intervals of time.	• Build up an understanding of how long a minute is, *e.g. Watch the sand in a one minute timer running through whilst counting silently in their head. See if they can guess a minute when the timer is hidden.* • Sequence and talk about sets of pictures / labels / pictures of clocks that show passage of time. • Understand the most appropriate measure of time when comparing different events, *e.g. Say what might be measured in seconds, minutes, hours, days, weeks, months, years.* • Work out a simple time interval, *e.g. Say how long play time lasts, by counting in 5 minute steps.* • Understand how a calendar is organised. • Use a calendar to work out how many days between two or more events / dates in the same month.
Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.	Always use geared clocks when working with analogue times and moving hands. • Recall clock times for o'clock and half past and relate to fractions. • Tell / show the time on an analogue clock relating movement to amounts of turn for: ○ quarter past; ○ quarter to. • Know that between each number from 1 to 12 on the clock there is a 5-minute time interval and count clockwise and anti-clockwise in 5s. • Know that 'past' times are counted clockwise from 12 until the 5 is reached. • Know that 'to' times are counted anti-clockwise from 12 until the 7 is reached. • Read and show on a real clock face, watch or clock diagram any time at a 5-minute interval. • Write times shown on a clock face in words. • Draw times on a clock face given in words.
Know the number of minutes in an hour and number of hours in a day.	• Know there are 60 minutes in an hour, 30 minutes in half an hour, 15 minutes in quarter of an hour. • Know there are 24 hours in one day. • Know that the hour hand on an analogue clock completes two full turns in a day.

Y2 Steps 19–21	Geometry Properties of Shapes	◀Y1 Y3▶

Key Messages

- *Give children experience of regular and irregular shapes, of different size and in different orientations, so they can see what is the same and what is different.*
- *Give children opportunities to create 3-D models using construction kits, to explore and discuss their properties and to create 2-D shapes.*
- *Model the use of mathematical language, display shape vocabulary and encourage children to use it accurately.*
- *Discuss the properties of the same shape when it is placed in different orientations, enlarged or reduced.*
- *Use shape and space language: regular, irregular, pentagons, hexagons, octagons, circular, triangular, rectangular, line of symmetry, fold, mirror line, reflection.*

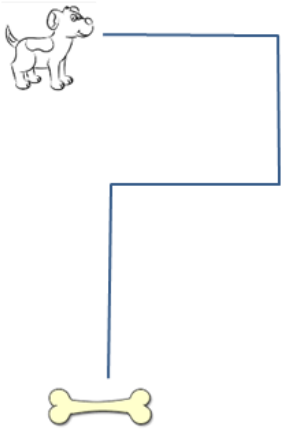
Y2 Steps 19–21	Properties of Shapes Y2
Statement	**Descriptors**
Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.	2-D Shapes: including regular and irregular pentagons, hexagons and octagons. • Name flat shapes by counting the sides. • Recognise shapes in the environment in different orientations and positions. • Select shapes matched to whether they have / have not got given properties, *e.g. will fit together without leaving spaces (tessellate).* • Describe shapes by their properties, *e.g. has a line of symmetry or will fit together without leaving spaces.* • Visualise shapes, extending the complexity of language and instructions from Year 1, *e.g. I am thinking of a shape that has 4 corners, 2 long sides and 2 short sides. Draw the shape on your whiteboard.* • Solve shape problems, *e.g.* ◆ *How many rectangles can be seen in a diagram?* ◆ *Here are five triangles the same size. Use some or all of the triangles to make a bigger triangle. Is there another way to do it?* ◆ *Identify shapes that have a right angle,* e.g. make as many different pentagons as you can on geoboards and sort them for right angles. Vertical Line Symmetry • Understand that objects and shapes can be reflected, *e.g. Talk about reflections of objects in water.* • Know that the line of symmetry is the imaginary line where you could fold a shape and both halves match exactly. • Make and describe simple symmetrical patterns, *e.g. ink blots or pegboards.* • Identify shapes with a line of symmetry, *e.g. Fold a shape in half and view it in a mirror.* • Draw a line of symmetry on a shape or picture, with some degree of accuracy, using a ruler. • Sort objects into has / has not got a line of symmetry. • Complete a picture or pattern to make it symmetrical along a vertical line and check. • Solve symmetry problems, *e.g. 'How many ways can you make a symmetrically coloured pattern with all these squares in one line?'*
Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.	• Recognise 3-D shapes in the environment and in pictures in different orientations and positions, *e.g. Name some of the shapes used in making a 3-D model.* • Describe shapes by their properties, *e.g. will roll or has a face with a right angle.* • Visualise a shape from a description, *e.g. I am looking at a shape that has 6 faces. One of its faces is a pentagon. Can you get it out of the box?* • Count, faces, corners (vertices) and edges, *e.g. on a model made with 4 interlocking cubes.*
Identify 2-D shapes on the surface of 3-D shapes [e.g. a circle on a cylinder and a triangle on a pyramid].	• Name 2-D shapes on the faces of 3-D shapes. Difficult to do this for some, *e.g. a cone.* • Match a set of 3-D shapes to 2-D shapes, *e.g. Put a cube, cuboid, square pyramid on a square mat and say why they have not put the triangular prism there.* • Make a 3-D model with Clixi or Polydron, *e.g. has a hexagonal face.*
Compare and sort common 2-D and 3-D shapes and everyday objects.	• Sort and classify shapes by properties, *e.g.* ◆ *Sort shapes into sets that have / have not got square faces.* ◆ *Sort shapes into sets that have / have not got a line of symmetry.* ◆ *Ask questions 'how do you know this shape is a square?'* • Compare 2 shapes and say how they are the same / different, *e.g. a cereal box and a die (dice) or a triangle and a square.*

Y2 Steps 19–21	Geometry Position and Direction	◀Y1 Y4▶

Key Messages

- *There are no Position and Direction objectives in Year 3. However, there is a continuation in Year 3 Geometry: Shape and Space; 'Identify right angles . . .*
- *Use geared clocks to reinforce the concept of clockwise.*
- *Right angles need to be associated with turns right from the start, as opposed to just as an image of two lines.*
- *There is no reference to compass points (N, S, E, W) in the objectives but there could be opportunities for pupils to develop an understanding during some of the following activities.*
- *Use position and direction language: above, below, near, far, higher, lower, next, between, middle, horizontal, vertical, clockwise, anti-clockwise, turn, route, higher, lower, clockwise, anti-clockwise, quarter turn, right angle, straight line.*

Y2 Steps 19–21	Position and Direction Y2
Statement	**Descriptors**
Order and arrange combinations of mathematical objects in patterns and sequences.	Use shapes, coins, etc., that will give additional opportunities for discussion / problem solving. • Explain a given pattern / sequence. • Continue a given pattern / sequence. • Find the missing object in a given pattern / sequence. • Predict an object further along the sequence. • Make own pattern / sequence and explain it. • Display practical sequences in different directions, *e.g. horizontal, vertical or circular.*
Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).	• Understand and use positional vocabulary, extending the work from Year 1. • Use and understand 'straight' in the context of lines on shapes and in the context of movement in a straight line when walking, running, etc. • Associate turning a quarter of a turn with turning a right angled (square) corner, *e.g.* ♦ *In PE, follow instructions to move,* such as making a one-quarter turn clockwise. ♦ *In the playground mark out a big square. Establish that it is a square by talking about its properties. Follow instructions to walk round it, using language such as turning (clockwise / anti-clockwise) in quarter turns, walking in straight lines.* • Respond to instructions to make two quarter turns and know this is half a turn, first with objects, such as geostrips, then with themselves. • Recognise that, when turning through a half-turn, you end up facing in the opposite direction. • Make quarter and three-quarter turns from the same starting point, associating these with the right angles on a square shape. • Recognise that, when moving a quarter turn clockwise and moving a three-quarter turn anti-clockwise from the same starting point (and vice versa), an object / person is in the same position and facing the same way. • Follow a series of instructions to move on a path from A to B using single and multiple right angled fractions of turn and straight lines. • Give instructions for a friend to walk a shape, *e.g. a bigger square, a rectangle*. • Solve movement problems, *e.g. 'Guide the dog to the bone. Can you give 2 different sets of instructions to do this?'* ⇒ *Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. (Geometry: Properties of Shape, Year 3)*



Y2 Steps 19–21	Statistics	
Key Messages • *Tally charts are only used when asking one person at a time for information. When the whole class is asked at the same time it is more efficient to record as a number.* • *Recognise the importance of including titles and labels when organising data into lists and tables and the need for a key when creating pictograms.* • *Sort objects into categories, display them in different ways and make statements about data displays.* • *Draw on opportunities from other curricular areas and real-life opportunities to give children meaningful experiences of handling data.* • *Use statistics language: count, sort, group, set, list, same, different, table, tally, vote, represent, graph, block graph, pictogram, label, title, key, most popular, most common, least popular and least common.*		Y3▶

Y2 Steps 19–21	Statistics Y2
Statement	**Descriptors**
Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	General • Take part in a class data collection; *e.g. Record the weather for a week / month on a class chart.* • Work through the data-handling cycle: pose a question and answer it by collecting data, organising, representing and interpreting it. • Know that the same information can be presented in different types of charts and diagrams and say why they prefer one to another, *e.g. weather symbols on a calendar, in a list, on a pictogram.* • Know that titles, labels, scales and keys are important elements of all types of charts and use them to identify the information required. • Interpret vertical and horizontal pictograms and block graphs. Pictograms • Make pictograms with real objects. • Represent objects in pictograms with drawings of objects exactly the same size so that the heights / lengths of the pictogram bars can be compared. (This might not have a numbered axis in early work.) • Know that adding a column for totals helps to answer questions about the pictogram. Tally Charts • Know that a tally chart is used only when one person needs to be asked at a time in the collection of data. • Organise the tally chart neatly with counts in 5s (four vertical lines joined by a diagonal to make 5).  Block Diagrams • Make a 3-D block graph with cubes to represent each item; *e.g. Children put a brick on the drink they prefer from orange juice, water, milk or cola.* • Make links between pictograms and block diagrams: how they are the same; how they are different. • Represent items by shading the correct length of bar for the count, at first using a unitary y-axis scale against which to match. • Make and compare block graphs, using ICT, and answer questions. (Could be a class activity.) • Use many-to-one correspondence (scaling) with simple ratios on axes such as 2, 5, and 10 and correctly answer questions based on these. Tables and Lists • Organise information in a list or table; *e.g. Make a list of all the odd numbers between 15 and 35.*
Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.	• Answer counting questions by reading and interpreting a numbered axis. • Ask questions about data; *e.g. ask a question for a friend to answer about a 'chart'.* • Rearrange categories by sorting lists in order; *e.g. in a descending table by quantity.* Venn and Carroll diagrams are not specific to the statutory requirement but can be used to present data in a measurement or numbers context, *e.g.* ◆ Interpret a Venn diagram; *e.g. 'How many pupils have blue eyes and are more than 1 m tall?'* ◆ Know the meaning of 'not' in a data context; *e.g. shapes that are not red.* ◆ Interpret a Carroll Diagram; *e.g. How many of these shapes are circles but are not red?*
Ask and answer questions about totalling and comparing categorical data.	• Answer questions from a range of chart presentations, including: ◦ tables; ◦ pictograms; ◦ block graphs. • Answer questions about data totalling; *e.g. On how many days was there some sunshine?* • Answer questions about data comparison; *e.g. How many more people prefer chocolate to strawberry?* • Make statements about data; *e.g. Most of our class had pizza today. Nobody had stew.*

Year 3: Steps 22-24

Y3/4	Steps 26–27	Reading Word Reading	◀Y2
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*			Y5/6▶

Y3/4	Steps 26–27	Reading Word Reading Y3/4	◀Y2
Statement		**Descriptors**	
Apply their growing knowledge of root words, prefixes and suffixes (etymology and morphology) as listed in English Appendix 1, both to read aloud and to understand the meaning of new words they meet.		See English Appendix 2 (Y3): Vocabulary, grammar and punctuation. See English Appendix 1 (Y3/Y4): Spelling. Content within this area of learning may be determined by schools' progression mapping. • Identify a range of prefixes in text to explore how these change the meanings of nouns, *e.g. super, anti, auto.* • Explore and generate word families from text to show how words are related in form and meaning, *e.g. solution / solve, dissolve / insoluble.* ⇒ *Use further prefixes and suffixes and understand how to add them. (Spelling, Year 3/4)* ⇒ *Formation of nouns using a range of prefixes, such as super–, anti–, auto– . (VG&P, Year 3)*	
Read further exception words, noting the unusual correspondences between spelling and sound, and where these occur in the word.		See English Appendix 1 (Y3/Y4): Spelling. • Read words from the Word list - Years 3 and 4.	

Y3/4	Steps 22 – 27	Reading Comprehension	◀Y2
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*			Y5/6▶

Y3/4	Steps 22–27	Comprehension Y3/4
Statement	**Descriptors**	
Develop positive attitudes to reading and understanding of what they read by:		
listening to and discussing a wide range of fiction, poetry, plays, non-fiction and reference books or textbooks;	• Discuss personal point of view and justify opinions. • Make book recommendations giving reasons for choices. • Talk about favourite events, characters, and theme in fiction. • Listen to and discuss plays. • Listen to and discuss poetry. • Discuss the different structures of some non-fiction textbooks. • Discuss and compare facts, in non-fiction and reference texts, related to ongoing learning in the classroom. • Read extensively favourite authors or genres and experiment with other types of text. ⇒ *Plan their writing by discussing writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar. (Composition, Year 3/4)*	
reading books that are structured in different ways and reading for a range of purposes;	• Discuss and read a range of genres with increasingly different structures and a more diverse range of purposes through: ◦ narrative, *e.g. stories with historical settings, stories set in imaginary worlds, stories from other cultures;* ◦ stories which raise issues / dilemmas; ◦ play scripts; ◦ poetry; ◦ instructional texts; ◦ explanation texts; ◦ non-chronological reports; ◦ recounts, *e.g. newspapers, magazines;* ◦ persuasive texts. • Self-select books for a specific purpose.	
using dictionaries to check the meaning of words that they have read;	• Use the first two / three letters of a word to locate words in a dictionary. • Use the quartiles of a dictionary to more efficiently locate a word. • Use the words typed at the top of the dictionary page to efficiently locate the target word. ⇒ *Use the first two or three letters of a word to check its spelling in a dictionary. (Spelling, Year 3/4)*	
increasing their familiarity with a wide range of books, including fairy stories, myths and legends, and re-telling some of these orally;	• Listen to, read and discuss an increasingly wide range of books. • Make more precise vocabulary choices, and use descriptive words and phrases, *e.g. when discussing story language.* • Compare and discuss story themes, settings (time and place), characters and plots linking directly to texts. • Tell and re-tell stories. • Self-select books according to personal interest, preference and recommendations, giving reasons for their selection.	
identifying themes and conventions in a wide range of books;	• Identify and discuss themes and conventions in what they read, *e.g.* ◆ *good over evil;* ◆ *wise and foolish;* ◆ *weak over strong;* ◆ *the use of magical devices in fairy stories and folk tales;* ◆ *villains and heroes;* ◆ *friendship;* ◆ *bullying.*	

Y3/4	Steps 22–27	Comprehension Y3/4
Statement	**Descriptors**	

preparing poems and play scripts to read aloud and to perform, showing understanding through intonation, tone, volume and action;	• Prepare and perform poems.
	• Prepare and perform play scripts.
	• Show an understanding of poems and play scripts by:
	  ◦ using appropriate intonation, tone, volume or actions when performing;
	  ◦ identifying appropriate intonation, tone, volume or actions in other's performance and offering constructive comments.	

discussing words and phrases that capture the reader's interest and imagination;	• Explore how authors use words and phrases to create impact and to engender a love of language, *e.g.*
	  ♦ *varied sentence structure, such as fronted adverbials '(Like a flash, he was out of the classroom and away.');*
	  ♦ *adverb starters,* such as 'Unfortunately, the train had already left.';
	  ♦ *adjectives and expressive verbs;*
	  ♦ *alliteration;*
	  ♦ *simile and metaphor;*
	  ♦ *idioms;*
	  ♦ *word play.*	

recognising some different forms of poetry (for example, free verse, narrative poetry).	• Listen to, read and discuss different forms of poetry. • Identify and compare features of different poetic forms.	
Understand what they read, in books they can read independently, by:		
checking that the text makes sense to them, discussing their understanding and explaining meaning of words in context;	• Use prior knowledge to link topic or events from the book to their own experience or previous reading. • Use the grammar and context to read the text accurately. • Re-read text, read on and use context and grammar to explain the meaning of unknown words. • Use knowledge of word structures and origins to develop an understanding of word meanings. • Independently choose when to use a dictionary. • Explain the meaning of the text in own words.	
asking questions to improve their understanding of a text;	• Ask questions to clarify meaning of words, character's intent, events, plot, setting, and text structure, etc. • Generate questions about the text, such as 'What questions would you like to ask the characters?' *This could be through drama and role play, such as hot seating, freeze framing, thought taping, ask the expert.*	
drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence;	• Empathise with characters, *e.g. through use of a visualisation technique such as freeze framing to infer the nature of relationships and emotional responses through capturing and interpreting facial expressions and body language.* • Use prior knowledge and clues from the text to infer why a character behaved / reacted in a specific way, *e.g. Understand how previous events in a text would have left a character feeling and how that might affect their reactions.* • Use text evidence to infer how a character may be feeling or what they could be thinking at specific moments in the narrative, *e.g. 'Why was a character behaving in a specific way? What clues are there to suggest this in the text?'* • Answer inferential questions by stating a point, backing it up with evidence from the text and explain thinking, *e.g. 'Why did Little Red Riding Hood set off straight away to her Grandmother's?'*	
predicting what might happen from details stated and implied;	• Make regular predictions about characters, events and actions as text is read justifying reasons with reference to the text. • Make and justify literal predictions across a text, *e.g. 'When Red Riding Hood says, "What BIG teeth you have, Granny," I predict . . .'* • Make and justify predictions from what is implied, *e.g.* ♦ *I predict that the bullies will not leave Tom alone and will return to demand more money because it says in the text, "With a smile which didn't reach her eyes, Sonia hissed, 'See you soon Tommy . . . '"*	

Y3/4	Steps 22–27	Comprehension Y3/4
Statement	**Descriptors**	

identifying main ideas drawn from more than one paragraph and summarising these.	• Use an opening sentence of a paragraph to explain what it is about.
	• Read a text closely, *e.g. Highlight key words or phrases, main points or important information.*
	• Use information to summarise key themes of a paragraph in their own words, including:
	  ◦ re-telling main points of a story in sequence;
	  ◦ identifying key facts of a non-fiction text;
	  ◦ reading a short paragraph (non-fiction) and composing an appropriate sub-heading.
	• Discuss, identify and summarise main ideas about how characters feelings, behaviour and relationships change across a text.
	⇒ *Introduction to paragraphs as a way to group related material. (VG&P, Years 3)*	

identifying how language, structure, and presentation contribute to meaning.	• Identify how language contributes to meaning, *e.g. Identify how words and phrases are used to build suspense, atmosphere, setting and character profile.*
	• Identify some of the differences between language used in:
	  ◦ fiction and non-fiction texts;
	  ◦ formal and informal texts.
	• Identify how structure and presentation contributes to meaning by exploring and learning the conventions of different text types, *e.g.*
	  ♦ *greetings in letters;*
	  ♦ *a diary written in the first person.*
	• Identify how figurative and expressive language is used to create images and atmosphere, including:
	  ◦ simile;
	  ◦ metaphor;
	  ◦ personification;
	  ◦ repetition for emphasis;
	  ◦ alliteration.
	• Identify and understand how some presentational devices contribute to meaning, including:
	  ◦ indexes;
	  ◦ glossaries;
	  ◦ contents page;
	  ◦ headings and sub-headings;
	  ◦ tables and charts;
	  ◦ maps, diagrams and labels.	

Retrieve and record information from non-fiction.	• Locate information in non-fiction texts using a range of features including:
	  ◦ indexes;
	  ◦ glossaries;
	  ◦ contents page;
	  ◦ headings and sub-headings;
	  ◦ tables and charts.;
	  ◦ maps, diagrams and labels.
	• Skim and scan to locate key information, incorporating techniques such as highlighting and annotating.
	• Record and retrieve information gathered in various non-fiction formats, *e.g.*
	  ♦ *flow charts;*
	  ♦ *labelled diagrams;*
	  ♦ *tables and charts.*	

Participate in discussion about both books that are read to them and those they can read for themselves, taking turns and listening to what others say.	• Express ideas and viewpoints across a range of genres, and with support, justify ideas, *e.g. Identify specific words or phrases to support a viewpoint.*
	• Ask and respond to questions using evidence from the text.
	• Actively listen to others by:
	  ◦ maintaining eye contact with audience;
	  ◦ demonstrating they are listening through body language;
	  ◦ adapting and changing viewpoints in response to others.	

Y3/4:	Steps 22–24	Writing Spelling	◀Y2
Key Messages • *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Pupils should proof-read their own and other's writing to improve the accuracy and consistency of spelling, knowing strategies for how to make changes, e.g. clapping syllables, identifying tricky part of word, choosing memory strategy to overcome errors: identifying root word, rules, syllables and phonemes.*			Y5/6▶ 

Y3/4	Steps 22–24	Spelling Y3/4	◀Y2
Statement		**Descriptors**	
Use further prefixes and suffixes and understand how to add them.		See English Appendix 1 (Y3/Y4) • Identify words with prefixes, understanding how the prefix changes the meaning of the word. • Identify root words and match to appropriate prefix, explaining how the prefix changes the meaning of the word. • Identify words with suffixes, understanding how the suffix changes the meaning of the word. • Identify root words and match to appropriate suffix, explaining how the suffix adds meaning to the word. • Use prefixes and suffixes appropriately in independent writing. ⇒ *Apply their growing knowledge of root words, prefixes and suffixes . . . to understand the meaning of new words they meet. (Word Reading, Year3/4)*	
Spell further homophones.		• Identify homophones and near-homophones. • Match the homophone / near-homophone to its meaning, *e.g. play homophone snap.* • Use words accurately in independent writing demonstrating an understanding of meaning.	
Spell words that are often misspelt.		• Identify possible spelling errors in own writing and use strategies to correct, *e.g. by:* ◆ *clapping syllables;* ◆ *highlighting the tricky part of the word;* ◆ *choosing a memory strategy to overcome errors;* ◆ *identifying the root word,* ◆ *rules, such as 'i before e except after c';* ◆ *counting syllables;* ◆ *checking phonemes;* ◆ *using 'look, say, cover, write, check' method to remember how to spell words.* • Use words identified, spelling them accurately in independent writing.	
Place the possessive apostrophe accurately in words with regular plurals [for example, girls', boys'] and in words with irregular plurals [for example, children's].		• Identify the placement of the possessive apostrophe, understanding how the apostrophe affects the meaning of the phrase / text. • Place the possessive apostrophe accurately in words with regular plurals, in independent writing. • Place the possessive apostrophe accurately in words with irregular plurals, in independent writing.	
Use the first two or three letters of a word to check its spelling in a dictionary.		• Use the quartiles of a dictionary to more efficiently locate words. • Use the first two / three letters of a word to check spelling. • Use the words typed at the top of the dictionary page to efficiently locate the target word. ⇒ *Develop positive attitudes to reading and understanding what they read by using dictionaries to check the meaning of words that they have read. (Comprehension, Year 3/4)*	
Write from memory simple sentences, dictated by the teacher, that include words and punctuation taught so far.		• Write from memory simple sentences dictated by the teacher that include words and punctuation taught so far.	

Y3/4	Steps 22–27	Writing Handwriting	◀Y2
Key Messages • Explicit teaching of the skills and processes essential to handwriting must precede, support and inform assessment of the STAT statements.			Y5/6▶

Y3/4	Steps 22–27	Writing Handwriting Y3/4
Statement		**No descriptors required for handwriting**
Use the diagonal and horizontal strokes that are needed to join letters and understand which letters, when adjacent to one another, are best left unjoined.		
Increase the legibility, consistency and quality of their handwriting [for example, by ensuring that the downstrokes of letters are parallel and equidistant; that lines of writing are spaced sufficiently so that the ascenders and descenders of letters do not touch].		

Y3/4	Steps 22–27	Writing Composition	◀Y2
			Y5/6▶

Key Messages

- *Use of talk for writing, role play, drama, reading, etc., is essential.*
- *Modelling in shared writing must come prior to independent writing.*
- *Write for a range of real purposes and audiences.*
- *When using this grid for assessment, practitioners should look also for evidence from the SPaG and Reading grids.*
- *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa using age appropriate texts.*
- *Progression across year groups will be determined by complexity and range of text type.*

Y3/4	Steps 22–27	Composition Y3/4
Statement	**Descriptors**	
Plan their writing by:		
discussing writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar;	• Read and discuss exemplar texts similar to that which they are planning to write in order to familiarise themselves with the structure, grammar and vocabulary of that text type. • Identify and discuss features, structure, vocabulary and grammar of the text type similar to that which they are planning to write. • Choose and explain vocabulary choices in the context of the subject / genre, *e.g.* ♦ *formal / informal language choices;* ♦ *hyperbole to persuade.* • Plan their writing to include structure, vocabulary and grammar appropriate to text type. ⇒ *Develop positive attitudes to reading and understanding of what they read by listening to and discussing a wide range of fiction, poetry, plays, non-fiction and reference books or textbooks. (Comprehension, Year 3/4)*	
discussing and recording ideas.	• Use a variety of planning formats to capture ideas, *e.g.* ♦ *story mountain;* ♦ *mind mapping;* ♦ *story boards.*	
Draft and write by:		
composing and rehearsing sentences orally (including dialogue), progressively building a varied and rich vocabulary and an increasing range of sentence structures (English Appendix 2);	See also English Appendix 2. • Compose and rehearse sentences orally. • Re-read, edit and improve throughout the course of writing. • Build a varied and rich vocabulary by using: ◦ words and phrases collected from reading, *such as expressive verbs, alliteration, simile, metaphor, idioms;* ◦ noun phrases expanded by the addition of modifying adjectives, nouns and preposition phrases, *such as 'the teacher' expanded to 'the strict maths teacher with curly hair;'* ◦ conjunctions, *such as when, before, after, while, so, because;* ◦ adverbs, *such as then, next, soon, therefore;* ◦ prepositions, *such as before, after, during, in, because of.* • Use an increasing range of sentence structures in writing, *such as fronted adverbials, e.g. 'Later that day', or 'I heard the bad news.'* ⇒ *Draft and write by organising paragraphs around a theme. (Writing: Composition Year 3/4)* ⇒ *Expressing time, place and cause using, adverbs or prepositions. (VG&P, Year 3)*	
organising paragraphs around a theme.	• Be able to give a sentence which suggests a paragraph's content. • Group linked information into sections, understanding that some sections, particularly long or complex sections, may require more than one paragraph to convey information clearly for the reader, *e.g.* ♦ *settings, characters and plot in narratives;* ♦ *when recording information under headings and sub-headings in non-fiction.* • Signal sequence, place and time to give coherence. • Use adverbs and conjunctions to establish cohesion within paragraphs. ⇒ *Draft and writ by composing and rehearsing sentences orally (including dialogue), progressively building a varied and rich vocabulary and an increasing range of sentence structures (Writing: Composition Years 3/4)* ⇒ *Introduction to paragraphs as a way to group related material. (VG&P, Year 3)*	

Y3/4	Steps 22–27	Composition Y3/4
Statement	**Descriptors**	
in narratives, creating settings, characters and plot.	• Describe settings understanding how small details can be included to evoke time, place and mood, drawing on this to demonstrate how characters behave in different settings. • Use figurative and expressive language to build a fuller picture of a character. • Use dialogue to build character descriptions and evoke a response in the reader, *e.g. sympathy or dislike.* • Plan and write complete stories identifying stages in the telling, including: ◦ introduction; ◦ build up; ◦ climax or conflict; ◦ resolution.	
in non-narrative material, using simple organisational devices [for example, headings and sub-headings].	• Organise information into paragraphs. • Demonstrate an understanding of features of text type and use simple organisational devices, *e.g.* ♦ *headings and sub-headings* ♦ *labelled diagrams and illustrations.* • Record information researched on a topic from a number of different sources and reorganise into coherent paragraphs to create a non-narrative text, *e.g. a comparative report about the features of moths and butterflies.* ⇒ *Headings and sub-headings to aid presentation. (VP&G, Year 3)*	
Evaluate and edit by:		
assessing the effectiveness of their own and others' writing and suggesting improvements.	• Re-read, edit and improve throughout the writing process both independently and with response partners, suggesting / making appropriate improvements as necessary, *e.g.* ♦ *checking for verb tense agreement;* ♦ *checking that direct speech is demarcated by inverted commas;* ♦ *checking that a comma is included after the reporting clause.*	
proposing changes to grammar and vocabulary to improve consistency, including the accurate use of pronouns in sentences.	Identify possible improvements to grammar and vocabulary to maintain / improve consistency: • Use range of appropriate pronouns or nouns to aid cohesion and avoid repetition, *e.g. 'Peter went to the shops. He bought a cream cake. On the way home, the greedy boy ate it.';* • Check that the same tense is used consistently throughout the sentence when discussing things that happen at the same time and identify possible errors, suggest / make appropriate improvements as necessary, *e.g. 'When I went to the cafe, I bought two cookies.';* • Use appropriate choices when referring to separate events where tenses differ, *e.g. 'I cycled to school last Monday, but today I am taking the bus.'*	
Proof-read for spelling and punctuation errors.	See also English Appendix 1 and 2 (Y3/Y4). • Identify possible spelling errors and know strategies for how and when to make changes. • Identify examples of direct speech in writing and check for use of inverted commas to punctuate the direct speech and that a comma is included after the reporting clause. • Identify accurate use of and possible errors / omissions in the following, suggesting and making corrections as necessary: ◦ capital letters; ◦ full stops, question marks and exclamation marks to demarcate sentences; ◦ commas to separate items in a list; ◦ apostrophes of omission; ◦ apostrophes to mark singular possession in nouns, *e.g. the girl's name;* ◦ inverted commas and other punctuation to indicate direct speech, *e.g. inclusion of a comma after the reporting clause such as 'the terrified passenger shouted, "fire!";* ◦ apostrophes marking plural possession, *e.g. the girls' names;* ◦ commas after fronted adverbials, *e.g. 'Later that day', 'I heard the bad news.'* ⇒ *Introduction to inverted commas to punctuate direct speech. (VG&P, Year 3)*	
Read aloud their own writing, to a group or the whole class, using appropriate intonation and controlling the tone and volume so that the meaning is clear.	• When reading aloud, respond appropriately to an increasing range of punctuation cues. • Demonstrate an increasing confidence and control when reading aloud to a range of audiences by varying intonation, tone and volume to ensure that meaning is clear.	

Y3 Steps 22–24	Writing Vocabulary, Grammar and Punctuation	◀Y2 Y4▶
Key Messages • *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Pupils should proof-read their own and other's writing to improve the accuracy and consistency of the content, with particular reference to the element of vocabulary choice, grammar or punctuation being studied.* • *Develop their understanding of the concepts set out in English Appendix 2 (Year 3).*		

Y3 Steps 22–24	Vocabulary, Grammar and Punctuation Y3
Statement	**Descriptors**
Word content to be introduced (statutory requirement):	
Formation of nouns using a range of prefixes, such as super–, anti–, auto– .	See also English Appendix 1 (Y3/Y4). • Identify a range of words with prefixes in text and explain how the prefix changes the meaning of the root word. ⇒ *Apply their growing knowledge of root words, prefixes and suffixes . . . to understand the meaning of new words they meet. (Word Reading, Year3/4)*
Use of the forms 'a' or 'an' according to whether the next word begins with a consonant or a vowel (e.g. a rock, an open box).	When using the forms ***a*** or ***an***: • Demonstrate an understanding of how words which begin with a vowel sound will be preceded by ***an***. • Identify the use of ***a*** and ***an*** in text, noting these and the following word as they occur naturally.
Word families based on common words, showing how words are related in form and meaning (e.g. solve, solution, solver, dissolve, insoluble).	• Identify and generate word families, from text, to show how words are related in form and meaning, *e.g. solution / solve, dissolve / insoluble.*
Sentence content to be introduced (statutory requirement):	
Expressing time, place and cause using conjunctions (e.g. when, before, after, while, so, because), adverbs (e.g. then, next, soon, therefore), or prepositions (eg, before, after, during, in, because of).	• Identify, across a range of texts, how conjunctions are used to enhance coherence and cohesion. • Use a variety of conjunctions appropriately, in writing, to express time, place and cause, *e.g. Jack tiptoed into the room and stole the magic harp while the giant slept. The harp began to sing loudly because she wanted to wake the sleeping giant.* • Use a variety of adverbs appropriately, in writing. • Use a variety of prepositions appropriately, in writing. ⇒ *Draft and write by . . . progressively building a varied and rich vocabulary and an increasing range of sentence structures. (Composition, Year 3/4)*
Punctuation content to be introduced (statutory requirement):	
Introduction to inverted commas to punctuate direct speech.	• Identify examples of inverted commas in text and discuss the purpose. • Use inverted commas to indicate direct speech in own writing. ⇒ *Proof-read for spelling and punctuation errors. (Composition, Year 3/4)*
Text content to be introduced (statutory requirement):	
Introduction to paragraphs as a way to group related material.	• Identify paragraphs in a range of texts and discuss how they are used to group related materials. • Identify key words, main points or important information within the paragraph. • Use information to summarise key themes / points of a paragraph in their own words. • Group linked information into paragraphs in own writing, *e.g.* ♦ *settings, characters and plot in narratives;* ♦ *when recording information under headings and sub-headings in non-fiction.* ⇒ *Draft and write by organising paragraphs around a theme. (Composition, Year 3/4)* ⇒ *Understand what they read, in books they can read independently, by identifying main ideas drawn from more than one paragraph and summarising these. (Comprehension, Years 3/4)*

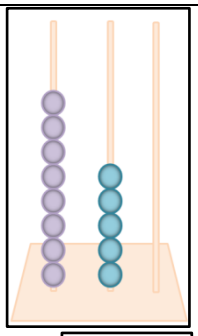
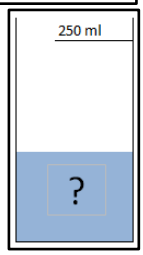
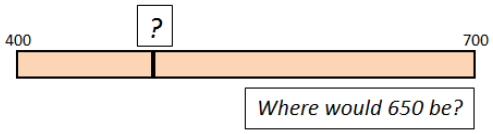
Y3 Steps 22–24	Vocabulary, Grammar and Punctuation Y3
Statement	**Descriptors**
Headings and sub-headings to aid presentation.	• Identify through reading how headings and sub-headings aid meaning and presentation, *e.g.* ♦ *match short pieces of text to their headings / sub-headings;* ♦ *write headings / sub-headings for a piece of text.* • Organise information into paragraphs. • Demonstrate in writing an understanding of features of text type and use simple organisational devices, *e.g. headings and sub-headings.* ⇒ *Draft and write by in non-narrative material, using simple organisational devices [for example, headings and sub-headings]. (Composition, Year 3/4)*
Use the present perfect form of verbs instead of the simple past (e.g. He has gone out to play contrasted with He went out to play).	• Identify the present perfect form of verbs when reading text and explore ways of creating contrasts, orally and through writing, *e.g. 'He has gone out to play.' contrasted with 'He went out to play.'*
Terminology for pupils content to be introduced (statutory requirement):	
Use and understand the grammatical terminology in English Appendix 2 (Year 3) accurately and appropriately when discussing their writing and reading: *preposition, conjunction;* *word family, prefix;* *clause, subordinate clause;* *direct speech;* *consonant, consonant letter* *vowel, vowel letter;* *inverted commas (or 'speech marks').*	• Use accurate grammatical terminology when analysing text and explain the impact created. • Use accurate terminology when discussing how grammar has been used to create effect within writing.

Y3 Steps 22–24	Number Number and Place Value	◀Y2 Y4▶

Key Messages

- *Counting is a key activity and partially marked or blank number lines and number hoops should be used in oral work.*
- *Count in measures and decimals as well as in integers.*
- *Pupils need to visualise problems and manipulate them with equipment. These activities provide models and images for later mental calculations.*
- *Give pupils opportunities to explain their reasoning.*
- *Wherever possible calculation should be taught in the context of real life problems.*
- *An understanding of pattern in number should be developed so that relationships can be seen between facts they already know and new ones.*
- *Vocabulary: one hundred more / less, approximate, approximately, estimate, roughly.*

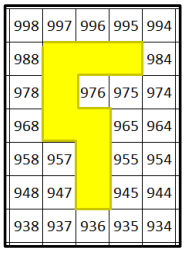
Y3 Steps 22–24	Number and Place Value Y3
Statement	**Descriptors**
Count from 0 in multiples of 4, 8, 50 and 100;	Count in multiples of 4 • Count forwards in multiples of 4 from 0. • Count backwards in multiples of 4 from any multiple up to 12×. • Recognise digit patterns. Count in multiples of 8 • Count forwards in multiples of 8 from 0. • Count backwards in multiples of 8 from any multiple up to 12×. • Recognise digit patterns. Count in multiples of 50 • Count forwards in multiples of 50 from 0. • Count backwards in multiples of 50 from any multiple up to 12×. • Recognise digit patterns. • Count in measures and money contexts. Count in multiples of 100 • Count forwards in multiples of 50 from 0. • Count backwards in multiples of 50 from any multiple up to 12×. • Recognise digit patterns. • Count in measures contexts.
find 10 or 100 more or less than a given number.	• Count forwards and backwards in steps of tenths ⇒ *Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts; and from dividing one digit numbers or quantities by 10. (Number: Fractions, Year 3)* • Record the number that is 10 more or 10 less than any number. • Explain the effect on the digits when counting in 10s and the impact of crossing boundaries when moving between 10s and 100s. • Record the number that is 100 more or 100 less than any number. • Explain the effect on the digits when counting in 100s and the impact of crossing boundaries when moving between 100s and 1,000s. ⇒ *Recall and use multiplication and division facts for the3x table; 4x table; and 8x table. (Number: Multiplication and Division, Year 3)*
Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).	• Know the value of any digit in a three-digit number, including 0 as a place holder, *e.g. Know that 500, has a zero in the tens and ones columns*. • Know that, in a three-digit number, the hundreds digit is the most significant in determining size, followed by the tens then the ones. • Identify and accurately position three-digit numbers on a number line, with and without interval markings. • Partition three-digit numbers into hundreds, tens and ones in different ways, *e.g. 146 = 100 and 40 and 6, 146 = 130 and 16.* • Explain accurately the effect on the digits when a one-digit or a two-digit number is multiplied by 10, i.e., the digits move one place to the left (not 'adding a 0'), *e.g. 4·6 × 10 = 46.* • Explain accurately the effect on the digits when a two- or three-digit number is divided by 10, i.e., the digits move one place to the right, *e.g. 23 ÷ 10 = 2·3 (= $^{23}/_{10}$).* ⇒ *Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. (Number: Addition and Subtraction, Year 3)*
Compare and order numbers up to 1000.	• Know ordinal numbers in context, *e.g. Describe the position of a team in a league table.* • Describe the positional relationship between two numbers, *e.g. 345 is larger than 300 but smaller than 400.* • Order a selection of numbers / quantities up to 1000 in ascending / descending order. • Compare numbers / quantities, *e.g. 306 is larger than 105 but smaller than 456.* • Use symbols < >, correctly orientated, and = to compare numbers up to 1,000, *e.g. Place a number and a symbol to make this number sentence correct, ▢< 312 ▢321.*

Y3 Steps 22–24	Number and Place Value Y3
Statement	**Descriptors**
Identify, represent and estimate numbers using different representations.	<u>Using Apparatus and Visuals</u> • Interpret information given in visual format, *e.g. on an abacus.* • Draw diagrams to illustrate outcomes / findings, *e.g.* ♦ *Use a number line marked in 100s to say which 100 a three-digit number is nearest to,* e.g. 574 is closer to 600 than 500. (This lays the foundation for rounding in Year 4). ♦ *Use apparatus that helps with visualisation and consolidation of place value, e.g.* base 10 apparatus, loop abacus, arrow cards, and number grids.   • Organise written responses in a systematic way, *e.g. a list, table or organised columns.* <u>Estimation</u> • Estimate a number of objects or pictures of objects using approximation language and count to check and to refine accuracy, *e.g. 'It's between 40 and 50.'* or *'It's about 25.'* . • Estimate and show measures where only one number on the scale is given or where the measure falls between marked divisions, *e.g. 'How much water is in the cylinder?'* • Estimate the possible position of numbers on a blank number line / stick with any designated start and end numbers.  
Read and write numbers up to 1000 in numerals and in words.	Numbers up to 100 should have been thoroughly covered in Year 2. • Read numbers 1 to 1000 in numerals on number lines, etc. • Write a given numbers in numerals, using place keeping zeros accurately, *e.g. 909.* • Read numbers to 1000 in words in context. • Write numbers to 1000 in words, *e.g. Start counting, stop and pupil writes the next number on a whiteboard in words (and numerals).*
Solve number problems and practical problems involving these ideas.	• Count a large collection of objects by grouping them and recognising how this helps to check a result, *e.g. into fives, tens or twenties,* • Continue a sequence, *e.g. 6, 16, 26, ▢, ▢. What would be the 20th term? Can you work it out without finishing the sequence?* • Find missing numbers in a sequence and explain how this was done, *e.g. ▢, ▢, 145, ▢, ▢, 115.* • Use and apply number and place value into word problems and investigations, *e.g.* ♦ *Using 3 digits cards make:* ◊ *the largest number;* ◊ *the smallest number;* ◊ *order;* ◊ *find the number with the largest tens.* ♦ *Which multiples of 10 lie between 256 and 283?* ♦ *Solve missing number equations, such as* 322 = 300 + ▢ + 2; ♦ *place missing numbers on a numbered grid where some of the grid is hidden,* e.g. Use the Monty ITP. (These grids are not necessarily left to right / top to bottom and can show a range of numbers, not just 1 to 100).  ⇒ *Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. (Number: Addition and Subtraction, Year 3)*

Y3 Steps 22–24	Number Addition and Subtraction	◀Y2
Key Messages • *Rehearse addition and subtraction facts regularly through daily oral and mental work.* • *Pupils need to be secure in using counting on and back methods for subtraction and to find differences.* • *Encourage pupils to jot down steps to keep a record to help with a calculation.* • *Pick up on common errors such as subtracting the wrong digit, e.g. 92 – 38 = 66.* • *Give pupils regular opportunities to explain and compare calculation methods.* • *Ensure that pupils understand partitioning, as the basis for the development of written methods.* • *Don't introduce formal written methods until place value and partitioning is thoroughly understood.* • *Use language of addition and subtraction: difference between, tens boundary, hundreds boundary.*		Y4▶

Y3 Steps 22–24	Addition and Subtraction Y3
Statement	**Descriptors**
Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds.	
Add and subtract numbers mentally;	Build Mental Strategies • Use informal jottings to support mental methods. • Recognise the significance of each digit when adding and subtracting, i.e., in mental methods the most significant is often dealt with first. • Adapt own method to become more efficient in response to suggestions or through own devices. • Derive quickly pairs of multiples of 100, *e.g. 300 + 700 = 1000 or 400 + 200 = 600.* • Derive quickly doubles of multiples of 10 up to 100, *e.g. 80 + 80.* • Derive quickly pairs of numbers that total the next 10, *e.g. 87 + ▢ = 90 and 676 + ▢ = 680.* • Derive quickly pairs of numbers that total the next 100, *e.g. 87 + ▢ = 100 and 676 + ▢ = 700.* • Be able to say pairs of numbers that equal 100 where the ones digit is not zero, *e.g. 57 + 43.* • Use known facts to work out related facts, such as: ◆ *Extended number bonds, e.g. 9 – 7 = 2 to so 89 – 7 = 82.* ◆ *Add / subtract 9 to any number by adding / subtracting 10 and adjusting by 1.* ◆ *Add / subtract 11 to any number by adding / subtracting 10 and adjusting by 1.* ◆ *Add near-doubles by doubling and adjusting, e.g. 60 + 62 is double 60 add 2.*
a three-digit number and ones;	• Mentally add and subtract any single-digit number to and from a three-digit number, *e.g. Use known facts or count in head, start with the largest number.*
a three-digit number and tens;	• Mentally add and subtract any multiple of 10 to or from a three-digit number. • Add and subtract near-multiples of a 10 to a three-digit number, *e.g. 47 + 29 (+ 30 – 1).*
a three-digit number and hundreds.	• Mentally add and subtract any multiple of 100 to or from a three-digit number (might cross the 1000 boundary). • Add and subtract near-multiples of a 100 to a three-digit number, *e.g. 632 – 199 (- 200 + 1).*
Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.	See Mathematics programmes of study: key stages 1 and 2: Mathematics Appendix 1 (formal methods). ⇒ *Recognise the place value of each digit in a three-digit number . . .. (Number: number and Place Value, Year 3)* • Decide whether a written method is the best solution by considering the size of numbers and the complexity of calculation, *e.g. on a whiteboard write the following three calculations and discuss:* ◆ *305 – 296: subtract by counting on in the head because the difference is small;* ◆ *124 + 68: use a near multiple of 10, i.e., take 68 to nearest 10 add this, adjust to 124 + 70 - 2;* ◆ *932 – 457: use a formal written method.* • Recognise the relationship between the vertical presentation and the steps on the number line. • Use an expanded layout that underpins the standard written method, recognising that the digits are always worked from smallest to largest. • Estimate first and check answer against estimate, *e.g. 247 + 76 will be between 300 and 350.* • Understand that, in subtraction, numbers need to be partitioned if the lower number is larger than the upper number in the same column, *e.g. 75 – 28: partition 75 into 60 + 15 to subtract 8 from 15.* • Recognise the place value of digits when subtracting, *e.g. in the tens column although we say 9 subtract 3 we really mean 90 subtract 30.* Addition: • Formally add a two- or three-digit number that does not cross a boundary, *e.g. 36 + 153.* • Formally add a two- or three-digit number that crosses one or more boundaries, *e.g. 275 + 638.* Subtraction • Formally subtract a two- or three-digit number that does not cross a boundary, *e.g. 874 - 523.* • Formally subtract a two- or three-digit number that crosses one or more boundaries, *e.g. 932 - 457.* • Know that if more than one number is to be subtracted this must be done in separate steps, *e.g. 568 - 233 - 159 might be calculated as 568 - 233 = 335, then 335 - 159 = 176.*

Y3 Steps 22–24	Addition and Subtraction Y3
Statement	**Descriptors**
Estimate the answer to a calculation and use inverse operations to check answers.	• Use approximation to estimate an answer, *e.g. 149 + 236, is approximate to 150 + 250 = 400 so the answer should be somewhere in the high 300s.* • Begin to check addition and subtraction with a calculation that uses the inverse operation. • Routinely use inverse operations to check answers, especially if formal methods of subtraction are now being used. Checking a formal method of addition might be with an informal method of subtraction until formal subtraction methods are embedded.
Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	Problems are much more than word problems. Investigations should form a large part of this to encourage mathematical reasoning. • Contribute to class discussions about possible methods for solving particular problems. • Use notes and diagrams, including number lines, to help solve problems and explain methods. • Organise written responses to problems and puzzles in a systematic way, *e.g. in a list or table.* • Solve place value problems, *e.g.* ♦ *Using the digit cards 7, 4 and 9 make the largest number / the smallest number / all possible numbers and order them;* ♦ *'Which numbers are hidden on the number square grid?* ⇒ *Solve number problems and practical problems involving these ideas. (Number: Number and Place Value, Year 3)* • Solve problems for quantities, amounts and measures, *e.g.* ♦ *If you add two 20 g weights to 135 g, what will the total weight be?* ♦ *Two people share 38 sweets. One person gets 10 more than the other. How many sweets do they each get?* ♦ *Find the difference between 326 $m\ell$ and 370 $m\ell$;* ♦ *Asif wants to buy a comic that costs £1·50. He saves 36p one week and 45p the next. How much more money does he need to buy the comic?* • Find all possibilities problems, *e.g.* ♦ *I have one of each coin in my pocket from 1p to £2. If I pulled out any three coins what might they be worth? Have you found all the possible answers?* ♦ *Which weights could you combine to total 50 g?* • Use and apply addition and subtraction, including inverse operations, *e.g.* ♦ *I know that 4 + 7 = 11, what else do I know?* ♦ *Put + or – in the circles to make the answer correct;* ♦ *Solve 'Think of a number' problems;* ♦ *Find a mystery number,* e.g. which pair of numbers total 30 and have a difference of 12. • Solve missing number problems, *e.g.* ♦ *Find missing items in an addition or subtraction sequence.* ♦ *Altogether there were 156 marbles of which Martin owned 67. How many does Marie have?*

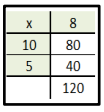


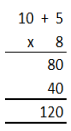
Y3 Steps 22–24	Number Multiplication and Division	◀Y2 Y4▶

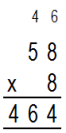
Key Messages

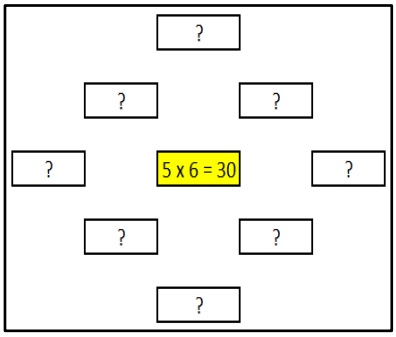
- *Understanding must precede formal written methods of recording. In Year 3 pupils only need to be progressing towards formal written methods. Don't rush it.*
- *Set calculations in the context of real-life / word problems wherever possible.*
- *Use a range of vocabulary associated with multiplication and division, including multiple and product.*
- *Associate division with finding a fraction.*
- *Multiplication facts should be rehearsed regularly in mental and oral work.*
- *Give pupils lots of opportunities to explain what they need to do to solve a problem and how they have achieved it.*
- *Use language of multiplication and multiplication, product, multiple.*

Y3 Steps 22–24	Multiplication and Division Y3
Statement	**Descriptors**
Recall and use multiplication and division facts for the:	
3× table;	• Recite the times table fluently forwards and backwards. • Write the times tables in ascending and descending order. • Know by heart the multiplication and division facts. • Use the 3× table facts confidently in calculations.
4× table	• Recite the times table fluently forwards and backwards. • Write the times tables in ascending and descending order. • Know by heart the multiplication and division facts. • Use the 4× table facts confidently in calculations. • Recognise the relationship between the 2× and 4× tables and use doubling and halving strategies to derive answers.
8× table.	• Recite the times table fluently forwards and backwards. • Write the times tables in ascending and descending order. • Know by heart the multiplication and division facts. • Use the 8× table facts confidently in calculations. • Recognise the relationship between the 2×, 4× and 8× tables and use doubling and halving strategies to derive answers. ⇒ *Count from 0 in multiples of 4, 8, 50 and 100. (Number: Number and Place Value, Year 3)*
Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.	Calculate Mathematical Statements For Multiplication And Division Using The Multiplication Tables • Know × and ÷ facts in any order for the 2, 5, 10, 3, 4 and 8× tables, *e.g. a speed test of random facts.* • Derive related facts from known times tables facts, *such as:* ♦ *inverse operations and number trios, e.g. 8 × 9 = 72, 9 × 8 = 72, 72 ÷ 9 = 8, 72 ÷ 8 = 9;* ♦ *extended table facts, e.g. 30 × 2 = 60, 60 ÷ 3 = 20, etc;* ♦ *doubling and halving related facts to the 2×, 4× and 8× tables, e.g. 75 × 2, 88 ÷ 4, 25 × 8.* • Understand that division can be solved either by grouping or sharing and select the most appropriate strategy to solve a problem, *e.g. 40 ÷ 8= 5 could be 40 children in teams of 8 (grouping) or 40 sweets shared equally between 8 children (sharing).* • Know that some division calculations have a remainder that must be rounded up, rounded down or shown as a remainder depending on the context of the problem. • Multiply a one-digit number by a two-digit multiple of 10, *e.g. 8 × 40.* • Divide a multiple of 10 by a one-digit number related to extended tables facts, *e.g. 240 ÷ 4.* • Multiply any two-digit number by a one-digit number. • Estimate possible outcomes with a degree accuracy. • Check answers for sense against estimates. Progression From Mental to Formal Written Methods • Write word problems as a mathematical statement, *e.g. Write '40 sweets shared between 8 people' as 40 ÷ 8.* • Use informal jottings and diagrams, *e.g.* ♦ *repeated addition / subtraction on a number line;* ♦ *arrays;* • Understand and use the grid method for multiplication where there is at least one two-digit number (partitioning – law of distribution), *e.g. 15 × 8 can be worked out as (10 × 8) + (5 × 8);* The following are not essential in Year 3. • Understand and use an expanded column method for multiplication. • Use a formal method for multiplication and division. (See Appendix 1).



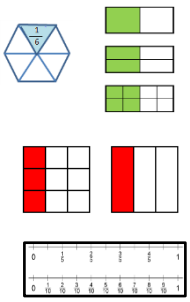




Y3 Steps 22–24	Multiplication and Division Y3
Statement	**Descriptors**
Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	• Solve missing number problems using known multiplication and division facts, *e.g.* ◆ *▢ × 4 = 12.* ◆ *36, ▢, 28, 24, ▢, ▢.* ◆ *20 ÷ ▢ = ▢.* • Complete positive integer scaling and correspondence (relationship) problems, *e.g.* ◆ *If a square had equal sides of 4 cm, how far would it be round the outside of square if the sides were 3 times longer?* ◆ *adjust a recipe, such as work out a recipe for 8 people or 2 people by doubling or halving the quantities for 4 people (not involving fractions).* ◆ *There are 3 hats and 4 coats. How many outfits can be made?* Scaling problems are an early introduction to ratio and proportion. • Solve multiplication and division problems working methodically, *e.g.* ◆ *I know that 5 × 6 = 30. What else do I know?* ◆ *Find some division calculations that have the answer 6.* ◆ *Sort a selection of numbers for multiplication and division properties,* e.g. into Venn or Carroll diagrams. ◆ Tables have 4 legs and stools have 3 legs. I see 32 *legs. How many tables and stools are there?* ◆ *What's my number?* e.g. I think of a number, double it, add 10 and halve it. The answer is 35. ◆ *If you pack 57 bars of chocolate into boxes that hold 8 bars, how many boxes would you need? Explain why.* ◆ *Tell a mathematical story for 24 ÷ 6 and 4 × 10.* • Explain how a problem has been solved. 

Y3 Steps 22–24	Number Fractions	◀Y2
Key Messages • *Understand the role of the numerator and denominator of a fraction (not necessarily referring to them in these terms).* • *Use fractions to describe a proportion of a shape or an amount.* • *Count in fractions and position fractions on a number line.* • *Understanding tenths (and division by 10) is critical to underpinning the decimal system.* • *Children need to understand that in unitary fractions, the larger the denominator, the smaller the fraction.* • *When finding fractions of amounts children should see the written division calculation at the same time to make links between fractions and division, e.g. 1/5 of 15 oranges = 3 oranges and 15 ÷ 5 = 3.* • *Use language of fractions: part, equal parts, fraction, whole, one third, two thirds, three thirds, one fifth, one tenth.*		Y4▶

Y3 Steps 22–24	Fractions Y3
Statement	**Descriptors**
Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts; and from dividing one-digit numbers or quantities by 10.	• Count forwards and backwards in tenths (1/10 and 0·1) between 0 and 1 using apparatus, *e.g. counting sticks, number lines or number hoops.* • Understand that a decimal point is used to separate whole amounts and parts of the whole when writing decimal numbers. • Position and label decimal and fractional tenths on the same 0 to 1 number line divided equally into ten portions and understand the relationship between them, *e.g.* 1/10 can also be written as 0·1, 3/10 as 0·3, etc. • Understand that when counting in tenths, 10 tenths is equivalent to 1, 20 tenths is equivalent to 2, etc. • Understand that when one is divided into 10 equal parts each part is 1/10, *e.g. Measure and cut a piece of string.* • Understand that when a single-digit number or quantity is divided into 10 equal parts each part is the single-digit number of tenths, *e.g. a 7 cm piece of string cut into ten equal parts will be ten pieces that are* 7/10 cm, or 0·7 cm each. • Recognise decimal notation for tenths when counting beyond 1, *e.g. 23 tenths can be written as* 23/10 *or as the decimal number 2·3.* ⇒ *Count from 0 in multiples of 4, 8, 50 and 100. (Number: Place Value, Year 3)*
Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.	Remainders are officially introduced in Year 5 but there will be many instances when a remainder is encountered in practical contexts, *e.g. Share 20 sweets between 3 people.* • Know that to find a unit fraction of objects all the objects must be shared equally into a defined number of sets (the bottom number of the fraction / the denominator). • Find a unit fraction of discrete objects or a quantity, relating this to division, *e.g. 1/3 of 6 oranges is the same as sharing 6 oranges equally between 3 people or 6 ÷ 3.* • Find a non-unit fraction of discrete objects, *e.g.* ◆ *5/6 of 6 oranges.* ◆ *shade 4/5 of the squares in a shape on a grid.* ◆ *3/4 of an hour in minutes.* • Understand that a unit fraction of one set of objects might be more than, less than or the same as a non-unit fraction of another set of objects, *e.g. ½ of 8, ⅔ of 6, 1/5 of 20, 1/3 of 12 are all the same.*
Recognise and use fractions as numbers: unit fractions (numerator of 1) and non-unit fractions with small denominators.	• Know and interpret correctly the different parts of a fraction: ◦ the 'bottom' number (the denominator) is how many equal parts there are / will be; ◦ the 'top' number (the numerator) is how many of the parts we need; ◦ the line or slash means 'shared between' or 'divided into' or 'out of every'. • Use fraction notation with understanding, *e.g. ¾ is really 3 ÷ 4 so this could be:* ◆ *3 pieces of pizza that has first been shared equally into 4.* ◆ *¾ of 8 could be 8 apples that have been shared into 4 equal groups and then 3 groups re-combined to make 6 apples, etc.*

Y3 Steps 22–24	Fractions Y3
Recognise and show, using diagrams, equivalent fractions with small denominators.	• Understand that one is 2 halves, 4 quarters, 8 eighths, etc. For fractions families, *e.g. 2, 3 and 5* • Demonstrate and explain why fractions are equivalent, such as ½ and ²⁄₄ and ⁴⁄₈, *e.g.* ♦ *Fold and shading / cutting the same-sized pieces of paper.* ♦ *Make a fractions wall with the same length of paper cut in different ways and arranged in horizontal rows underneath each other.* ♦ *Use fraction cards.* ♦ *Use Cuisenaire rods or similar.* • Compare fractions and recognise that some fractions are in the same place on the number line because they are equivalent. 
Add and subtract fractions with the same denominator within one whole [for example, ⁵⁄₇ + ¹⁄₇ = ⁶⁄₇].	• Identify pairs of fractions that make a whole, *e.g. Say two fractions that make one from looking at a fraction wall (²⁄₅ and ³⁄₅, etc), piecing together parts of shapes.* • Add and subtract fractions with the same denominator, totalling less than 1, in a practical context, *e.g. ⅝ and ⅛ of a pizza, ²⁄₇ and ³⁄₇ of a sausage roll of playdough.* • Understand that ²⁄₄ and ¾, etc., are repeated addition of ¼ and vice versa for repeated subtraction.
Compare and order unit fractions, and fractions with the same denominators.	A common misconception is that a larger denominator is a bigger amount. • Order pictures / diagrams representing different fraction amounts. • Position non-unit fractions with the same denominator on a number line. • Understand that, in unit fractions, the larger the denominator, the smaller the fraction, *e.g. Position a range of unit fractions accurately on the number line between 0 and 1.*
Solve problems that involve all of the above.	• Select appropriate apparatus to solve fraction problems. • Estimate fraction sizes accurately. (Use small denominators for unit and non-unit fractions.) • Recognise patterns in fractions, in particular in equivalent fractions. • Understand the difference between finding a fraction of one and a fraction of a quantity or measure. • Solve fractions problems, *e.g.* ♦ *Position a range of unit fractions on a blank 0 to 1 number line.* ♦ *Estimate and check what fraction of a container (no scale or scale hidden) is full of sand.* ♦ *I eat ³⁄₁₀ of my bar of chocolate. What fraction do i have left?* ♦ *A cake is sliced into sixths. How many different ways can you share the cake between 2 friends. How will you record what you have found out?* ♦ *Which would you rather have, ⅕ of a bag of 30 sweets or ⅔ or a bag of 12 sweets?* ♦ *Finish the sequence. ▢, ²⁄₁₀, ³⁄₁₀, ⁴⁄₁₀, ▢, ▢. Do you know what the tenth term could be?* ♦ *In how many different ways can you colour a third of a 3 by 3 square?* ♦ *Where would ⅚ be on a number line?* ♦ *Show, in your own way, ⅜ as a fraction of a shape and ⅜ as a fraction of a quantity.*

Y3 Steps 22–24	Measurement	◀Y2
Key Messages • *Set calculations in the context of real-life / word problems wherever possible.* • *Use a range of vocabulary associated with measures.* • *It is vital that pupils have opportunities to read and measure with scales with different divisions.* • *Ensure that children know the relationships between standard units of metric measure and units of time and can make simple conversions.* • *Provide opportunities for measuring and comparing in data handling / statistics and apply across the curriculum.* • *Pupils should select the most appropriate instrument of measurement for the task or numbers involved.* • *Use measurement language regularly, e.g. approximately, distance apart / between, distance to / from, century.*		Y4▶

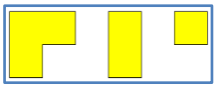
Y3 Steps 22–24	Measurement Y3
Statement	**Descriptors**
Measure, compare, add and subtract:	
lengths (m/cm/mm);	• Know the relationships between standard units of measure, i.e., 10 mm = 1 cm, 100 cm = 1 m, 1000 mm = 1 m and use these relationship to work out others, *e.g. 3 m = 300 cm.* • Convert one unit to another when solving problems with mixed units, *e.g. Brian is 96 cm tall and Abraham is 1 m 14 cm tall. How much taller is Brian than Abraham?* • Record lengths using mixed units, *e.g. 1 m and 30 cm.* • Measure lengths and draw lines to the nearest marked division or half-division. • Estimate lengths using benchmarks and check for accuracy, *e.g. How many chairs will fit along the wall?* • Compare the length in any direction of two or more objects. • Solve practical length problems involving addition, subtraction, integer scaling and comparison, *e.g.* ◆ *What's the difference between / the total length of . . . ?* ◆ *A piece of cloth 2 m long. I cut off one length of 75 cm and one of 54 cm. How much is left?* ◆ *The paper is twice as long as the pencil. If the pencil is 24 cm, how long is the paper?*
mass (kg/g);	• Know the relationships between standard units of weight, i.e., 1000 g = 1 kg, and use this relationship to work out others, *e.g. 3,500 g = 3 kg and 500 g.* • Convert one unit to another when solving problems with mixed units, *e.g. The flour weighs 1 kg 25 g and the sugar weighs 600 g. How much heavier is the flour than the sugar?* • Compare the capacity / mass of two or more objects. • Record lengths using mixed units, *e.g. 3 kg and 500 g.* • Weigh objects to the nearest marked division or half-division on compression scales. • Estimate weights using benchmarks and check for accuracy, *e.g. How much does your shoe weigh?* • Solve practical weight problems involving addition, subtraction, integer scaling and comparison, *e.g.* ◆ *What's the difference between / total of . . . ?* ◆ *Order three bags of nuts by weight;* ◆ *The sugar is 3 times the weight of the butter. The butter is 30 g. What is the weight of the sugar?*
volume/capacity (l/ml).	Capacity is the amount a container can hold, volume is the amount of a liquid or solid in the container. • Know the relationships between standard units of capacity, i.e., 1000 $m\ell$ = 1ℓ and use this relationship to work out others, *e.g. 3,500 $m\ell$ = 3 ℓ 500 $m\ell$.* *(cm^3 is not introduced until Year 5.)* • Convert one unit to another when solving problems with mixed units, *e.g. There is 1 ℓ 12 $m\ell$ in the big milk bottle and 112 $m\ell$ in the small one. How much less milk is in the small bottle?* • Record capacity using mixed units, *e.g. 3 ℓ500 $m\ell$.* • Measure liquids / solids to the nearest marked division or half-division on a measuring vessel. • Compare the weight of two or more objects. • Estimate capacities and volumes using benchmarks and check for accuracy, *e.g.* ◆ *Approximately how much milk will this cup hold?* ◆ *How many marbles can you fit into this box?* • Solve practical volume and capacity problems involving addition, subtraction, integer scaling and comparison, *e.g.* ◆ *What's the difference between / the total capacity of. . . ?* ◆ *There is quarter the amount of orange juice to water in the drink. How much could there be of each to fill this glass almost to the top?* ◆ *Build 2 different models with 36 cubes all the same size. How are they the same / different?*
Measure the perimeter of simple 2-D shapes.	• Understand what perimeter means. • Measure and systematically record the perimeter of a range of shapes. • Understand that to find the perimeter of a regular 2-D shape only one side needs to be measured. • Use repeated addition / multiplication to work out the perimeter of shapes, *e.g. from knowing only two side measurements of a rectangle.*

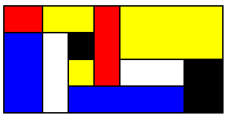
Y3 Steps 22–24	Measurement Y3
Statement	**Descriptors**
Add and subtract amounts of money to give change, using both £ and p in practical contexts.	• Count forwards and backwards in 20p and 50p coin amounts. • Understand the need for place keeping zeros in £ and p notation, *e.g.* Write £1·09 or 109p. • Change required can be calculated by counting on from a total amount, *e.g. Use a number line from 69p to £2.* • Add and subtract amounts in the context of money problems, *e.g.* ◆ *Use a table of prices to work out how much it would cost for a family to go to the zoo.* ◆ *Make up a money story.* ◆ *Word problems,* e.g. Two packets of sweets together cost 90p. One costs double the other. How much does the more expensive packet cost? How much change from £5? ◆ *Find all possible amounts that can be made using any three coins.*
Tell and write the time from:	
an analogue clock, and 12-hour and 24-hour clocks;	Only the statements before the Roman Numerals section below are part of the KPI. • Read and write the time to the nearest minute on an analogue clock. • Know that when the time is past midday an analogue clock counts a new set of 12 hours (p.m.). • Read and write the time to the nearest minute on a 12-hour digital clock. • Read and write the time to the nearest minute on a 24-hour digital clock. • Know that when the time is past midday a 24-hour digital clock continues to the 13th, 14th hour, etc.
an analogue clock using Roman numerals from I to XII.	• Know values of the Roman numerals I = 1, V = 5, X = 10. • Interpret and write Roman numerals to 12 correctly using the standard rules on a clock face: ◆ *When I appears **after** V or X it is **added**, e.g. VI = 5 + 1 = 6 or X I = 10 + 1 = 11;* ◆ *When I appears **before** V or X it is **subtracted**, e.g. IV = 5 – 1 = 4 or IX = 10 – 1 = 9;* ◆ *Don't use the same symbol more than three times in a row,* e.g. 4 cannot be written as IIII. • Use analogue clocks annotated with Roman numerals to tell and record the time.
Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.	
Estimate and read time with increasing accuracy to the nearest minute;	• Identify timing benchmarks to help with estimation, *e.g. a particular TV program that is an hour long, 15 minutes for playtime.* • Estimate time taken for longer events with increasing accuracy, *e.g. How long will it to finish your story?*
record and compare time in terms of seconds, minutes and hours;	• Time and compare events choosing appropriate intervals from seconds, minutes and hours, *e.g.* ◆ *Who can jump 20 times the fastest?* ◆ *Which song lasts the longest?* ◆ *Which takes the shortest amount of time, a game of rugby or a game of football?* • Compare and order the time taken to complete several events. • Compare and order a set of times given in mixed intervals, *e.g. 1 hour and 20 minutes, 85 minutes.* • Solve problems, *e.g. Which took longer . . . ?*
use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.	• Understand and use in context the terms, a.m., p.m., morning, afternoon, noon and midnight. • Know that a.m. times are from midnight to midday and p.m. times are from midday to midnight. • Know that on a digital clock midnight is 00:00 and midday is 12:00.
Know the number of seconds in a minute and the number of days in each month, year and leap year.	• Recall the relationships between minutes, hours and days. • Know that there are 60 seconds in one minute, *e.g. Count the second hand whilst it makes one full rotation on the clock face.* • Know the numbers of days in each month, *e.g. Learn a rhyme to aid memory.* • Know the number of days in a year and a leap year.
Compare durations of events [eg to calculate the time taken by particular events or tasks].	• Use counting strategies to work out simple time differences and record using analogue and / or digital clocks, *e.g. A car leaves home at 8:35 and arrives at school at 8:55. How long did the journey take?* • Compare two or more time intervals, *e.g. Whose journey to school takes the longest? (Present as a bar chart.)* • Work out time differences bridging over the hour or several hours, *e.g. How long did it take for a train journey.* • Calculate a start or end time from knowing how long an event lasted, *e.g. If the TV show started at 1:30 and lasted for 35 minutes, what time did it finish?* • Be able to find a particular date on a calendar. • Use a calendar to work out how long is between two or more events / dates.

Y3 Steps 22–24	Geometry Properties of Shapes	◀Y2 Y4▶

Key Messages

- *Make sure shape and space activities are included in oral and mental starters, including the development of visualisation skills.*
- *Make sure children have opportunities to draw and manipulate shapes in a variety of different ways.*
- *Children should refine their understanding by exploring shapes that do and do not satisfy particular criteria.*
- *Children should see different 2-D representations to allow them to explore changes in the orientation.*
- *Children should use shapes to solve problems.*
- *Use shape and space language:*
  hemi-sphere, prism, semi-circle, pentagonal, hexagonal, octagonal, quadrilateral;
  prisms, pyramids, cylinders, cones, spheres, hemi-spheres, apex, vertex, vertices;
  whole, half, quarter, three-quarter turns, right angle, greater / smaller angle.

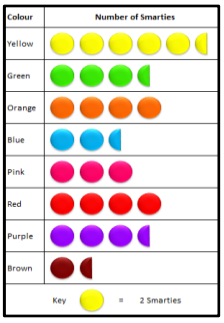
Y3 Steps 22–24	Properties of Shapes Y3
Statement	**Descriptors**
Draw 2-D shapes and make 3-D shapes using modelling materials.	• Construct simple, specified shapes accurately, using rulers and set squares and whole centimetres, *e.g. Draw a square with sides of 6 cm or draw a right angled triangle with its longest side 1 cm.* • Draw and measure diagonals of shapes. • Construct 3-D shapes from 2-D shapes and use then to name, describe and investigate properties, *e.g. Clixi, straws and pipe cleaners.* • Follow instructions to build 3-D shapes, *e.g. Build a shape described by an adult* or *from a picture / photograph or diagram.* • Solve shape problems, *e.g.* ♦ *Make repeating patterns based on shape properties.* ♦ *Create shapes and investigate their properties, e.g.* ◊ *Fold and cut paper to make squares, octagons and stars.* ◊ *Use geo-strips or geoboards to investigate 4 sided shapes.* ◊ *Join two flat shapes together to make a new shape and describe it.* ◊ *Combine two 2-d shapes to make new and different shapes.* There is no specific reference to symmetry in Year 3 but use it in problem solving activities to build on experiences in Year 2 before moving onto the Year 4 objectives. ♦ Complete partly drawn shapes and patterns to make them symmetrical about a vertical or horizontal line. ♦ Investigate the symmetry of 2-D shapes, *such as rectangles, semi-circles and triangles.* ♦ Combine shapes to make symmetrical patterns in different ways (illustrated opposite), naming the new shapes made and finding all possibilities. 
Recognise 3-D shapes in different orientations and describe them.	3-D Solids: including prisms, pyramids, spheres, cones and cylinders, spheres and hemi-spheres. • Name and describe solids, using the correct language. • Recognise shapes in different orientations and positions in the environment. • Select, sort and order shapes by their properties, *e.g. Venn or Carroll diagrams.* • Describe shapes by their properties using terminology including vertex / vertices, right angled, surface. • Visualise shapes, extending the complexity of language and instructions. • Solve shape problems, *e.g.* ♦ *Make a repeating pattern and deduce what the next item will be.* ♦ *Investigate a set of the same type of solids, such as pyramids, and generalise about them.* ♦ *Use construction kits or straws and pipe cleaners to make shapes using at least one triangle.*
Recognise angles as a property of shape or a description of a turn.	⇒ *Identify right angles, recognise that two right angles make a half-turn. . . (Geometry: Shape and Space, Year 3)* • Make the link between angles in shapes and angles of turn, *e.g. teacher makes an angle with geostrips, holding one piece in a vertical position, and turning the other deliberately and slowly either clockwise or ant-clockwise one, two, three or four right angles. Children turn their bodies the same amount in the same direction and describe their movements.*

Y3 Steps 22–24	Properties of Shapes Y3
Statement	**Descriptors**
Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.	⇒ *Use mathematical vocabulary to describe position, (Geometry: Position and Direction, Year 2)* ⇒ *Recognise angles as a property of shape or a description of a turn. (Geometry: Shape and Space, Year 3)*  Right Angles – Shapes Using up to four quarter circles to piece together as a visual image might be helpful. Remember to use in the context of (geared) clocks. Using floor robots helps pupils to know the number of degrees in combinations of right angles. • Recognise, in both shapes and turning movements,: ◦ one right angle as one-quarter of a turn; 90^{o}; ◦ two right angles as one-half of a turn; facing the opposite way; straight line; half circle; ◦ three right angles as three-quarters of a turn; ◦ four right angles as a complete turn; facing the same way as the start; full circle; 360^{o}. • Use an angle tester, such as a transparent set square, to find objects with right angles, *e.g. Sort a set of shapes by whether they have a right angle or not.* • Identify whether angles in 2-D or 3-D shapes / objects are =, < or > than a right angle, using an angle measurer. • Follow and give directions that include turning through whole, half, quarter and three-quarter turns and moving in straight lines between, *e.g.* ♦ *Program a floor robot;* ♦ *Follow directions for moving through a maze.* ♦ *Evaluate instructions and adjust to make them more accurate.*
Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	• Identify simple examples of horizontal lines in the environment, *such as the edge of a table.* • Identify simple examples of vertical lines in the environment, *such as the walls in the corner of the room.* • Know that perpendicular means 'at right angles to', *e.g. Find shapes that have perpendicular lines in the classroom, sometimes when the lines are not horizontal and vertical.* • Know that lines are parallel if they stay the same distance apart, *e.g.* ♦ *From a selection of shapes, select those that have at least one pair of parallel sides;* ♦ *Measure the distance between the horizontal and / or vertical lines of a shape such as a rectangle.* • Solve shape problems, *e.g.* ♦ *Sort shapes for two or three properties,* e.g. in a Venn diagram, criteria could be at least one pair of parallel sides, have at least one pair of perpendicular sides, etc. ♦ *Make interestng patterns by drawing horizontal and vertical lines different distances apart , e.g.* Make a pattern in the style of Mondrian. Identify the smallest / largest rectangle. Were there any squares? 

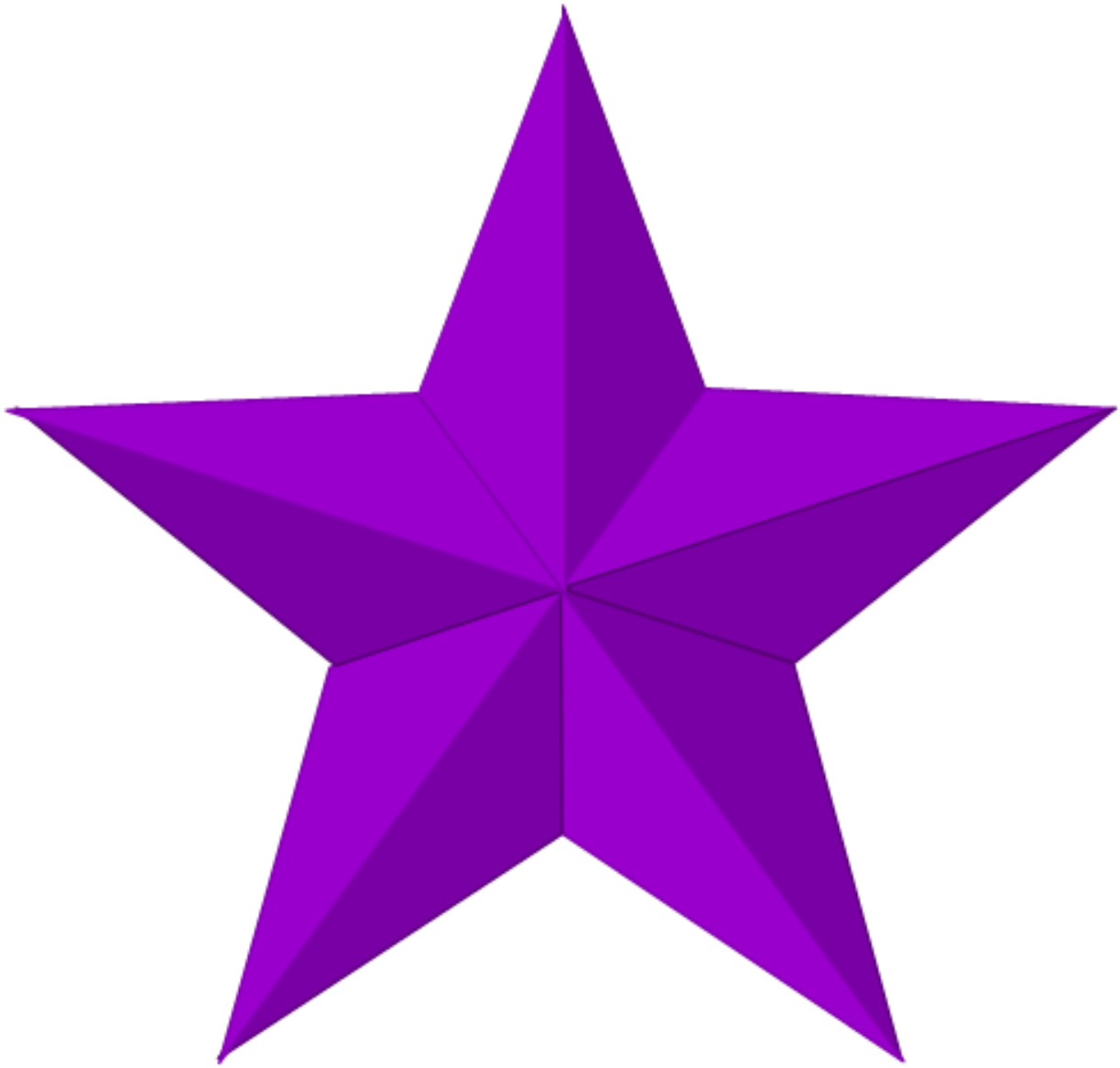
Y3 Steps 22–24	Statistics	◀Y2 Y4▶

Key Messages

- *Follow through the data-handling cycle: pose a question and answer it by collecting data, organising, representing and interpreting it.*
- *Pupils need to understand how different types of graphs, charts and sorting diagrams are used to present data.*
- *Pupils must interpret titles and labels accurately to locate information needed to answer questions.*
- *Give pupils opportunities in mental and oral work to interpret scales;* e.g. 'What value lies exactly half of the way between these two intervals on my scale?'
- *Provide regular opportunities to interpret real data,* e.g. timetables, tables from magazines, graphs from the internet.
- *Use statistics language: chart, bar chart, table, frequency table, Carroll diagram, Venn diagram, label, title, axis, axes, diagram.*

Y3 Steps 22–24	Statistics Y3
Statement	**Descriptors**
Interpret and present data using bar charts, pictograms and tables.	General • Understand that the way statistical work is presented is important and why, *e.g. use ICT to generate different charts using the same data and discuss the impact of each on the audience, ease of interpretation, etc.* • Consistently interpret and use titles, axis labels and scales with different intervals and keys, where required, in all forms of data presentation. • Suggest own questions / hypotheses for investigations and design a method of data collection; *e.g. We think most our class come to school by car.* • Make statements about implications or possible actions based on the results of an investigation; *e.g. Most of our class want to have extra PE time as our class reward.* ⇒ *Solve one-step and two-step questions . . . using information presented in scaled bar charts and pictograms and tables. (Statistics, Year 3)* Block Graphs / Bar Charts • Know that block charts both horizontal (bar) and vertical (column) are used to compare different groups. • Know the value of each interval on a simple scale not in ones, such as 2, 5, 10, 20 units, and use accurately in own presentation of bar charts. • Make sensible estimates for measures that fall between two marked intervals on a scale. • Know that the bars on a block graph that represent counting (discrete data) should not be touching.  Pictograms • Know that pictograms are used to compare different groups where a likeness to a physical object improves presentation. • Interpret and present pictograms with a key, including those where one picture represents two objects and half a picture represents one object. Tables, Including Lists and Two-Way Tables • Know that tables are used to look up data that may have many items and categories. • Identify the row and column (cell) where specific data is stored in a two-way frequency table; *e.g.*; ♦ *How many people went snowboarding in March?* ♦ *What time does Emmerdale start on Thursday?* |	January | February | March | |---|---|---|---| | Snowboarding | 25 | 80 | 65 | | Skiing | 32 | 49 | 20 | | Skating | 19 | 67 | 25 |
Solve one-step and two-step questions [For example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	• Solve problems presented in a range of different contexts, including: ◦ a scaled block graph. ◦ a pictogram; ◦ a table; • Solve one-step problems using information in scaled block graphs, pictograms and tables; *e.g.* ♦ *What is the least popular TV show with pupils in our class?* ♦ *How many more pupils prefer cola to milk?* • Solve two-step problems using information in scaled block graphs pictograms and tables; *e.g.* ♦ *If I catch the first bus that leaves the bus station after 2 p.m., what time does it get to Green Park?* ♦ *On which day or days was it warmer than 15°C and how much did the temperature vary between the warmest and coolest day?* ⇒ *Interpret and present data using bar charts, pictograms and tables. (Statistics, Year 3)*

Year 4: Steps 25-27



Y3/4	Steps 26–27	Reading Word Reading	◀Y2
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*			Y5/6▶

Y3/4	Steps 26–27	Reading Word Reading Y3/4	◀Y2
Statement		**Descriptors**	
Apply their growing knowledge of root words, prefixes and suffixes (etymology and morphology) as listed in English Appendix 1, both to read aloud and to understand the meaning of new words they meet.		See English Appendix 2 (Y3): Vocabulary, grammar and punctuation. See English Appendix 1 (Y3/Y4): Spelling. Content within this area of learning may be determined by schools' progression mapping. • Identify a range of prefixes in text to explore how these change the meanings of nouns, *e.g. super, anti, auto.* • Explore and generate word families from text to show how words are related in form and meaning, *e.g. solution / solve, dissolve / insoluble.* ⇒ *Use further prefixes and suffixes and understand how to add them. (Spelling, Year 3/4)*	
Read further exception words, noting the unusual correspondences between spelling and sound, and where these occur in the word.		See English Appendix 1 (Y3/Y4): Spelling. • Read words from the Word list - Years 3 and 4.	

Y3/4	Steps 22 – 27	Reading Comprehension	◀Y2
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*			Y5/6▶

Y3/4	Steps 22–27	Comprehension Y3/4
Statement	**Descriptors**	
Develop positive attitudes to reading and understanding of what they read by:		
listening to and discussing a wide range of fiction, poetry, plays, non-fiction and reference books or textbooks;	• Discuss personal point of view and justify opinions. • Make book recommendations giving reasons for choices. • Talk about favourite events, characters, and theme in fiction • Listen to and discuss plays. • Listen to and discuss poetry. • Discuss the different structures of some non-fiction textbooks. • Discuss and compare facts, in non-fiction and reference texts, related to ongoing learning in the classroom. • Read extensively favourite authors or genres and experiment with other types of text. ⇒ *Plan their writing by discussing writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar. (Composition, Year 3/4)*	
reading books that are structured in different ways and reading for a range of purposes;	• Discuss and read a range of genres with increasingly different structures and a more diverse range of purposes through*:* ◦ narrative, *e.g. stories with historical settings, stories set in imaginary worlds, stories from other cultures;* ◦ stories which raise issues / dilemmas; ◦ play scripts; ◦ poetry; ◦ instructional texts; ◦ explanation texts; ◦ non-chronological reports; ◦ recounts, *e.g. newspapers, magazines;* ◦ persuasive texts. • Self-select books for a specific purpose.	
using dictionaries to check the meaning of words that they have read;	• Use the first two / three letters of a word to locate words in a dictionary. • Use the quartiles of a dictionary to more efficiently locate a word. • Use the words typed at the top of the dictionary page to efficiently locate the target word. • *Use the first two or three letters of a word to check its spelling in a dictionary. (Spelling, Year 3/4)*	
increasing their familiarity with a wide range of books, including fairy stories, myths and legends, and re-telling some of these orally;	• Listen to, read and discuss an increasingly wide range of books. • Make more precise vocabulary choices, and use descriptive words and phrases, *e.g. when discussing story language.* • Compare and discuss story themes, settings (time and place), characters and plots linking directly to texts. • Tell and re-tell stories. • Self-select books according to personal interest, preference and recommendations, giving reasons for their selection.	
identifying themes and conventions in a wide range of books;	• Identify and discuss themes and conventions in what they read, *e.g.* ◆ *good over evil;* ◆ *wise and foolish;* ◆ *weak over strong;* ◆ *the use of magical devices in fairy stories and folk tales;* ◆ *villains and heroes;* ◆ *friendship;* ◆ *bullying.*	

Y3/4	Steps 22–27	Comprehension Y3/4
Statement	**Descriptors**	

preparing poems and play scripts to read aloud and to perform, showing understanding through intonation, tone, volume and action;	• Prepare and perform poems.
	• Prepare and perform play scripts.
	• Show an understanding of poems and play scripts by:
	  ◦ using appropriate intonation, tone, volume or actions when performing;
	  ◦ identifying appropriate intonation, tone, volume or actions in other's performance and offering constructive comments.	

discussing words and phrases that capture the reader's interest and imagination;	• Explore how authors use words and phrases to create impact and to engender a love of language, *e.g.*
	  ♦ *varied sentence structure, such as fronted adverbials (Like a flash, he was out of the classroom and away.);*
	  ♦ *adverb starters,* such as 'Unfortunately, the train had already left;';
	  ♦ *adjectives and expressive verbs;*
	  ♦ *alliteration;*
	  ♦ *simile and metaphor;*
	  ♦ *idioms;*
	  ♦ *word play.*	

recognising some different forms of poetry (for example, free verse, narrative poetry).	• Listen to, read and discuss different forms of poetry. • Identify and compare features of different poetic forms.	
Understand what they read, in books they can read independently, by:		
checking that the text makes sense to them, discussing their understanding and explaining meaning of words in context;	• Use prior knowledge to link topic or events from the book to their own experience or previous reading. • Use the grammar and context to read the text accurately. • Re-read text, read on and use context and grammar to explain the meaning of unknown words. • Use knowledge of word structures and origins to develop an understanding of word meanings. • Independently choose when to use a dictionary. • Explain the meaning of the text in own words.	
asking questions to improve their understanding of a text;	• Ask questions to clarify meaning of words, character's intent, events, plot, setting, and text structure, etc. • Generate questions about the text, such as 'What questions would you like to ask the characters?' *This could be through drama and role play, such as hot seating, freeze framing, thought taping, ask the expert.*	
drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence;	• Empathise with characters, *e.g. through use of a visualisation technique such as freeze framing to infer the nature of relationships and emotional responses through capturing and interpreting facial expressions and body language.* • Use prior knowledge and clues from the text to infer why a character behaved / reacted in a specific way, *e.g. Understand how previous events in a text would have left a character feeling and how that might affect their reactions.* • Use text evidence to infer how a character may be feeling or what they could be thinking at specific moments in the narrative, *e.g. 'Why was a character behaving in a specific way? What clues are there to suggest this in the text?'* • Answer inferential questions by stating a point, backing it up with evidence from the text and explain thinking, *e.g. 'Why did Little Red Riding Hood set off straight away to her Grandmother's?'*	
predicting what might happen from details stated and implied;	• Make regular predictions about characters, events and actions as text is read justifying reasons with reference to the text. • Make and justify literal predictions across a text, *e.g. 'When Red Riding Hood says, "What BIG teeth you have, Granny," I predict . . .'* • Make and justify predictions from what is implied, *e.g.* ♦ *I predict that the bullies will not leave Tom alone and will return to demand more money because it says in the text, "With a smile which didn't reach her eyes, Sonia hissed, 'See you soon Tommy . . . '"*	

Y3/4	Steps 22–27	Comprehension Y3/4
Statement	**Descriptors**	
identifying main ideas drawn from more than one paragraph and summarising these.	• Use an opening sentence of a paragraph to explain what it is about. • Read a text closely, *e.g. Highlight key words or phrases, main points or important information.* • Use information to summarise key themes of a paragraph in their own words, including: ◦ re-telling main points of a story in sequence. ◦ identifying key facts of a non-fiction text. ◦ reading a short paragraph (non-fiction) and composing an appropriate sub-heading. • Discuss, identify and summarise main ideas about how characters feelings, behaviour and relationships change across a text.	
identifying how language, structure, and presentation contribute to meaning.	• Identify how language contributes to meaning, *e.g. Identify how words and phrases are used to build suspense, atmosphere, setting and character profile.* • Identify some of the differences between language used in: ◦ fiction and non-fiction; ◦ formal and informal texts. • Identify how structure and presentation contributes to meaning by exploring and learning the conventions of different text types, *e.g.* ♦ *greetings in letters: or* ♦ *a diary written in the first person.* • Identify how figurative and expressive language is used to create images and atmosphere, including: ◦ simile; ◦ metaphor; ◦ personification; ◦ repetition for emphasis; ◦ alliteration. • Identify and understand how some presentational devices contribute to meaning, including: ◦ indexes; ◦ glossaries; ◦ contents page; ◦ headings and sub-headings; ◦ tables and charts; ◦ maps, diagrams and labels.	
Retrieve and record information from non-fiction.	• Locate information in non-fiction texts using a range of features including: ◦ indexes; ◦ glossaries; ◦ contents page; ◦ headings and sub-headings; ◦ tables and charts.; ◦ maps, diagrams and labels. • Skim and scan to locate key information, incorporating techniques such as highlighting and annotating. • Record and retrieve information gathered in various non-fiction formats, *e.g.* ♦ *flow charts;* ♦ *labelled diagrams;* ♦ *tables and charts.*	
Participate in discussion about both books that are read to them and those they can read for themselves, taking turns and listening to what others say.	• Express ideas and viewpoints across a range of genres, and with support, justify ideas, *e.g. Identify specific words or phrases to support a viewpoint.* • Ask and respond to questions using evidence from the text. • Actively listen to others by: ◦ maintaining eye contact with audience; ◦ demonstrating they are listening through body language; ◦ adapting and changing viewpoints in response to others.	

Y3/4	Steps 22–24	Writing Spelling	◀Y2
Key Messages • *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Pupils should proof-read their own and other's writing to improve the accuracy and consistency of spelling, knowing strategies for how to make changes, e.g. clapping syllables, identifying tricky part of word, choosing memory strategy to overcome errors: identifying root word, rules, syllables and phonemes.*			Y5/6▶

Y3/4	Steps 22–24	Writing Spelling Y3/4	◀Y2
Statement		**Descriptors**	
Use further prefixes and suffixes and understand how to add them.		See English Appendix 1 (Y3/Y4) • Identify words with prefixes, understanding how the prefix changes the meaning of the word. • Identify root words and match to appropriate prefix, explaining how the prefix changes the meaning of the word. • Identify words with suffixes, understanding how the suffix changes the meaning of the word. • Identify root words and match to appropriate suffix, explaining how the suffix adds meaning to the word. • Use prefixes and suffixes appropriately in independent writing. ⇒ *Apply their growing knowledge of root words, prefixes and suffixes . . . to understand the meaning of new words they meet. (Word Reading, Year3/4)*	
Spell further homophones.		• Identify homophones and near-homophones. • Match the homophone / near-homophone to its meaning, *e.g. play homophone snap.* • Use words accurately in independent writing demonstrating an understanding of meaning.	
Spell words that are often misspelt.		• Identify possible spelling errors in own writing and use strategies to correct, *e.g. by:* ◆ *clapping syllables;* ◆ *highlighting the tricky part of the word;* ◆ *choosing a memory strategy to overcome errors;* ◆ *identifying the root word,* ◆ *rules, such as 'i before e except after c';* ◆ *counting syllables;* ◆ *checking phonemes;* ◆ *using 'look, say, cover, write, check' method to remember how to spell words.* • Use words identified, spelling them accurately in independent writing.	
Place the possessive apostrophe accurately in words with regular plurals [for example, girls', boys'] and in words with irregular plurals [for example, children's].		• Identify the placement of the possessive apostrophe, understanding how the apostrophe affects the meaning of the phrase / text. • Place the possessive apostrophe accurately in words with regular plurals, in independent writing. • Place the possessive apostrophe accurately in words with irregular plurals, in independent writing.	
Use the first two or three letters of a word to check its spelling in a dictionary.		• Use the quartiles of a dictionary to more efficiently locate words. • Use the first two / three letters of a word to check spelling. • Use the words typed at the top of the dictionary page to efficiently locate the target word. ⇒ *Develop positive attitudes to reading and understanding what they read by using dictionaries to check the meaning of words that they have read. (Comprehension, Year 3/4)*	
Write from memory simple sentences, dictated by the teacher, that include words and punctuation taught so far.		• Write from memory simple sentences dictated by the teacher that include words and punctuation taught so far.	

Y3/4	Steps 22–27	Writing Handwriting	◀Y2
Key Messages • Explicit teaching of the skills and processes essential to handwriting must precede, support and inform assessment of the STAT statements.			Y5/6▶

Y3/4	Steps 22–27	Writing Handwriting Y3/4
Statement		**No descriptors required for handwriting**
Use the diagonal and horizontal strokes that are needed to join letters and understand which letters, when adjacent to one another, are best left unjoined.		
Increase the legibility, consistency and quality of their handwriting [for example, by ensuring that the downstrokes of letters are parallel and equidistant; that lines of writing are spaced sufficiently so that the ascenders and descenders of letters do not touch].		

Y3/4	Steps 22–27	Writing Composition	◀Y2 Y5/6▶

Key Messages

- *Use of talk for writing, role play, drama, reading, etc., is essential.*
- *Modelling in shared writing must come prior to independent writing.*
- *Write for a range of real purposes and audiences.*
- *When using this grid for assessment, practitioners should look also for evidence from the SPaG and Reading grids.*
- *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa using age appropriate texts.*
- *Progression across year groups will be determined by complexity and range of text type.*

Y3/4	Steps 22–27	Composition Y3/4
Statement	**Descriptors**	
Plan their writing by:		
discussing writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar;	• Read and discuss exemplar texts similar to that which they are planning to write in order to familiarise themselves with the structure, grammar and vocabulary of that text type. • Identify and discuss features, structure, vocabulary and grammar of the text type similar to that which they are planning to write. • Choose and explain vocabulary choices in the context of the subject / genre, *e.g.* ♦ *formal / informal language choices;* ♦ *hyperbole to persuade.* • Plan their writing to include structure, vocabulary and grammar appropriate to text type. ⇒ *Develop positive attitudes to reading and understanding of what they read by listening to and discussing a wide range of fiction, poetry, plays, non-fiction and reference books or textbooks. (Comprehension, Year 3/4)*	
discussing and recording ideas.	• Use a variety of planning formats to capture ideas, *e.g.* ♦ *story mountain;* ♦ *mind mapping;* ♦ *story boards.*	
Draft and write by:		
composing and rehearsing sentences orally (including dialogue), progressively building a varied and rich vocabulary and an increasing range of sentence structures (English Appendix 2);	See also English Appendix 2. • Compose and rehearse sentences orally. • Re-read, edit and improve throughout the course of writing. • Build a varied and rich vocabulary by using: ◦ words and phrases collected from reading, *such as expressive verbs, alliteration, simile, metaphor, idioms;* ◦ noun phrases expanded by the addition of modifying adjectives, nouns and preposition phrases, *such as 'the teacher' expanded to 'the strict maths teacher with curly hair;'* ◦ conjunctions, *such as when, before, after, while, so, because;* ◦ adverbs, *such as then, next, soon, therefore;* ◦ prepositions, *such as before, after, during, in, because of.* • Use an increasing range of sentence structures in writing, *e.g. fronted adverbials, such as 'Later that day', or 'I heard the bad news.'* ⇒ *Draft and write by organising paragraphs around a theme. (Writing: Composition Years 3/4)* ⇒ *Fronted adverbials (e.g. Later that day, I heard the bad news.). (VG&P, Year 4)*	
organising paragraphs around a theme.	• Be able to give a sentence which suggests a paragraph's content. • Group linked information into sections, understanding that some sections, particularly long or complex sections, may require more than one paragraph to convey information clearly for the reader, *e.g.* ♦ *settings, characters and plot in narratives;* ♦ *when recording information under headings and sub-headings in non-fiction.* • Signal sequence, place and time to give coherence. • Use adverbs and conjunctions to establish cohesion within paragraphs. ⇒ *Draft and writ by composing and rehearsing sentences orally (including dialogue), progressively building a varied and rich vocabulary and an increasing range of sentence structures (Writing: Composition Years 3/4)*	

Y3/4	Steps 22–27	Composition Y3/4
Statement	**Descriptors**	
in narratives, creating settings, characters and plot.	• Describe settings understanding how small details can be included to evoke time, place and mood, drawing on this to demonstrate how characters behave in different settings. • Use figurative and expressive language to build a fuller picture of a character. • Use dialogue to build character descriptions and evoke a response in the reader, *e.g. sympathy or dislike.* • Plan and write complete stories identifying stages in the telling, including: ◦ introduction; ◦ build up; ◦ climax or conflict; ◦ resolution.	
in non-narrative material, using simple organisational devices [for example, headings and sub-headings].	• Organise information into paragraphs. • Demonstrate an understanding of features of text type and use simple organisational devices, *e.g.* ♦ *headings and sub-headings* ♦ *labelled diagrams and illustrations.* • Record information researched on a topic from a number of different sources and reorganise into coherent paragraphs to create a non-narrative text, *e.g. a comparative report about the features of moths and butterflies.*	
Evaluate and edit by:		
assessing the effectiveness of their own and others' writing and suggesting improvements.	• Re-read, edit and improve throughout the writing process both independently and with response partners, suggesting / making appropriate improvements as necessary, *e.g.* ♦ *checking for verb tense agreement;* ♦ *checking that direct speech is demarcated by inverted commas;* ♦ *checking that a comma is included after the reporting clause.*	
proposing changes to grammar and vocabulary to improve consistency, including the accurate use of pronouns in sentences.	Identify possible improvements to grammar and vocabulary to maintain / improve consistency: • Use range of appropriate pronouns or nouns to aid cohesion and avoid repetition, *e.g. 'Peter went to the shops. He bought a cream cake. On the way home, the greedy boy ate it.';* • Check that the same tense is used consistently throughout the sentence when discussing things that happen at the same time and identify possible errors, suggest / make appropriate improvements as necessary, *e.g. 'When I went to the cafe, I bought two cookies.';* • Use appropriate choices when referring to separate events where tenses differ, *e.g. 'I cycled to school last Monday, but today I am taking the bus.'*	
Proof-read for spelling and punctuation errors.	See also English Appendix 1 and 2 (Y3/Y4). • Identify possible spelling errors and know strategies for how and when to make changes. • Identify examples of direct speech in writing and check for use of inverted commas to punctuate the direct speech and that a comma is included after the reporting clause. • Identify accurate use of and possible errors / omissions in the following, suggesting and making corrections as necessary: ◦ capital letters; ◦ full stops, question marks and exclamation marks to demarcate sentences; ◦ commas to separate items in a list; ◦ apostrophes of omission; ◦ apostrophes to mark singular possession in nouns, *e.g. the girl's name;* ◦ inverted commas and other punctuation to indicate direct speech, *e.g. inclusion of a comma after the reporting clause such as 'the terrified passenger shouted, "fire!";* ◦ apostrophes marking plural possession, *e.g. the girls' names;* ◦ commas after fronted adverbials, *e.g. 'Later that day', 'I heard the bad news.'* ⇒ *Punctuation (VG&P, Year 4)*	
Read aloud their own writing, to a group or the whole class, using appropriate intonation and controlling the tone and volume so that the meaning is clear.	• When reading aloud, respond appropriately to an increasing range of punctuation cues. • Demonstrate an increasing confidence and control when reading aloud to a range of audiences by varying intonation, tone and volume to ensure that meaning is clear.	

Y4 Steps 25-27	Vocabulary, Grammar and Punctuation	◀Y3 Y5▶

Key Messages

- *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.*
- *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.*
- *Pupils should proof-read their own and other's writing to improve the accuracy and consistency of spelling, knowing strategies for how to make changes, e.g. clapping syllables, identifying tricky part of word, choosing a memory strategy to overcome errors: identifying root word, rules, syllables and phonemes.*
- *Develop their understanding of the concepts set out in English Appendix 2 (Year 4).*

Y4 Steps 25-27	Vocabulary, Grammar and Punctuation Y4
Statement	**Descriptors**
Word content to be introduced (statutory requirement):	
The grammatical difference between plural and possessive –s.	See also English Appendix 1 (Y3/Y4). • Identify examples of and the differences between the plural and the possessive ***s*** in reading, *e.g. girls, girl's.* • Understand the purpose of adding the plural and the possessive ***s*** in context. • Use the possessive apostrophe accurately in words with regular plurals, *e.g. girls', boys'.* • Use the possessive apostrophe in words with irregular plurals, *e.g. children's.* ⇒ *Apostrophes to mark singular and plural possession (e.g. the girl's name, the girls' names). Punctuation, VG&P, Year 4)*
Standard English forms for verb inflections instead of local spoken forms (e.g. we were instead of we was, or I did instead of I done).	• Identify, through reading, examples of standard and non-standard English, *e.g. in dialogue.* • Compose and rehearse sentences orally before writing. • Use Standard English forms for verb inflections in writing.
Sentence content to be introduced (statutory requirement):	
Noun phrases expanded by the addition of modifying adjectives, nouns and preposition phrases (e.g. the teacher expanded to: the strict maths teacher with curly hair).	• Identify examples of noun phrases that have been expanded by the addition of modifying adjectives, nouns and preposition phrases and explain the effect on the reader. • Compose and rehearse sentences orally that include a modified noun phrase. • Use expanded noun phrases in writing.
Fronted adverbials (e.g. Later that day, I heard the bad news.).	• Identify examples of fronted adverbials in reading and explain their role in adding detail. • Use fronted adverbials appropriately across a range of sentences in own writing, *e.g. 'Later that morning, . . . ' or 'Faster than ever, . . . '* • Use a comma after fronted adverbials. ⇒ *Use of commas after fronted adverbials. (Punctuation, VG&P, Year 4)* ⇒ *Draft and write by . . . building a varied and rich vocabulary and an increasing range of sentence structures (English Appendix 2); (Composition, Year 3 /4)*
Text content to be introduced (statutory requirement):	

Use of paragraphs to organise ideas around a theme.	• Identify and discuss how paragraphs are used to group related material across a range of texts.
	• Identify within a paragraph:
	  ◦ key words;
	  ◦ main points;
	  ◦ important information.
	• Summarise, in own words, key themes and the main points of a paragraph.
	• Group linked information into paragraphs as a matter of routine, *e.g.*
	  ♦ *settings, characters and plot in narratives*
	  ♦ *when recording information under headings and sub-headings in non-fiction.*

Appropriate choice of pronoun or noun within and across sentences to aid cohesion and avoid repetition.	• Identify nouns and pronouns in reading. • Discuss how nouns and pronouns maintain flow and cohesion. • Use pronouns selectively and appropriately in own writing.

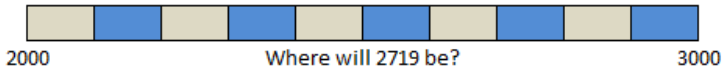
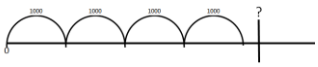
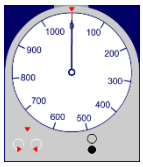
Y4 Steps 25-27	Vocabulary, Grammar and Punctuation Y4
Statement	**Descriptors**
Punctuation content to be introduced (statutory requirement):	
Use of inverted commas and other punctuation to indicate direct speech e.g. a comma after the reporting clause; end punctuation within inverted commas (e.g. The conductor shouted, "Sit down!").	• Identify direct speech in texts and discuss its purpose. • Punctuate direct speech accurately, including: ◦ inverted commas to enclose the direct speech and its final punctuation mark, *e.g. "Please remain seated," said the conductor.* ◦ commas after the reporting clause, *e.g. The conductor shouted, "Sit down!"* ◦ commas at the end of direct speech if the reporting clause is not at the beginning, *e.g. "Please remain seated," said the conductor, "or you will have to get off at the next stop."* • Use appropriate phrasing and expression, attending to punctuation cues when reading aloud. • *Proof-read for spelling and punctuation errors. (Composition, Year 3/4)*
Apostrophes to mark singular and plural possession (e.g. the girl's name, the girls' names).	• Identify examples of and the differences between the plural and the possessive ***s*** in reading, *e.g. girls, girl's.* • Understand the purpose of adding the plural and the possessive ***s*** in context. • Use the possessive apostrophe accurately in words with regular plurals, *e.g. girls', boys'.* • Use the possessive apostrophe in words with irregular plurals, *e.g. children's.* ⇒ *The grammatical difference between plural and possessive –s. (Word, VG&P Year 4).* ⇒ *Proof-read for spelling and punctuation errors. (Composition, Year 3/4)*
Use of commas after fronted adverbials.	• Identify examples of fronted adverbials in reading and explain their role in adding detail. • Use fronted adverbials appropriately across a range of sentences in own writing, *e.g. 'Later that morning, . . . ' or 'Faster than ever, . . . '* • Use a comma after fronted adverbials. • *Fronted adverbials . . . (VG&P, Year 4)* ⇒ *Proof-read for spelling and punctuation errors. (Composition, Year 3/4)*
Terminology for pupils content to be introduced (statutory requirement):	
Use and understand the grammatical terminology in English Appendix 2 (Year 4) accurately and appropriately when discussing writing and reading (determiner, pronoun, possessive pronoun, adverbial).	• Use accurate grammatical terminology when analysing text and explain the impact created. • Use accurate terminology when discussing how grammar has been used to create effect within writing.

Y4 Steps 25–27	Number Number and Place Value	◀Y3 Y5▶

Key Messages

- *Counting is a key activity and partially marked or blank number lines and number hoops should be used in oral work.*
- *Count in measures, fractions and decimals as well as in integers.*
- *Reinforce decimal place value at regular intervals with visual models.*
- *Pupils need to visualise problems and manipulate them with equipment. These activities provide models and images for later mental calculations.*
- *Give pupils opportunities to explain their reasoning.*
- *Wherever possible calculation should be taught in the context of real life problems.*
- *An understanding of pattern in number should be developed so that relationships can be seen between facts they already know and new ones.*
- *Vocabulary: thousands, ten thousand, hundred thousand, million, digit, one-, two-, three- or four-digit number, numeral, round to the nearest hundred, integer, positive, negative, above / below zero, minus, decimal fraction, decimal point, decimal place.*

Y4 Steps 25–27	Number and Place Value Y4
Statement	**Descriptors**
Count in multiples of 6, 7, 9, 25 and 1000.	Count in multiples of 6 • Count forwards and backwards in multiples of 6 from any multiple of 6. • Recognise digit patterns. Count in multiples of 7 • Count forwards and backwards in multiples of 7 from any multiple of 7. • Recognise digit patterns. Count in multiples of 9 • Count forwards and backwards in multiples of 9 from any multiple of 9. • Recognise digit patterns. Count in multiples of 25 • Count forwards and backwards in multiples of 25 from any multiple of 25. • Recognise digit patterns. • Count in measures and money contexts. Count in multiples of 1,000 • Count forwards and backwards in multiples of 1000 from any multiple of 1000. • Recognise digit patterns. • Count in measures contexts. • Count in steps of hundredths. ⇒ *Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred; and dividing tenths by ten. (Fractions, Year 4)*
Find 1000 more or less than a given number.	• Count orally from a given number increasing or decreasing by 1000 and explain the digit patterns including the impact of crossing boundaries when moving between 1,000s and 10,000s. • Respond correctly to questions, *e.g.* • *What is 1000 more than 67?* • *What is 1000 less than 32,000?*
Count backwards through 0 to include negative numbers.	• Count forwards and backwards in ones through the zero boundary and discuss what happens when zero is reached, *e.g. Use counting decisticks, counting hoops, etc.* • Count forwards and backwards in different step numbers of equal size through the zero boundary, *e.g. Starting at 10 count back in twos until -10 is reached.*
Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).	⇒ *Recognise and write decimal equivalents of any number of tenths or hundredths. (Number: Fractions, Year 4)* • Partition numbers into thousands, hundreds, tens and ones. • Understand zero as a place-holder in numbers, such as 2036, 4305, and 6007. • Know the value of a chosen digit in a given number, *e.g. in 1275 the 2 has a value of 200.*
Order and compare numbers beyond 1000.	• Order a set of whole numbers in ascending / descending order recognising the most significant digit in this process, *e.g. 2500, 900, 750, 5300, 2501.* • Compare numbers and quantities *by:* ◦ *using = < and > symbols,* e.g. ▢ < 3445 ▢ 5089; ◦ *placing numbers accurately on an un-numbered number line where only the start and end numbers are known.* • Describe the positional relationship between two numbers, *e.g. 6721 is larger than 7000 but smaller than 8000.* (This may be in the context of rounding activities.) • Order a selection of numbers / quantities greater than 1000 in ascending / descending order, *e.g. premier division football crowds.*

Y4 Steps 25–27	Number and Place Value Y4
Statement	**Descriptors**
Identify, represent and estimate numbers using different representations.	Using Apparatus and Visuals • Interpret information given in visual format, *such as on a partially marked number line.*  • Draw diagrams when recording or jotting, *e.g. Use a number to work out a calculation.* • Organise written responses in a systematic way, such as in a list or table, or ordered columns. Estimation It becomes difficult to provide large numbers to estimate in practical contexts but work using smaller numbers can be continued to consolidate work from Year 3. • Estimate a number of objects or pictures of objects using approximation language, *e.g. 'It's between one and two thousand.'* or *'It's about 1200.'* • Estimate the possible position of numbers on a blank number line / stick with any designated start and end numbers.  • Estimate and show quantities on scaled measuring apparatus. 
Round any number to the nearest 10, 100 or 1000.	• Round numbers to the nearest 10, understanding the rule that if the **units** are below 5 round down, and if they are above 5 round up. • Round numbers to the nearest 100, understanding the rule that if the **tens** are below 50 round down, and if they are above 50 round up. IMPORTANT: check that pupils do not have misconceptions about rounding to the nearest 100 that involves a number ending in 5. They need to understand that 345 rounds to 300 to the nearest 100 and not to 400 because they should be looking at both the tens and the units, not just the units. If they think that 5 rounds up from the previous descriptor they might round 345 up to the next 100 instead of down. • Round numbers to the nearest 1,000, understanding the rule that if the **hundreds** are below 500 round down, and if they are above 500 round up. • Use rounding in different contexts, such as rounding measurements to the nearest cm, m, km. • Round money to the nearest pound. ⇒ *Estimate, compare and calculate different measures. (Measurement: Year 4)*
Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	• Solve counting, sequences and prediction problems, *e.g.* ◆ *Steps of 50p in a sequence such as £0.50, £1.00, £1.50, £2.00.* ◆ *Steps of 25 cm in a sequence such as 1.25 m, 1.5 m, 1.75 m.* ◆ *Do all multiples of 6 end in 6, 2, 8, 4 and 0?* • Use and apply number and place value in word problems and investigation, *e.g.* ◆ 1275 = 1000 + ▢ + 70 + 5. ◆ *Play calculator zap. (Put a four-digit number into the calculator and remove each digit in turn with one calculation, recording what has been done.)* ⇒ *Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. (Number: Addition and Subtraction, Year 4)*
Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	Roman numerals can be viewed as a form of algebra. • Know values of the Roman numerals I = 1, V = 5, X = 10, L = 50, C = 100. • Write numbers in Roman numerals correctly, *e.g.* by labelling a clock face, using the rules: ◦ When a symbol appears **after a larger** symbol it is **added**, *e.g. VI = V + I = 5 + 1 = 6.* ◦ When a symbol appears **before a larger** symbol it is **subtracted**, *e.g. IX = X – I = 10 – 1 = 9.* ◦ Don't use the same symbol more than three times in a row. ◦ I is only used in front of V and X, *e.g. 99 is not* IC *(100 – 1).* • Convert numbers to Roman numerals by recognising the tens and ones components, *e.g. In* LXXXVIII *the* L *followed by the* X *is the tens number and anything afterwards is the ones.* • Know that the Romans did not have anything to represent zero and this made calculation very difficult, *e.g. try calculating LXXXVIII + XLIV in Roman numerals and comparing this with our numbers column addition.*

Y4 Steps 25–27	Number Addition and Subtraction	◀Y3 Y5▶

Key Messages

- *Encourage pupils to jot down steps to keep a record to help with a calculation.*
- *Pick up on common errors such as subtracting the wrong digit,* e.g. 92 – 38 = 66.
- *Give pupils regular opportunities to explain and compare calculation methods daily oral and mental work.*
- *Ensure that pupils understand partitioning as the basis for the development of written methods.*
- *Don't introduce formal written methods until a genuine understanding of calculation has been understood using informal methods, such as number lines and extended columnar methods. Delay until Year 5 if necessary.*
- *Link money notation to decimal place value, e.g. the 2 in £4·27 has value of 2 tenths of a pound or 20p.*
- *Use language of addition and subtraction: difference, decrease, increase, inverse, consecutive.*

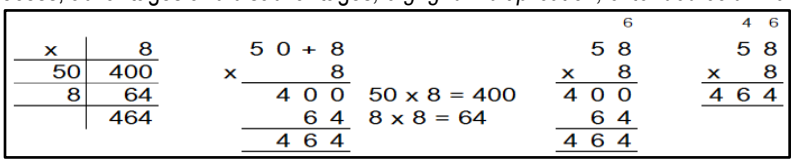
Y4 Steps 25–27	Addition and Subtraction Y4
Statement	**Descriptors**
Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.	• Select an appropriate calculation method, *e.g. Respond to the size of numbers / complexity of calculation, such as if an item costs £1·99 and change is required from £5 this should be done mentally.* Building Mental Strategies • Be confident with mental strategies from Year 3. • Derive quickly doubles of multiples of 10 up to 500, *e.g. 360 + 360.* (Also multiplication.) • Add and subtract multiples of 10, 100 and 1000 to two- and three-digit numbers, *e.g. 6.2 + 200 or 435 - 90.* Written Methods See Mathematics programmes of study: key stages 1 and 2: Mathematics Appendix 1 (formal methods) • Align numbers carefully in the correct place value columns. • Understand the value of each digit based on its column position, i.e., a 1 in the tens column is really 10. • Explain orally how a method of calculation works and demonstrate an understanding of the place value that underpins written methods. • Estimate the approximate range of where an answer will fall and use this to check for reasonableness. • Add numbers up to four digits accurately using a formal written columnar method. • Subtract numbers up to four digits accurately using a formal written columnar method. • Add two three-digit sums of money or measures, such as *£4·21 and £3·87* by: ◦ first adjusting them from pounds to pence. ◦ finally using decimal notation. • Subtract two three-digit sums of money or measures, such as *7·50 m and 2·84 m* by: ◦ first adjusting them from metres to centimetres. ◦ finally using decimal notation.
Estimate and use inverse operations to check answers to a calculation.	• Estimate answers by rounding and then finding and comparing the exact answer, *e.g. recognise that the answer to 367 + 185 is less than 400 + 200.* • Check subtraction calculations using the inverse operation of addition. • Check addition calculations using the inverse operation of subtraction. (Could be on a number line.)
Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	Problem Strategies • Select an appropriate calculation method, *e.g. use known facts to work out related facts, such as 49 + 37 is equivalent to 50 + 37 – 1 or £1.99 + £2.99 is £2 + £3 – 2p.* • Use notes, diagrams, organised tables and lists systematically to solve problems. • Adapt own method to become more efficient, such as in response to suggestions by others. • Identify which calculations need a written method and which can be done mentally. • Record and organise the stages of a problem neatly and systematically. Problem Solving • Solve place value problems. ⇒ *Solve number and practical problems . . . with increasingly large positive numbers. (Number and Place Value, Year 4)* ⇒ *Solve simple measure and money problems involving . . .decimals to two decimal places. (Number: Fractions, Year 4)* • Solve two-step word problems for quantities, amounts and measures, *e.g.* ♦ *For her party Alisha spent £2·88 on apples, £3·38 on bananas and £3·76 on oranges. Will a £10 note cover the cost?* • Solve puzzles and undertake investigations involving addition and subtraction, *e.g.* ♦ *Use numbers 37, 52, 77 and 87 to satisfy statements such as $x - y = 35$, or $x + y = 114$.* ♦ *Predict the next term in a sequence such as £1·37, £1·47, £1·57.* ♦ *How many different ways can you complete 7□□+ □8 = 1□□□ or □□□ – 47 = □9?* ♦ *Which numbers up to 50 they can make by adding three consecutive numbers?*

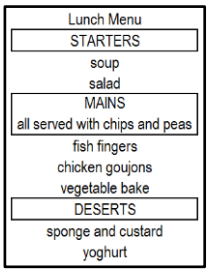
Y4 Steps 25–27	Number Multiplication and Division	◀Y3 Y5▶

Key Messages

- *Multiplication and division facts should be rehearsed regularly in mental and oral work.*
- *Understanding must precede formal written methods. Formal recording of multiplication should be delayed until the grid method and the extended column method are thoroughly understood. If necessary it could be a Year 5 activity.*
- *Set calculations in the context of real-life / word problems wherever possible.*
- *Associate division with finding a fraction.*
- *Use language of multiplication and division: multiple, factor, product factor, quotient, divisible, inverse.*

Y4 Steps 25–27	Multiplication and Division Y4
Statement	**Descriptors**
Recall multiplication and division facts for multiplication tables up to 12 x 12.	Steps to knowing the 6× table: • Recite the times table fluently forwards and backwards. • Write the times tables in ascending and descending order. • Know by heart the multiplication and division facts. • Use the 6× table facts confidently in calculations. Steps to knowing 9× table: • Recite the times table fluently forwards and backwards. • Write the times tables in ascending and descending order. • Know by heart the multiplication and division facts. • Use the 9× table facts confidently in calculations. Steps to knowing 7× table: • Recite the times table fluently forwards and backwards. • Write the times tables in ascending and descending order. • Know by heart the multiplication and division facts. • Use the 7× table facts confidently in calculations. Steps to knowing the 11× table: • Recite the times table fluently forwards and backwards. • Write the times tables in ascending and descending order. • Know by heart the multiplication and division facts. • Use the 11× table facts confidently in calculations. Steps to knowing the 12× table: • Recite the times table fluently forwards and backwards. • Write the times tables in ascending and descending order. • Know by heart the multiplication and division facts. • Use the 12× table facts confidently in calculations. • Immediately recall 2, 3, 4, 5, 8 and 10 multiplication and division facts (from Year 3). • Recognise the relationship between the 3×, 6× and 12× tables and use doubling and halving strategies to derive answers. • Know some divisibility rules and use them to check, *e.g.* ◆ *If the sum of the digits is divisible by 3 then the number is divisible by 3, e.g. 660.* ◆ *If the sum of the digits is divisible by 9 then the number is divisible by 9, e.g. 351.* ⇒ *Recognise and show, using diagrams, families of common* equivalent fractions. *(Number: Fractions, Year 4)*
Use place value, known and derived facts to multiply and divide mentally:	
use place value, known and derived facts to multiply and divide mentally;	• Double and halve multiples of 10 and 100, *e.g. Double 60 or 500, halve 80 or 300.* • Double two-digit numbers using the most significant digit strategy and find corresponding halves, i.e., double the tens, double the ones, and add them together. • Extend multiplication and division tables facts, *e.g. 3 × 9 to 3 × 900 or 24 ÷ 6 to 240 ÷ 6.* • Estimate the approximate outcome of a multiplication or division calculation, *e.g. 38 × 9 is a bit less than 40 × 10 = 400.* • Check answers for sense against estimations
Including multiplying by 0 and 1	• Know when a number is multiplied by 0 the answer is always 0. • Know when a number is multiplied by 1, the answer is the same as the number being multiplied.
Including dividing by 1;	• Know when a number is divided by 1, the answer is the same as the number being divided.
Including multiplying together three numbers.	⇒ *Recognise and use . . . commutativity in mental calculations. (Number: Multiplication and Division, Year 4)* • Know that multiplication can be done in any order (commutativity) and use this to simplify multiplication calculations where there are three or more numbers, i.e.: ◦ Place together digits that make a multiple of 10, *e.g. 6 × 9 × 5 becoming 6 × 5 × 9 so that 30 can easily be multiplied by 9.* ◦ Re-order so that known 12 × 12 table facts can be applied, *e.g. 4 × 9 × 3 is easier when arranged as 4 × 3 × 9.* • Multiply three numbers together using appropriate strategies for the size of the numbers involved.

Y4 Steps 25–27	Multiplication and Division Y4
Statement	**Descriptors**
Use place value, known and derived facts to multiply and divide mentally, including:	
use place value, known and derived facts to multiply and divide mentally;	• Double and halve multiples of 10 and 100, *e.g. Double 60 or 500, halve 80 or 300.* • Double two-digit numbers using the most significant digit strategy and find corresponding halves, i.e., double the tens, double the ones, and add them together. • Extend multiplication and division tables facts, *e.g. 3 × 9 to 3 × 900 or 24 ÷ 6 to 240 ÷ 6.* • Estimate the approximate outcome of a multiplication or division calculation, *e.g. 38 × 9 is a bit less than 40 × 10 = 400.* • Check answers for sense against estimations
multiplying by 0 and 1	• Know when a number is multiplied by 0 the answer is always 0. • Know when a number is multiplied by 1, the answer is the same as the number being multiplied.
dividing by 1;	• Know when a number is divided by 1, the answer is the same as the number being divided.
multiplying together three numbers.	⇒ *Recognise and use . . . commutativity in mental calculations. (Number: Multiplication and Division, Year 4)* • Know that multiplication can be done in any order (commutativity) and use this to simplify multiplication calculations where there are three or more numbers, i.e.: ◦ Place together digits that make a multiple of 10, *e.g. 6 × 9 × 5 becoming 6 × 5 × 9 so that 30 can easily be multiplied by 9.* ◦ Re-order so that known 12 × 12 table facts can be applied, *e.g. 4 × 9 × 3 is easier when arranged as 4 × 3 × 9.* • Multiply three numbers together using appropriate strategies for the size of the numbers involved.
Recognise and use factor pairs and commutativity in mental calculations.	Mental calculations can include jottings. ⇒ *Use place value, known and derived facts to multiply and divide mentally, (Number: Number and Place Value, Year 4)* • Know that multiplication can be done in any order (commutativity). • Break down or combine numbers into units that are easy to work with, including factor pairs, using: ◦ the commutative law for multiplication, *e.g. 5 × 9 can be worked out as 9 × 5;* ◦ the associative law for multiplication, *e.g. (5 × 9) × 4 can be grouped and calculated differently as (5 × 4) × 9;* ◦ the distributive law of multiplication, *e.g. 5 × 18 = 5 × 2 × 9;* ◦ adjustment by spotting 'nearly' numbers, *e.g. 6 × 19 is almost 6 × 20.* • Use factor pairs and other strategies (commutativity, distributivity) when multiplying more difficult numbers together, *e.g.* ◆ *5 × 36 = 5 × 9 × 4 = (5 × 4) × 9 = 20 × 9 = 180.* ◆ *5 × 36 = (30 × 5) + (6 × 5) = 150 + 30 = 180.*
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.	See Mathematics programmes of study: key stages 1 and 2: Mathematics Appendix 1 (formal methods). • Compare methods of multiplication and demonstrate understanding of place value of the digits, the process, advantages and disadvantages, *e.g. grid multiplication, extended columnar multiplication.*  • Accurately record the outcome of multiplying a two-digit number by a one-digit number. • Accurately record the outcome of multiplying a three-digit number by a one-digit number. • Estimate and check answers for sense. • Use formal written methods for multiplication of TU × U. • Use formal written methods for multiplication of HTU × U. (See key messages.)

Y4 Steps 25–27	Multiplication and Division Y4
Statement	**Descriptors**
Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	• Solve multiplication word problems including those that require distributive law to solve them, *e.g.* ◆ *Chews are 7p each. How much would it cost for 45 chews?* ◆ *Janet started swimming lessons and was told it cost £3 a day. After 9 weeks of going every day she decided she didn't want to go any more. How much did she have to pay?* ◆ *If 85 straws that are 8 cm long each are laid end to end how far will they reach?* • Complete positive integer scaling problems, *e.g.* ◆ *To make one cake I use 3 eggs, 8 cups full of flour, 8 cups of sugar and 1 pack of butter. How much of each ingredient would I need 3 for cakes?* ◆ *A square has sides of 5 cm. Construct a square that is 5 times smaller / 3 times bigger, etc.* ◆ *A giant is 100 times bigger than you. How wide is the giant's hand span?* • Complete correspondence (relationship) problems, *e.g.* ◆ *The lunch menu has 2 starters, 3 main courses and 2 sweets. On how many days could I have a different menu if I had one of each course each time?* • Explain how a problem has been solved. • Solve number properties problems and puzzles, *e.g.* ◆ *Find a pair of numbers with a sum of 11 and a product of 30.* ◆ *1, 2, 4, 8, □, □, □. What is the rule?* ◆ *Make up your own sequence with a rule for a friend to solve.*  <u>Division Problems</u> There are no specific division problem solving objectives for Year 4: the following are suggestions only. ◆ *Use the distributive law to partition a calculation, e.g. 72 ÷ 6 = (60 ÷ 6) + (12 ÷ 6).* ◆ *Make decisions about rounding up and rounding down remainders after division according to the context,* e.g. A box holds 6 cakes. How many full boxes of cakes can be made if there are 70 cakes? ◆ *Tell me some division questions that have the answer 12. How did you work this out?* • *Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. (Number: Fractions, Year 4)*

Y4 Steps 25–27	Number Fractions Including Decimals	◀Y3 Y5▶

Key Messages

- *Understanding equivalence between tenths and hundredths is very important.*
- *Reinforce that in place value each column gets ten times smaller when it moves to the right and ten times bigger as it moves to the left.*
- *Don't articulate multiplying by 10 as 'adding a 0'.*
- *Describe the value of decimal digits in both decimals and fractions, e.g. 0·02 and 2/100.*
- *Count in fractions, especially in tenths and hundredths, including decimals, i.e., 1/10, 2/10 and 0·1, 0·2.*
- *Fractions work still needs to be underpinned with practical activities and equipment.*
- *Don't routinely set fractions in the context of money as this is always represented as 2 decimal places.*
- *Use language of fractions, such as: hundredth, decimal, decimal fraction, decimal point, decimal place, etc.*

Y4 Steps 25–27	Fractions Including Decimals Y4
Statement	**Descriptors**

Recognise and show, using diagrams, families of common equivalent fractions.	Fractions activities will still be largely practical.
	Work on fractions with small denominators (2, 3, 5) which should have been covered in Year 3.
	For each fraction family studied (could be matched to multiplication tables work):
	• Use apparatus to generate equivalent fractions, *e.g. 1/4, 2/8 or 2/3, 4/6.*
	• Recognise patterns in the numerators and denominators of equivalent fractions, *e.g. if the fraction family is 3 the denominators go up or down in the 3x table.*
	• Know which fraction is the first one in the family (lowest numerator and denominator possible), *e.g. 5/25 is from the fifths (1/5) family.*
	• Solve equivalent fraction problems, *e.g.*
	  ◆ *Complete a sequence of equivalent fractions / find the missing fraction.*
	  ◆ *Find / match equivalent fractions families in a set of cards.*
	⇒ *Recall multiplication and division facts for multiplication tables up to 12 x 12. Number: Multiplication and Division, Year 4)*

Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred; and dividing tenths by ten.	Check that understanding of tenths is secure from Year 3 objectives. • Count forwards and backwards in hundredths (1/100 and 0·01) between 0 and 1 and then beyond 1, *e.g. counting sticks, number lines or number hoops.* • Understand that when counting in hundredths, 100 hundredths is equivalent to 1, 200 hundredths is equivalent to 2, etc. • Understand that when one is divided into 100 equal parts each part is 1/100 and can also be written as 0·01, *e.g. base 10 apparatus, number line.* • Know how many hundredths there are in any number with up to two decimal places, *e.g.* 0·05 = 5/100, 0·37 = 37/100, 0·5 = 50/100, 1·07 = 107/100. • Understand that when a tenth is divided into 10 equal parts each part is 1/100, *e.g. On a number line marked 0 to 1, one tenth is the same as ten hundredths and that fifty-seven hundredths is the same as five tenths and seven hundredths.* • Partition and combine decimal numbers to two places, *e.g. Use decimal arrow cards to establish that 4·58 = 4 + 0·5 + 0·08.*  • Understand the relationship between decimals and fractions, *e.g. Sort a set of mixed fraction and decimal cards into >, < or = to 0·5.* ⇒ *Count in multiples of 6, 7, 9, 25 and 1000. (Place Value, Year 4)*

Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.	• Relate division to fractions, *e.g. 1/3 of 24 is equivalent to 24 ÷ 3 or 24/3 or 8.*
	• Know that to find a unit fraction of an amount, the amount is divided by the denominator, *e.g. 1/8 of 64 is 64 objects equally shared between 8 sets or 64 ÷ 8.*
	• Understand the order of calculation for finding non-unit fractions of quantities, i.e., find the unit fraction of a quantity first by division then find the non-unit fraction by multiplication of the unit fraction quantity.
	• Solve fraction problems, *e.g.*
	  ◆ *Put these in ascending order: 2/9 of 18, 6/7 of 49, 5/8 of 24.*
	  ◆ *2/3 or a number is 12. What is the number?'*
	  ◆ *Investigate a non-unit fraction, recording in pictures, diagrams, words and calculations what you know about it,* e.g. 3/4, 2/3.
	  ◆ *Maisie eats 2/3 of her 36 sweets and Aaron eats 4/5 of his 20 sweets. How many have they eaten altogether?*
	⇒ *Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. (Number: Multiplication and Division, Year 4)*

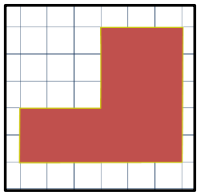
Y4 Steps 25–27	**Fractions Including Decimals Y4**
Statement	**Descriptors**
Add and subtract fractions with the same denominator.	Pupils may need to use practical apparatus and diagrams throughout this objective. • Add and subtract fractions with the same denominator, *e.g. Sam and Alisha both eat ⅝ of their own pizza, how much have they eaten altogether?* • Record outcomes of practical work with fractions in written equations. • Know that to add or subtract a fraction with the same denominator the numerator changes but the denominator does not. • Use inverse operations to check answers. • Add and subtract fractions with the same denominator in practical contexts, *e.g.* ◆ *Alex eats 1½ pizzas and John eats ½ a pizza. How many pizzas are eaten?* ◆ *Ian buys a 1 litre bottle of pop. He drinks ¼ of the bottle and spills ¼ of the bottle. How many millilitres are left?*
Recognise and write decimal equivalents of any number of tenths or hundredths.	Also use fractional notation if appropriate. ⇒ *Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). (Number: Humber and Place Value, Year 4)* • Write decimal equivalents for tenths, *e.g.* ◆ *6 tenths can be written as 0.6 (place holding zero).* ◆ *1/10 of 4 cm is 0·4 cm.* ◆ *0·3 m is 3/10 of 1 m.* ◆ *57/10 = 5·7.* • Know that fractions with a denominator of 10 can be converted to their decimal equivalent by placing the digits of the numerator in the tenths column, using number lines, etc., to support this, *e.g. 3/10 = 0·3.* • Write decimal equivalents for hundredths, *e.g.* ◆ *33 hundredths can be written as 33/100 or 0·33.* ◆ *5 hundredths can be written as 5/100 or 0·05 (place holding zero).* ◆ *1/100 of 4 cm is 0·04 cm.* ◆ *0·14 m is 14/100 of 1 m.* • Know that fractions with a denominator of 100 can be converted to their decimal equivalent by placing the digits of the numerator in the appropriate column, using number lines, etc., to support this, *e.g. 7/100 = 0·07, 13/100 = 0·13.* • Write any number expressed as a number and fraction with tenths or hundredths as a decimal number, *e.g. 547/100 = 5·47 or 547/10 = 54·7.* • Understand the relationship between equivalent fractions and decimals, *e.g. Sort a set of cards into equivalent fraction families, such as 0.1, 1/10 2/20 70/100 as one family.*
Recognise and write decimal equivalents to ¼, ½, ¾.	• Count forwards and backwards in 25s. • Count forwards and backwards in 0·25s, recognising that we say 'nought point two five' and not 'nought point twenty-five'. • Count in quarters, initially using improper fractions (0, ¼, 2/4, ¾, 4/4, 5/4, …) and then changing these to mixed numbers (0, ¼, 2/4, ¾, 1, 1¼, …). • Visualise counting in 0·25s and ¼s together and know equivalences, *e.g. Show them on the same number line.* • Recall that ¼ is 0·25, ½ is 0·5 and ¾ is 0·75 and relate this to measures, *e.g. ¾ of a metre is 0·75 m.*

Y4 Steps 25–27	**Fractions Including Decimals Y4**
Statement	**Descriptors**
Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.	The initial use of calculators could support this objective. Although this objective is only for division, it makes sense to do multiplication of decimals by 10 and 100 alongside this and use inverse operations to check answers. • Know the place value of each digit in any number up to 1,000, including those with up to two decimal places, *e.g. 'What does the 6 represent in 1·65 m?'* • Know that when dividing by 10 the digits all move one place to the right (and when multiplying by 10 they all move one place to the left), *e.g.* ◆ *73 ÷ 10 = 7·3.* ◆ *6 ÷ 10 = 0·6.* • Know when 0 is used as a place holder. • Know that when dividing by 100 the digits all move two places to the right (and when multiplying by 100 they all move two places to the left), *e.g.* • *49 ÷ 100 = 0·49.* • *6 ÷ 100 = 0·06.* • Apply division of 10 and 100 in context, *e.g.* ◆ *What will the next number be in this sequence — 23·6, 2·36, ▢?* ◆ *Find the missing number in 42 ÷ ▢ = 4·2.*
Round decimals with one decimal place to the nearest whole number.	• Be able to describe how to find or place decimals to one decimal place on a number line. • Be able to say, first with visual support then without, which is the nearest whole number to a number with one decimal place on a number line. • Know, when rounding numbers with one decimal place, four-tenths or less rounds to the previous integer and five-tenths or more to the next integer. • Use rounding of numbers to estimate answers, *e.g. 56·4 + 33·7 is approximately 56 + 34.*
Compare numbers with the same number of decimal places up to two decimal places.	• Order a series of one place decimal numbers by comparing whole numbers and tenths in that order, *e.g. in the context of measures.* • Order a series of two place decimal numbers by comparing whole numbers, tenths and hundredths in that order, *e.g. in the context of measures or money.* • Use < > and = to show inequalities and equivalence between decimal numbers, *e.g. Using numbers with at least one decimal place make this statement true ▢ < ▢ > ▢.*
Solve simple measure and money problems involving fractions and decimals to two decimal places.	• Solve money problems with fractions, *e.g. Max has £48. He spends ¾ of it. How much has he got left?* (Pupils might realise that they have ¼ left from knowing that ¾ and ¼ totals 1.) • Solve money problems with decimals, *e.g. Jim has £5 and buys an assortment of sweets for £2·65. How much change does he receive?* • Solve measures / quantities problems with fractions, *e.g. Order measures that have decimal places, e.g. ¾ of 1 m, ½ of 1·4 m and ⅗ of 1 m.* • Solve measures / quantities problems with decimals, *e.g. A ribbon is 18 cm long. If it was divided into 10 equal parts how long would each piece be?* ⇒ *Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. (Number: Addition and Subtraction, Year 4)*

Y4 Steps 25–27	Measurement	◀Y3 Y5▶

Key Messages

- *Set calculations in the context of real-life / word problems wherever possible.*
- *It is vital that pupils have opportunities to read and measure with scales with different divisions and those where all divisions are not marked.*
- *Ensure that children know the relationships between standard units of metric measure and units of time and can make simple conversions.*
- *Provide opportunities for measuring and comparing in data handling / statistics and apply across the curriculum.*
- *Use measurement language: breadth, edge, perimeter, measuring cylinder, square centimetre, leap year, millennium, date of birth.*

Y4 Steps 25–27	Measurement Y4
Statement	**Descriptors**
Convert between different units of measure [e.g. kilometre to metre; hour to minute].	• Understand the meaning of *kilo* (one thousand), *centi* (one hundredth) and *milli* (one thousandth) and use this to work out conversions between units, *e.g. 'How many metres are in 8 kilometres?'* • Convert between units in each area of measure, *e.g.* ♦ *How many minutes in 1½ hours?* ♦ *Write 5,678 mℓ in ℓ.* ♦ *Which is the most: a large 0·145 kg of chocolate or 5 small bars that are 30 g each?* ♦ *The length of one side of a square in 40 cm. What is the perimeter in metres?*
Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	Rectilinear shapes are where each interior angle is either 90° or 270°. Work in Year 5 uses the language of 'composite' rectilinear shapes so it is suggested that here a rectilinear shape is either a rectangle or a maximum of two rectangles combined into one shape. • Be able to explain what perimeter means. • Measure the perimeter of large and small rectilinear areas / objects (including squares and rectangles), *e.g. the flower bed, a reading book, a shape drawn on squared or plain paper.* • Understand the relationship between the four sides of a rectangle and the perimeter of (2 × width) + (2 × length), *e.g. Children measure and systematically record the lengths of sides and the perimeter of several rectangles in a table.* • Calculate the perimeter of a square from one side length in m / cm. • Calculate the perimeter of rectangles from two known measurements in m and cm. • Measure the perimeter of rectilinear shapes, such as an object, a shape on grid paper, a shape on plain paper. • Calculate the perimeter of rectilinear figures, not necessarily drawn to scale, from some known measurements in m / cm. • Solve perimeter problems, *e.g.* ♦ *The perimeter of the quadrangle is 40 m. What could the lengths of its sides be assuming each side is in whole metres only?* ♦ *Draw different rectilinear figures with a perimeter of . . ..* 
Find the area of rectilinear shapes by counting squares.	• Understand the terms centimetres squared and metres squared (not necessarily notation cm^2 or m^2). • Estimate and find the area of rectilinear shapes, including rectangles, drawn on cm^2 paper by counting squares. • Find the approximate area of larger surfaces, *e.g. Use a one metre squared construction, such as one made by binding 4 metre sticks together.*

Y4 Steps 25–27	Measurement Y4
Statement	**Descriptors**
Estimate, compare and calculate different measures: including money in pounds and pence.	⇒ *Round any number to the nearest 10, 100 or 1000. (Number and Place Value, Uear 4)* • Round measures in context, *e.g.* ◆ *The weight of the tin of biscuits is approximately 500 g.* ◆ *The length of the playground is approximately 50 m.* • Read a range of partly numbered scales to the nearest division by calculating each interval. • Record measurements using decimal notation and relating the whole number, tenths, hundredths and thousandths to parts of the measure being used. • Compare two or more measures, *e.g.* ◆ *Which has the biggest area, the classroom or the library area?* ◆ *Which of the jars of liquid is the warmest, the syrup or the chocolate?* ◆ *Put the objects in the box in order by mass.* ◆ *Pupils make a line in height order. Make comparisons, such as Half the class are taller than 1·3 m.* • Estimate a more challenging range of measures and check the outcome, *e.g.* ◆ *How far do you think you threw the beanbag?* • Solve measurement problems, *e.g.* ◆ *Who has the longest stride in your group?* ◆ *What is the capacity of the flower vase? Find something else that will hold a similar amount?* ◆ *The maximum weight load of a bag before it might break is 2 kg. Which pair of objects could you fit safely into the bag and be sure it would not break?* ◆ *This is one face of a Rubik's cube? How many individual cubes do you think you would need to make the whole cube? How did you work it out?*  • Solve temperature problems, *e.g.* ◆ *Compare indoor and outdoor temperatures.* ◆ *Find changes in temperature over time.* • Use calculation strategies to solve one- and two-step money problems, *e.g.* ◆ *Buy more than one item, totalling, calculating change from £10;* ◆ *Estimate how much money is in a set of coins;* ◆ *Estimate prices to the nearest £1, £10, £100,* e.g. 'Approximately how much would you need to by 2 bottles of coke and a bag of crisps?' ◆ *Who has the most?* ◆ *How much more / less does Jim have than Robbie?*
Read, write and convert time between analogue and digital 12- and 24-hour clocks.	• Relate analogue time to 12-hour digital time, *e.g. make number pairs with a total of 60 and discuss equivalences such as 2:46, 46 minutes past 2 and 14 minutes to 3.* • Use both analogue and digital clocks alongside each other to illustrate the same time, *e.g. Use a TV schedule to find out the starting time of a programme and showing this on a clock face.* • Clarify times by using a.m. or p.m. notation where necessary in written and oral work.
Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	• Understand that the units of time are not decimal, so care needs to be taken with time calculations. • Recall the relationships between seconds, minutes, hours, days, weeks, months and years. • Know further time relationships, including: ◦ weeks to months and years; ◦ months to years; ◦ days in a year. • Use calendars to work out time intervals that cross a month boundary. • Use calendars to work out time intervals that cross a year boundary. • Solve problems, *e.g.* ◆ *The cake went in the oven at 1:35. It cooked for 40 minutes. What time did it come out?* ◆ *Use timetables and TV guides.* ◆ *Work out how many days are remaining to the next holiday.*

Y4 Steps 25–27	Geometry Properties of Shapes	◀Y3 Y5▶

Key Messages

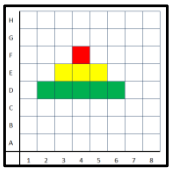
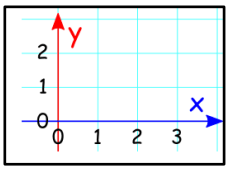
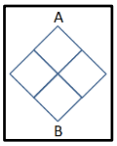
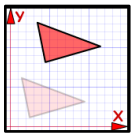
- *Make sure shape and space activities are included in oral and mental starters, including the development of visualisation skills.*
- *Make sure children have opportunities to draw and manipulate shapes in a variety of different ways.*
- *Children should see different 2-D representations to allow them to explore changes in the orientation.*
- *Language of shape:*
  Shape Properties: regular / irregular; convex / concave; parallel; perpendicular and opposite;
  2 D Shapes: 2 D, two dimensional, equilateral triangle, isosceles triangle, scalene triangle, parallelogram, rhombus, trapezoid, kite, quadrilateral, heptagon and polygon;
  3 D Shapes: 3 D, three dimensional, polyhedron, tetrahedron, base, square-based, open, closed, net, cylindrical, and spherical.

Y4 Steps 25–27	Properties of Shapes Y4
Statement	**Descriptors**
Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.	• Name and sort four-sided polygons by their properties, including rectangles, squares, parallelograms, rhombuses, trapezoids, kites, quadrilaterals, *e.g. Select those with at least one pair of parallel sides, naming each and recognising that some shapes can have more than one name,* e.g. a square is a rectangle. • Name and sort triangles by their properties, including, equilateral, isosceles, right angled and scalene triangles, *e.g. Create as many different triangles as possible using pencil and paper, geoboards or ICT and sort them.* • Sort 2-D and 3-Dshapes, using criteria such as regular / irregular, parallel lines, number of edges, concave / convex, shapes of faces, number of vertices. • Record classifications and justify reasoning, *e.g. Venn and Carroll diagrams.* • Solve shape problems, *e.g.* ♦ *Draw / sketch and name polygons and some 3-D shapes,* e.g. on isometric paper. ♦ *Investigate tetrahedrons,* e.g. counting faces, edges and vertices, by unfolding a 3-D model in as many different ways as possible. ♦ *How many different triangles / quadrilaterals can be seen in a picture?* ♦ *Starting with a rectangular sheet of paper, fold it one or more times and then make one straight cut to make a new shape such as a hexagon.*
Identify acute and obtuse angles and compare and order angles up to two right angles by size.	• Recognise and use the correct terminology for angles that are acute, obtuse or a right angle. • Estimate, order and check a set of angles (each less than 180^0). • Solve angle problems, *e.g. Find the maximum number of right angles that could be in a triangle, a quadrilateral, a pentagon, etc.*
Identify lines of symmetry in 2-D shapes presented in different orientations.	• Identify one or more lines of symmetry of shapes in different orientations. • Solve symmetry problems, *e.g.* ♦ *The number of lines of symmetry in a regular polygon is equal to the number of sides of the polygon. Is this true?* ♦ *Draw a hexagon with no lines / one line / two lines of symmetry.*
Complete a simple symmetric figure with respect to a specific line of symmetry.	• Complete patterns and reflect simple shapes along a vertical, horizontal or other line of symmetry using a variety of approaches, such as counting squares, a mirror, tracing paper, ICT. Pupils may rotate their drawings to make the completion of the shape easier. • Reflect shapes where not all the sides of the shape are parallel or perpendicular to the mirror line but the mirror line is parallel to one of the axes (on squared paper). • Solve symmetry problems, *e.g.* ♦ *How many different symmetrical patterns can you make with any or all of these shapes?* ♦ *Make as many different shapes as possible with 5 squares joined together (pentominoes). Draw the reflective lines of symmetry on those that have them.*

Y4 Steps 25–27	Geometry Position and Direction	◀Y2 Y5▶

Key Messages

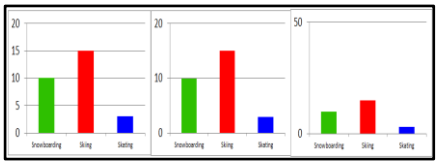
- *Co-ordinate grids are used for the first time in Year 4 with no previous mention of lettered and numbered grids. Some work with such grids might be helpful before embarking on co-ordinates.*
- *Compass points are not mentioned in any of the objectives but can be associated with describing direction and recognising the relationship with right angles.*
- *Objects can be placed on co-ordinate grids at first before drawings are made.*
- *Use position and direction language: map, plan, plot, ascend, descend, grid, row, column, origin, co-ordinates, quadrant, rotate, translate, horizontal, vertical, degree, ruler, set square, compasses, etc.*

Y4 Steps 25–27	Position and Direction Y4
Statement	**Descriptors**
Describe positions on a 2-D grid as co-ordinates in the first quadrant.	Lettered and Numbered Grids • Identify / name the horizontal axis (x) and the vertical axis (y). • Place objects in a numbered and lettered grid, *e.g. Put the horse in square A5.* • Follow instructions to draw / colour in squares on a grid with the rows labelled A, B, C, etc., and columns labelled 1, 2, 3, etc., *e.g. play 'Battleships'.* • Explain the position of objects on a grid using letters and numbers, *e.g. give instructions for a friend to draw an identical picture to their own on a grid.*  Co-ordinate Grids • Know the functions and names of each element of the co-ordinate grid including: ◦ x-axis and y-axis; ◦ axis labels; ◦ scaling in equal divisions and on the lines, not in the spaces; ◦ first quadrant.  • Know that counting of scales starts from the origin (where the x and y axes cross). • Be able to give an xy co-ordinate for a point on a grid. • Be able to explain why (4, 1) is not the same as (1, 4). • Solve grid problems, *e.g.* ♦ *On a grid, can you plot a triangle with a line of symmetry that does not have a right angle? Give the co-ordinates to a friend to check.* ♦ *On a grid, join points where the lines cross to make a pentagon that has a right angle. Use a ruler. Write the co-ordinates for a friend to repeat your shape.* ♦ *Give routes for moving on a 'diagonal grid' (see opposite),* e.g. Facing NW make a 90^0 turn anti–clockwise, etc.  This could be linked to the 8 points of the compass and 45^0 angles.
Describe movements between positions as translations of a given unit to the left/right and up/down.	There is no requirement for pupils to **draw** translated shapes in Year 4. • Know that the term 'translate' means movement and could be up or down, left or right but the shape is not changed in any other way. • Understand that there are potentially two moves to translate a shape, but a shape might have only made one of these translations, i.e., a horizontal move and / or a vertical move.  • From seeing two identical shapes on a co-ordinate grid, explain the translation, including for shapes that are not parallel or perpendicular to the axis.
Plot specified points and draw sides to complete a given polygon.	ICT can be used in some activities. • Draw a simple shape from written co-ordinate instructions, *e.g. square or rectangle.* • Write the co-ordinates of a simple shape for a friend to construct, *e.g. triangle.* • Draw and write instructions for more complex polygons / pictures. • Apply knowledge of co-ordinates to solve problems, *e.g. Given some of the vertices of squares or rectangles, plot the missing points, recognising that there may be more than one solution to the problem.*

Y4 Steps 25–27	Statistics	◀Y3 Y5▶

Key Messages

- *Follow through the data-handling cycle: pose a question and answer it by collecting data, organising, representing and interpreting it.*
- *Continuous data is now introduced in Year 4. This could be line graphs related to time where every point has a meaning.*
- *Use statistics language: survey, questionnaire, data, discrete, continuous, line graph, frequency.*

Y4 Steps 25–27	Statistics Y4
Statement	**Descriptors**
Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	Interpret and present information in the following formats over a period of time: • Pictograms for discrete data to compare between different groups, including those with part scaled pictures, such as ½ a Smartie (scaled in 2s), ⅖ of an ice cream bar (scaled in 5s) or ⁴⁄₁₀ of a letter (scaled in 10s). • Block graphs, both horizontal (bar) and vertical (column), for discrete data to compare between different groups. • Two-way frequency tables to look up data that has many items and outcomes. • Line graphs (time graphs), for continuous data comparing changes over the same period of time for more than one group. ⇒ *Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. (Statistics, Year 4)* • Use a greater range of scales, *e.g. 2, 5, 10, 20, 50.* • Understand the effect of changing the scale to different step sizes, how this impacts on bar heights and ease of interpretation, *e.g. Type some data into Excel, make a bar chart and experiment with changing the y-axis scale major unit values.*  • Consistently use titles, axis labels, scales and keys, where required, in all forms of data presentation. • Select an appropriate chart to present data and explain why choices have been made. • Draw conclusions based on statistical investigations; *e.g. 'There always seem to be more yellow Smarties than any other colour. We've investigated 6 tubes and there were more yellow in every one.'* Discrete data (data that is counted) • Interpret discrete data by asking and answering questions; *e.g.* ◆ *Which two winter sports are the most popular?* ◆ *How many letters were delivered from Monday to Thursday?* • Present and interpret discrete data in a range of contexts and presentations; *e.g. Investigate the colours and / or shapes in a mixed packet of balloons and answer questions such as How many packets might you have to buy to get 10 long blue balloons?* Continuous data (data that is measured) • Interpret continuous data on a time graph by asking and answering questions; *e.g. Find the temperature at different times of day, including those that are not exactly on a scale division on a line chart.* • Draw a line / use a ruler on line graphs to make it easier to read information on the x- or y-axis. • Present and interpret continuous data in a range of contexts as line / time graphs; *e.g.* ◆ *Measure and record the height of a sunflower at equal time intervals over time and make a line graph with the measurements. Answer questions and draw conclusions.* ◆ *Answer questions such as Who takes the longest to get home from school?*
Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	• Solve problems, including those of comparison, sum and difference, presented in different data formats, including: ○ Pictograms; *e.g. 'Is it true that there are 8 more yellow Smarties than brown ones in every tube?'* ○ Block graphs; *e.g. 'Which is the busiest hour of the day for traffic outside school?'* ○ Lists; *e.g. Use a price list to work out differences, totals and change.* ○ Two-way frequency tables; *e.g. Use a bus schedule to find which journey from two specified journeys takes the longest.* ○ Line graphs; *e.g. Plot the temperature of a cooling liquid at periodic intervals and find the difference in temperature at 10:00 a.m. and 2:00 p.m.* ⇒ *Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Statistics, Year 4)*

Year 5: Steps 28-30

Y5/6	Steps 28–30	Reading Word Reading	◀Y3/4
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*			

Y5/6	Steps 28–33	Word Reading Y5/6
Statement		**Descriptors**
Apply their growing knowledge of root words, prefixes and suffixes (etymology and morphology) as listed in English Appendix 1, both to read aloud and to understand the meaning of new words they meet.		See English Appendix 1 and 2 (Y5/Y6) for root words, prefixes and suffixes. Content within this area of learning may be determined by schools' progression mapping. • Read most unfamiliar words with increasing automaticity. • Identify root words in reading and apply their understanding of how prefixes and suffixes affect meaning, including: ◦ prefixes: dis, de, mis, over and re, such as: ◊ *dis- disown;* ◊ *de- demist* ◊ *mis- misbehave;* ◊ *over- overcook;* ◊ *re- recycle;* ◦ suffixes, ate, ise, ify ,able, ible, such as: ◊ *-ate donor / donate;* ◊ *-ise critic / criticise;* ◊ *-ify notice / notify;* ◊ *-able change / changeable;* ◊ *-ible sense / sensible.* • Crosscheck deduced meaning of words with context. ⇒ *Verb prefixes (e.g. dis–, de–, mis–, over– and re). (VG&P, Year 5)*

Y5 Steps 28–30	Reading Comprehension	◀Y3/4
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*		

Y5/6	Steps 28–33	Comprehension Y5/6
Statement		**Descriptors**
Maintain positive attitudes to reading and understanding of what they read by:		
continuing to read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks;		• Read an increasingly extensive range of authors and genres, including: ◦ narrative, *e.g.* ◊ *short stories;* ◊ *stories with flashbacks;* ◊ *parodies;* ◊ *science fiction;* ◊ *author studies;* ◊ *biographies and autobiographies;* ◊ *discussion / argument (journalistic writing, persuasion);* ◦ instruction; ◦ recounts (formal and informal); ◦ persuasive texts; ◦ play scripts / interviews; ◦ poetry. • Self-select texts to demonstrate an increasing motivation both to find out information and extend their personal reading repertoire. • Discuss personal points of view and justify opinions. • Make book recommendations giving reasons for choices. • Discuss and begin to compare genre, themes, settings, events, characters and other aspects of what they read. • Discuss knowledgeably different structures of non-fiction textbooks. • Discuss and compare facts, related to ongoing learning in the classroom, in non-fiction and reference texts. • Recall and discuss texts drawing from an increasing range of books read. • Initiate conversation (verbal or written) about new or interesting books they have discovered for themselves. • Use more sophisticated story language, *e.g. increasingly precise vocabulary choices.* • Compare and discuss themes, settings (time and place), characters and plots linking directly to texts.
reading books that are structured in different ways and reading for a range of purposes;		• Identify and comment on the structure and organisation of a range of texts, *e.g.* ♦ *in reports, how expert opinion may be included to influence the reader;* ♦ *in parodies, how writers exaggerate the style, tone or other characteristics of the original work, making it appear ridiculous;* ♦ *in narratives, how flashback paragraphs can reveal insight into a characters' motives.* • Identify the purpose and audience of a range of text types, *e.g.* ♦ *fiction;* ♦ *non-fiction;* ♦ *plays;* ♦ *poetry;* ♦ *reference or textbooks.*
increasing their familiarity with a wide range of books, including myths, legends and traditional stories, modern fiction, fiction from our literary heritage, and books from other cultures and traditions;		• Over a period of time experience and become familiar with a wide range of book, including: ◦ myths, legends and traditional stories; ◦ modern fiction; ◦ fiction from our literary heritage; ◦ books from other cultures and traditions. • Tell and re-tell stories from a wide range of reading.

Y5/6 Steps 28–33	Comprehension Y5/6
Statement	**Descriptors**
recommending books that they have read, to their peers, giving reasons for their choices;	• Recommend books both orally, visually and in written forms *t*hrough a range of formats, e.g. ♦ *podcasts;* ♦ *PowerPoint presentations;* ♦ *DVD clips;* ♦ *postcards;* ♦ *book reviews;* ♦ *drama opportunities;* ♦ *school events,* such as book awards.
identifying and discussing themes and conventions in and across a wide range of writing;	• Identify and discuss themes, including: ○ heroism; ○ friendship and betrayal; ○ loss; ○ revenge; ○ bullying. • Consolidate learning regarding the conventions of different types of writing *e.g. the use of the first person in writing diaries and autobiographies.* • Continue to extend learning across a wider range of genres and text types.
making comparisons within and across books;	• Make comparisons within and across books that demonstrate understanding of, *e.g.* ♦ *setting;* ♦ *character;* ♦ *plot;* ♦ *voice.*
learning a wider range of poetry by heart;	• Know a wide range of poetry by heart.
preparing poems and plays to read aloud and to perform, showing understanding through intonation, tone and volume so that the meaning is clear to an audience.	• Show an understanding of poems and play scripts by: ○ using appropriate intonation, tone, volume or actions when performing; ○ identifying appropriate intonation, tone, volume or actions in other's performance and offering constructive comments. • Perform poems and plays with confidence to a range of audiences. • Prepare and perform poems with confidence to a range of audiences.
Understand what they read , in books they can read independently, by:	
checking that the book makes sense to them, discussing their understanding and exploring the meaning of words in context;	• Ask questions of themselves about their understanding of the text. • Discuss understanding with peers or adults to clarify meaning. • Use prior knowledge, what they have read so far and questioning to check meaning.
asking questions to improve their understanding;	• Ask questions to clarify meaning of words, phrases, character's intent, events, plot, setting, and text structure. • Generate questions about the text, *e.g. 'What questions would you like to ask the characters?'* (Might be done through drama and role play, such as hot seating, freeze framing, thought taping, ask the expert, conscience alley)
drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence;	• Using textual references, demonstrate an understanding of inference. • Infer writers' perspectives from what is written and from what is implied. • Answer inferential questions by stating a point, backing it up with evidence from the text and explaining thinking.
predicting what might happen from details stated and implied;	• Make regular predictions about characters, events and actions as they read across a text drawing on knowledge of the world and previous reading, justifying reasons with reference to the text. • Make and justify predictions from what is implied, *e.g. I predict that the bullies will not leave Tom alone and will return to demand more money because it says in the text; 'With a smile which didn't reach her eyes, Sonia hissed, "See you soon, Tommy . . . "'* • Demonstrate a deepening understanding of inference by explaining the effect of precise vocabulary choices, *e.g. 'Hissing makes me think of a snake. Snakes are dangerous, you can't tell what they are thinking and they hiss before they strike'.*

Y5/6 Steps 28–33	Comprehension Y5/6
Statement	**Descriptors**
summarising the main ideas drawn from more than one paragraph, identifying key details that support the main ideas;	• Skim and scan to identify key words and phrases, incorporating techniques, *e.g.* ♦ *highlighting;* ♦ *annotating;* ♦ *bullet points.* • Identify and use key events or details when summarising, orally rehearsing to check appropriate coverage and clarity. • Discuss, identify and summarise main ideas about how characters feelings, behaviour and relationships change across a text. • Use a range of formats to record summaries, *e.g. Tweets, synopses and postcards.*
identifying how language, structure and presentation contribute to meaning.	• Compare different types of narratives and information texts and identify how they are structured. • Identify how the differences between the language used in fiction and non-fiction, formal and informal writing contributes to meaning, drawing upon a developing understanding of purpose and audience. • Identify how structure and presentation contributes to meaning by exploring and learning the conventions of different text types, *e.g.* ♦ *greetings in letters;* ♦ *a diary written in the first person;* ♦ *bracketed stage directions in play scripts;* ♦ *autobiographies written in the first person;* ♦ *the frequent use of the passive voice to avoid personalisation in non-chronological reports.* • Identify and understand how some presentational devices contribute to meaning, *e.g.* ♦ *shorter and longer paragraphs in narratives;* ♦ *numbering and labelled diagrams / illustrations in instructions;* ♦ *headings, sub-headings, tables, charts, and maps in reports.*
Discuss and evaluate how authors use language, including figurative language, considering the impact on the reader.	• Identify precise language choices made by authors for specific effects. • Identify examples of figurative language considering the impact on the reader, *e.g.* ♦ *simile;* ♦ *metaphor;* ♦ *personification;* ♦ *onomatopoeia;* ♦ *hyperbole;* ♦ *analogy.* • Discuss and evaluate how authors use language for comic and dramatic effects. • Use evidence from the text to demonstrate the impact of language on the reader across a range of texts, *e.g.* ♦ *persuasive language techniques used in adverts, posters or through authorial voice;* ♦ *persuading the reader to consider a character in a certain light.* • Recognise rhetorical devices used to argue, persuade, mislead and sway the reader.
Distinguish between statements of fact and opinion.	• Distinguish between statements of fact and opinion.
Retrieve, record and present information from non-fiction.	• Skim and scan a text to efficiently and quickly locate required information. • Use the presentational features of non-fiction text types to efficiently retrieve, record and present information, *e.g.* ♦ *sub-headings;* ♦ *tables and charts;* ♦ *maps, diagrams and labels.*
Participate in discussions about books that are read to them and those they can read for themselves, building on their own and others' ideas and challenging views courteously.	• Express ideas and viewpoints across a range of genres, justifying their ideas to support their viewpoint, *e.g. interpreting words, phrases, themes, e.g.* • Ask and respond to questions using evidence from the text, contributing confidently in group and whole class sessions. • Listen attentively to the evidence provided by others. • Challenge, with their own evidence, the views of others, using appropriate language structures, *e.g. 'I agree with you that . . . but have you considered . . .?'* • Extend the contribution of others by the use of phrases, *e.g. 'Could you expand on that . . . ?' 'Could you explain your thinking further . . . ?'*

Y5/6 Steps 28–33	Comprehension Y5/6
Statement	**Descriptors**
Explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary.	• Summarise plot, key information, events, and characters, etc., using evidence from the text. • Make notes on and use evidence from a text to explain events or ideas. • Collect and discuss information about what has been read, *e.g. about a character, theme or other aspect.* • Present and explain their findings to peers, asking and answering relevant questions with evidence from the text. • Prepare a formal presentation, supported by notes. • Plan and present a formal debate in groups. • Explain their findings to peers, asking and answering relevant questions with evidence from the text.
Provide reasoned justifications for their views.	• Routinely use evidence from the text when expressing a personal viewpoint, *e.g. 'I believe this because on page . . . it says that . . . '* • Demonstrate an understanding of underlying themes, causes and points of view.

Y5/6	Steps 28 – 33	Writing Spelling	◀Y3/4
Key Messages • *Building spelling knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Pupils should proof-read their own and other's writing to improve the accuracy and consistency of spelling, knowing strategies for how to make changes, e.g. clapping syllables, indicating tricky part of word, choosing a memory strategy to overcome errors: identifying root word, rules, syllables and phonemes.*			

Y5/6	Steps 28 – 33	Spelling Y5/6
Statement		**Descriptors**
Use further prefixes and suffixes and understand the guidance for adding them.		See English Appendix 1 (Y5/Y6) Selection of prefixes and suffixes for Y5/ Y6 is dependent upon the school's progression mapping. • Understand and explain how a prefix changes the meaning of the word, *e.g. identify and collect words with selected prefixes added.* • Understand and explain how a suffix changes the meaning of the word, *e.g. identify and collect words with selected suffixes added.* • Use prefixes and suffixes appropriately in independent writing. ⇒ *Verb prefixes (e.g. dis–, de–, mis–, over– and re). (VG&PO, Year 5)*
Spell some words with 'silent' letters [for example, knight, psalm, solemn].		• Identify words with silent letters and the placement of the silent letter. • Use words with silent letters in independent writing, spelling them accurately. • Identify possible spelling errors in own writing and use strategies to correct, *e.g.* ♦ *highlighting silent letter;* ♦ *say it silly;* ♦ *phonemes;* ♦ *choose a memory strategy to overcome errors;* ♦ *use the 'look, say, cover, write, check' method to remember how to spell words.*
Continue to distinguish between homophones and other words which are often confused.		• Identify homophones, near-homophones and other words which are often confused. • Be able to match homophones / near-homophones to their meanings, *e.g. play homophone snap.* • Use words accurately in independent writing demonstrating an understanding of meaning.
Use knowledge of morphology and etymology in spelling and understand that the spelling of some words needs to be learnt specifically, as listed in English Appendix 1.		• Use an etymological dictionary to support understanding of word histories. • Use knowledge of morphology and etymology to support accurate spelling of words, *e.g.* ♦ *critic - critical, critically, criticise;* ♦ *aero - aeroplane, aerofoil, aerobatics.*
Use dictionaries to check the spelling and meaning of words.		• Select the definition appropriate to need and spell accurately in independent writing, *e.g. 'to bank' and 'the bank'.*
Use the first three or four letters of a word to check spelling, meaning or both of these in a dictionary.		• Use a dictionary to locate words efficiently.
Use a thesaurus.		• Select and use a word that is appropriate to context, in independent writing, understanding the subtle differences in meaning between suggested word choices, *e.g. furtive, secretive.*

Y5 Steps 28–30	Y6 Steps 31–33	Handwriting and Presentation	◀Y3/4
Key Messages • *Explicit teaching of the skills and processes essential to handwriting must precede, support and inform assessment*			

Y5 Steps 28–30	Y6 Steps 31–33	Handwriting and PresentationY5/6
Statement		**No descriptors required for handwriting**
Write legibly, fluently and with increasing speed by:		
choosing which shape of a letter to use when given choices and deciding whether or not to join specific letters;		
choosing the writing implement that is best suited for a task.		

Y5/6	Steps 28–33	Composition	◀Y3/4

Key Messages

- *Use of talk for writing, role play, drama, reading, etc., is essential.*
- *Modelling in shared writing must come prior to independent writing.*
- *Write for a range of real purposes and audiences.*
- *When using this grid for assessment, practitioners should look also for evidence from the SPaG and Reading grids.*
- *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*
- *Progression across year groups will be determined by complexity and range of text type.*

Y5/6	Steps 28–33	Composition Y5/6
Statement		**Descriptors**
Plan their writing by:		
identifying the audience for and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own;		• Select text type with awareness of: ◦ purpose and audience; ◦ appropriate layout; ◦ text features. • Plan writing integrating appropriate features from a range of models.
noting and developing initial ideas, drawing on reading and research where necessary;		• Record initial ideas drawing on reading and other research, *e.g.* ♦ *text;* ♦ *film;* ♦ *audio;* ♦ *personal experience.* • Identify and record key points. • Organise and integrate key points into an appropriately selected planning format for writing. • Develop key points by adding some detail.
in writing narratives, considering how authors have developed characters and settings in what pupils have read, listened to or seen performed.		• Plan the development of settings and characters using an increasingly sophisticated range of detail drawn from what has been read, listened to or seen performed, considering, *e.g.* ♦ *description, (physical and dress);* ♦ *actions and responses;* ♦ *dialogue, gestures and expression.*
Draft and write by:		
selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning;		• Use a range of sentence constructions incorporating appropriate grammar and precise vocabulary choices to change and enhance meaning, *e.g.* ♦ *Understand that tension and suspense can be created by deliberate placement of adverbs within a sentence, such as.:* Slowly, his hand moved towards the knocker. His hand moved, slowly, towards the heavy, black knocker. ♦ *Use sentences which include a relative clause, such as:* The piranhas circled the diver. The piranhas, which were ready for lunch, circled the diver. The piranhas circled the diver, who was unaware of the imminent danger. ⇒ *Relative clauses beginning with who, which, where, when, whose, that, ... (VG&P, Year 5)* ♦ Manipulate the position of adverbial phrases for best effect, such as: *It loomed up at them, dark and dangerous.* *Faint and wispy, the glow moved from window to window.* ⇒ *Linking ideas across paragraphs using adverbials of time, place and number. (VG&P, Year 5)* • Choose and use vocabulary typical of informal and formal speech, in writing, demonstrating an understanding of how choice is dependent upon purpose and audience.
in narratives describing settings, characters and atmosphere, integrating dialogue to convey character and advance the action;		• Use expressive or figurative language, such as metaphor and personification, to create a setting and atmosphere, *e.g. by describing how the setting makes characters feel and adding details of sights and sounds.* • Use dialogue to convey character and advance action, e.g. ♦ *Hesitating, he stammered, "M…may I have s s some more?"* *More?" roared the beadle, "Bring that boy to me!"* ♦ *Then, with a shake of his head, their leader replied, "We must enter. Whatever the cost, we MUST enter."*

Y5/6 Steps 28–33	Composition Y5/6
Statement	**Descriptors**
précising longer passages;	• Identify and record key points from longer passages. • Summarise a longer piece of text into a cohesive paragraph.
using a wide range of devices to build cohesion within and across paragraphs;	• Use a wider range of devices to build cohesion within paragraphs, *e.g.* ♦ *determiners;* ♦ *pronouns;* ♦ *synonyms;* ♦ *adverbials of:* ◊ *time,* e.g. later; ◊ *place,* e.g. nearby; ◊ *sequence,* e.g. secondly; ♦ *causal conjunctions and tense choices,* e.g. 'He had seen her before.' • Use a wider range of devices to build cohesion across paragraphs, *e.g.* ♦ *deliberate reference to previous points made;* ♦ *order of paragraphs;* ♦ *precise tense choices,* e.g. 'Only moments earlier he had . . . '; ♦ *repetition of a word or phrase;* ♦ *ellipsis.* ⇒ *Devices to build cohesion within a paragraph (e.g. then, after that, this, firstly) (VG&P, Year 5)*
using further organisational and presentational devices to structure text and to guide the reader [for example, headings, bullet points, underlining].	• Confidently use organisational and presentational devices to structure text and guide the reader, including: ◦ headings (titles) and sub-headings; ◦ photographs, diagrams and illustrations; ◦ font size and style, *e.g. bold, italic, underlining, capitalisation;* ◦ layout features, *e.g. bullet points, boxed text;* ◦ tables and charts; ◦ structure, *e.g. short or long paragraphs;* ◦ quotations; ◦ others, *e.g. flashback paragraphs to change the chronology of a narrative or reveal insight into characters' motives.*
Evaluate and edit by:	
assessing the effectiveness of their own and others' writing;	• Read aloud their own and others' writing to assess its effectiveness. • Make suggestions for improving own and others' writing.
proposing changes to Vocabulary, Grammar and Punctuation to enhance effects and clarify meaning;	• Propose changes to own and others' writing, *e.g. peer / self-assessment.* • Justify proposed changes to own and others' writing.
ensuring the consistent and correct use of tense throughout a piece of writing;	• Identify verbs which indicate tense and check for consistency within paragraphs and across the whole text, *e.g. flashback paragraphs.*
ensuring correct subject and verb agreement when using singular and plural, distinguishing between the language of speech and writing and choosing the appropriate register.	• Identify the subject and verb within sentences. • Check to ensure correct subject verb agreement, distinguishing between the language of speech and the writer's voice.
Proof-read for spelling and punctuation errors.	• Identify possible spelling and punctuation errors and know strategies for making changes. • Check accurate use of punctuation covered including: ◦ semi-colons; ◦ colons; ◦ dashes to mark the boundary between independent clauses.
Perform their own compositions, using appropriate intonation, volume, and movement so that meaning is clear.	• Perform their own compositions, responding appropriately to an increasing range of punctuation cues. • Demonstrate an increasing confidence and control when performing to engage the audience and clarify meaning by: ◦ varying intonation, *e.g. emphasise words or pause for effect;* ◦ tone and volume; ◦ movement, *e.g. scanning the audience and gesture*.

Y5 Steps 28-30	Vocabulary, Grammar and Punctuation	◀Y4 Y6▶
Key Messages • *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Pupils should proof-read their own and other's writing to improve the accuracy and consistency of the content, with particular reference to the element of vocabulary choice, grammar or punctuation being studied.* • *Develop their understanding of the concepts set out in English Appendix 2 (Year 5).*		

Y5 Steps 28-30	Vocabulary, Grammar and Punctuation Y5
Statement	**Descriptors**
Word content to be introduced (statutory requirement):	
Converting nouns or adjectives into verbs using suffixes (e.g. –ate; –ise; –ify).	See also English Appendix 1 (Y5/Y6). • Explore how suffixes are added to words, noting and explaining rules that emerge through investigations and word sorting activities, *e.g.* ♦ *note - notify;* ♦ *class - classify;* ♦ *pollen – pollenate;* ♦ *advert - advertise.* • Demonstrate an understanding of meaning by using verbs converted from nouns or adjectives accurately in writing.
Verb prefixes (e.g. dis–, de–, mis–, over– and re-).	• Identify words with prefixes across a range of texts and discuss meaning in context. • Identify root words in text and explore how adding prefixes changes the meaning of words. • Demonstrate an understanding of meaning by using verbs with prefixes accurately in writing. ⇒ *Apply their growing knowledge of root words, prefixes and suffixes . . . (Word Reading, Year 5/6)* ⇒ *Use further prefixes and suffixes . . .. (Spelling, Year 5/6)*
Sentence content to be introduced (statutory requirement):	
Relative clauses beginning with who, which, where, when, whose, that, or an omitted relative pronoun.	• Identify relative clauses beginning with who, which, where, when, whose and that, and discuss how they add information to the sentence, *e.g.* *'The piranhas circled the diver.'* *'The piranhas, which were ready for lunch, circled the diver.'* *'The piranhas circled the diver, who remained unaware of the imminent danger.'* • Understand that in some cases the relative pronoun can be left out, *e.g. 'I haven't read any of the books (that) I got for Christmas.'* • Use relative clauses in writing and demonstrate an understanding of how they can be manipulated within sentences to add information and enhance meaning. ⇒ *Draft and write by selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning. (Composition, Year 5/6)*
Indicating degrees of possibility using adverbs (e.g. perhaps, surely) or modal verbs (e.g. might, should, will, must).	• Identify examples of where adverbs are used in text to indicate degrees of possibility. • Identify examples of where modal verbs are used in text to indicate degrees of possibility. • Demonstrate an understanding of the above by using them appropriately in writing.
Using expanded noun phrases to convey complicated information concisely.	• Identify examples of expanded noun phrases (adjectival and prepositional) in text, *e.g. 'The terrified passengers held on tightly to the insecure hand rail.'* • Demonstrate an understanding of the above by using them appropriately in writing.
Devices to build cohesion within a paragraph (e.g. then, after that, this, firstly).	• Identify, within text, a range of devices used to build cohesion within a paragraph, *e.g.* ♦ *pronouns;* ♦ *synonyms;* ♦ *temporal conjunctions.* • Demonstrate an understanding of the above by using them appropriately in writing. ⇒ *Draft and write by using a wide range of devices to build cohesion within and across paragraphs. (Composition, Year 5/6)*

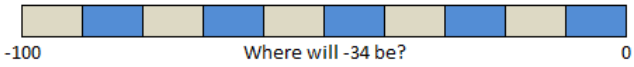
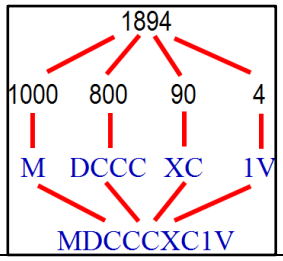
Y5 Steps 28-30	Vocabulary, Grammar and Punctuation Y5
Statement	**Descriptors**
Text content to be introduced (statutory requirement):	
Linking ideas across paragraphs using adverbials of time (e.g. later), place (e.g. nearby) and number (e.g. secondly).	• Identify a range of devices used to link ideas across paragraphs, *e.g.* ♦ *pronouns;* ♦ *synonyms;* ♦ *adverbials of:* ◊ *time, e.g. later;* ◊ *place, e.g. nearby;* ◊ *sequence, e.g. secondly;* ♦ *tense choices, e.g. 'He had seen her before.'* ⇒ *Draft and write by selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning. (Composition, Year 5/6)* • Demonstrate an understanding of the above by using them appropriately in writing.
Punctuation content to be introduced (statutory requirement):	
Brackets, dashes or commas to indicate parenthesis.	• Identify, within text, devices to indicate parenthesis and discuss their impact on the sentence, including the following to indicate parenthesis: ◦ brackets; ◦ dashes; ◦ commas. • Demonstrate an understanding of the above by using them appropriately in writing. ⇒ *Proof-read for spelling and punctuation errors. (Composition, Year 5/6)*
Use of commas to clarify meaning or avoid ambiguity.	• Use commas to avoid ambiguity, *e.g.* *'He wasn't killed mercifully.'* *'He wasn't killed, mercifully.'* ⇒ *Proof-read for spelling and punctuation errors. (Composition, Year 5/6)*
Terminology for pupils content to be introduced (statutory requirement):	
Use and understand the grammatical terminology in English Appendix 2 accurately and appropriately when discussing their writing and reading (modal verb, relative pronoun, relative clause, parenthesis, bracket, dash cohesion, ambiguity).	• Use accurate grammatical terminology when analysing text and explain the impact created. • Use accurate terminology when discussing how grammar has been used to create effect within writing.

Y5 Steps 28–30	Number Number and Place Value	◀Y4 Y6▶

Key Messages

- *Counting is a key activity and partially marked or blank number lines and number hoops should be used in oral work, counting in measures and decimals as well as in integers.*
- *Make sure that pupils make links between decimal numbers and fractions.*
- *Pupils need to visualise problems and manipulate them with equipment. Reinforcing decimal place value provides models and images for later mental calculations.*
- *Give pupils opportunities to explain their reasoning.*
- *Wherever possible calculation should be taught in the context of real life problems.*
- *An understanding of pattern in number should be developed so that relationships can be seen between facts they already know and new ones.*
- *Vocabulary: greater than or equal to, less than or equal to, ascending / descending order, is approximately equal to, round to the nearest thousand.*

Y5 Steps 28–30	Number and Place Value Y5
Statement	**Descriptors**
Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.	Similar work with decimals is covered in the fractions objectives. • Read large numbers, recognising when to change between hundreds, thousands, millions, etc., by counting the digits to the left of any decimal place in chunks of three. • Write large numbers accurately, optionally inserting commas every three places to the left of the decimal place for numbers larger than 999 (but not to the right - 4,567·123456 is correct). • Partition numbers into millions, hundred thousands, ten thousands, thousands, hundreds, tens and ones, using apparatus if require, *e.g. digit cards or a place value grid.* • Know the value of any digit in a number up to 1 million, *e.g. Explain which has the greater value, the 5 in 3,215,067 or the 5 in 856,207.* • Complete missing numbers in a place value number sentence, *e.g.* *51,320 = 50,000 + 1000 + ▢ + 20.* • Partition up to seven-digit numbers in different ways, *e.g. 92,150 = 80,000 + 12,000 + 100 + 50.* • Order whole numbers with up to seven-digits and know that the number of digits to the left of any decimal place is the first consideration followed by the size of the digits in the corresponding position (column), *e.g. If you wrote these numbers in order starting with the smallest, which number would be second? 665,104, 656,401, 661,504, 665,410, 616·045.* • Compare large numbers, *e.g. Use 3 different six-digit numbers to make this number sentence true - ▢ < ▢ > ▢.* ⇒ *Multiply and divide whole numbers and those involving decimals by 10, 100 & 1000. (Number: Multiplication and Division, Year 5)*
Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.	• Count in steps of 10, 100, 1,000, 10,000, and 100,000 from any given number. • Understand the result of counting in steps of powers of 10, *e.g.* ◆ *'True or False? When I count in 100s from 50 I will say the number 500,005 and / or 20,500.'* ◆ *'True or False? When I count in 1,000s from 69 I will say the number 969 and / or 230,069.'*
Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero.	• Count forwards and backwards in different step numbers of equal size through the zero boundary. (Continuation from Year 4) • Understand that the further away from zero a negative number is, the smaller the size, *e.g. -36 is further to the left than -14 so it is a smaller number.* • Position negative numbers accurately on a blank number line and compare them. • Use the < and > signs to record statements such as -13 < -1 > -2. • Predict numbers in a sequence, *e.g. 'If I keep on subtracting 5 from 19, will -13 be in the sequence?'* • Understand negative numbers in different contexts, *e.g. temperature in graphs or owing money such as in a negative bank balance.* • Order negative and positive numbers in context, *e.g. pictures of thermometers.*

Y5 Steps 28–30	Number and Place Value Y5
Statement	**Descriptors**
Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.	• Confidently round larger numbers to round to the nearest 10, 100 and 1000. • Round numbers to the nearest 10,000, 100,000 and 1,000,000 using a number line to visualise and position a number between relevant powers of 10, *e.g. round 227,842 to the nearest 10,000.* • Apply the rule of 5 when rounding to the nearest 10 and the scaling of this when rounding to powers of 10 (nearest 50 if rounding to nearest 100, etc.). • Use rounding when estimating answers to calculations, *e.g. I think the answer will be about 5000 because . . ..* ⇒ *Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. (Number: Addition and Subtraction, Year 5)*
Solve number problems and practical problems that involve all of the above.	• Use and apply number and place value into word problems, *e.g.* ◆ *The temperature is -2 °C. How much must it rise to reach 3 °C?* ◆ *What is the smallest number that can be rounded to the nearest 100 where the rounded number is 763,300?* • Use and apply number and place value investigations in different real life contexts and other curriculum areas, *e.g.* ◆ *Compare winter temperatures in different cities on Earth.* ◆ *Compare the distances of planets from the sun.* • Round numbers in context, *e.g.* ◆ *population figures;* ◆ *visitor numbers to a place of interest;* ◆ *spectators at sports venues.* • Solve missing numbers, missing symbols and sequence problems involving both large numbers and negative numbers, explaining the 'rules' and patterns within the numbers, *e.g.* ◆ *-8, -5, ▢, 1, 4 (rule is +3).* ◆ *285, 266, 247, ▢, ▢.* • Solve estimation problems with both large numbers and negative numbers, *e.g.* 
Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	• Know the values of Roman numerals, I = 1, V = 5, X = 10, L = 50, C = 100, D = 500, M = 1,000 • Consolidate, and extend understanding of the rules for reading and writing Roman numerals: ◦ When a smaller symbol appears **after a larger** symbol it is **added**, *e.g.* MC = M + C = *1000 + 100 = 1100.* ◦ When a smaller symbol appears **before a larger** symbol it is **subtracted**, *e.g.* XC = C - X = *100 - 10 = 90.* ◦ Don't use the same symbol more than three times in a row. ◦ Some letters canot be put in front of others to be subtracted: ◊ I is only used in front of V and X *e.g. 99 is not* IC *(100 – 1);* ◊ X in only used in front of L and C; ◊ C is only used in front of D and M; ◊ D is only used in front of M. • Write dates in Roman numerals by partitioning the date into Th H T U first, converting each part to the Roman numeral, then re-combining the Roman numerals, *e.g. 1894.* • Read dates in Roman numerals, *e.g. buildings, films, TV programmes.* 

Y5 Steps 28–30	Number Addition and Subtraction	◀Y4 Y6▶

Key Messages

- *Pupils rehearse addition and subtraction facts regularly as part of daily oral and mental work.*
- *Count in whole-number and decimal steps regularly.*
- *Pupils should consider whether calculations can be done mentally before deciding on a written method.*
- *Pupils should have regular opportunities to explain their methods, compare alternative strategies and check.*
- *Pick up on common calculation errors. Ask children to identify what has gone wrong and suggest strategies to use.*
- *Link money notation to decimal place value, e.g. the 2 in £4·27 has value of 2 tenths of a pound or 20p.*
- *Use language of addition and subtraction: decrease, increase, units boundary, tenths boundary.*

Y5 Steps 28–30	Addition and Subtraction Y5
Statement	**Descriptors**
Add and subtract whole numbers with more than 4 digits.	Formal columnar methods for addition and subtraction are not part of the Key Performance Indicator. However, when working with multi-digit numbers, it is most probable that a written method of calculation will be required. • Choose when it is appropriate to use formal written methods of addition and subtraction involving numbers with more than 4 digits, *e.g. Finding the difference between 45,687 and 45,699 could be calculated by counting on or recognising that only the tens and ones are involved in the calculation.* • Demonstrate an understanding of the place value that underpins written methods, *e.g. explain the size of each digit in calculations such as 0·816 kg + 5·567 kg or 23·26 m - 17·78 m.* • Add numbers with more than 4 digits with equal amounts of decimal places, *e.g. £4506·35 and £205·68.* • Add numbers with more than 4 digits where one of the numbers has a different amount of decimal places from the other, *e.g. 245·26 + 675·2.* • Subtract two or three large whole numbers without decimals with answers within one million. • Subtract numbers with more than 4 digits with equal amounts of decimal places, *e.g. £4506·35 - £205·68.* • Subtract numbers with more than 4 digits where one of the numbers has a different amount of decimal places from the other, *e.g. 675·2 - 245·26.* • Estimate the approximate range of where an answer will fall and use this to check for reasonableness.
Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).	See Mathematics programmes of study: key stages 1 and 2: Mathematics Appendix 1 (formal methods). • Add two or more multi-digit whole numbers using short columnar addition. • Add two or more multi-digit decimal numbers using short columnar addition. • Add two multi-digit whole numbers using short columnar subtraction. • Add two multi-digit decimal numbers using short columnar subtraction. • Be able to explain when to exchange and regroup in subtraction and why. • Demonstrate an understanding of how to subtract with numbers including a zero, *e.g. 27,053 - 19,476.*
Add and subtract mentally with increasingly large numbers (example 12,462 – 2300 = 10,162).	• Know when it might be appropriate to use a mental method of addition and subtraction, *e.g.* ◆ *When numbers are close together so that counting on or back in the head is possible;* ◆ *When only one digit is involved in the calculation and can be visualised, e.g. 5·632 - 5·432.* • Choose the most efficient known mental strategy and explain why, *e.g. 0·28 + 0·46, or 9·7 – 3·9.* • Demonstrate an understanding of when it is appropriate to work with large numbers mentally (which can include jottings), *e.g. Make up an example of an addition or subtraction calculation involving decimals and / or multi-digits that you would do in your head.* • Explain / discuss how a mental calculation has been done. • Adapt own methods of mental calculations to become more efficient, perhaps in response to listening to others.
Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	Pick up on rounding errors and correct. ⇒ *Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000. (Number: Number and Place Value, Year 5)* • Demonstrate a secure understanding of appropriate rounding, *e.g. Round to the nearest 10, 100, 1000 or 10,000.* • Use rounding of numbers in a calculation to estimate answers. • Understand when numbers need to be rounded up or down in context of a problem, i.e., how the left overs need to be accounted for.

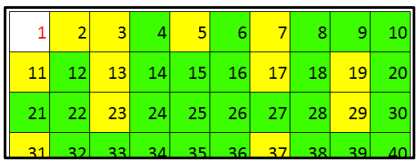
Y5 Steps 28–30	Addition and Subtraction Y5
Statement	**Descriptors**
Solve addition and subtraction multi step problems in contexts, deciding which operation and method to use and why.	• Use inverse operations to check answers, *e.g. 3·42 + y = 10.* • Record methods using diagrams (such as number lines) or jottings, and explain their methods to others. • Compare alternative methods for the same calculation and discuss any merits and disadvantages. • Understand the mathematical vocabulary used in a problem. • Identify the order of the steps needed to solve a problem. • Compose a similar problem using different numbers or different contexts. • Solve problems including those in real life contexts and other curriculum areas, *e.g.* ♦ *Find three consecutive numbers that total 171.* ♦ *Place each of the digits from 0 to 9 into this calculation so it is correct* □□□□ - □□□ = □□□. ♦ *Find as many different combinations of four numbers from a grid for random numbers (target board) to equal 1000.* ♦ *Countdown - using the numbers given, what is the closest you can get to 567?* (Pupils might also use x and ÷ unless told they cannot.) ♦ *I buy presents costing £9·63, £5·27 and £3·72. How much change do I have from £20?* ♦ *Make up 'number stories' to reflect statements such as or 3·5 – 1·7 = 1·8.* ♦ *I double a number then add 1·52. The answer is 1·88. What number did I start with?* ♦ *Find the difference in weights of large animals, e.g. blue whale is 136,000 kg and a white rhino is 2,175 kg. What is the difference in their weights?* ♦ *Compare the height and span of two bridges.*

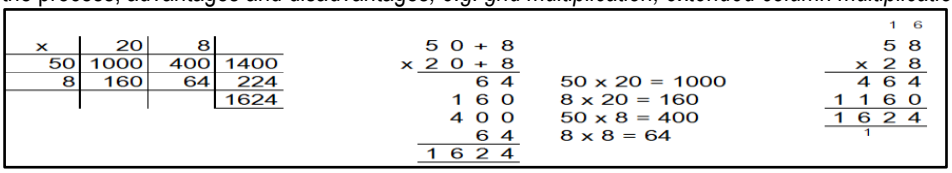
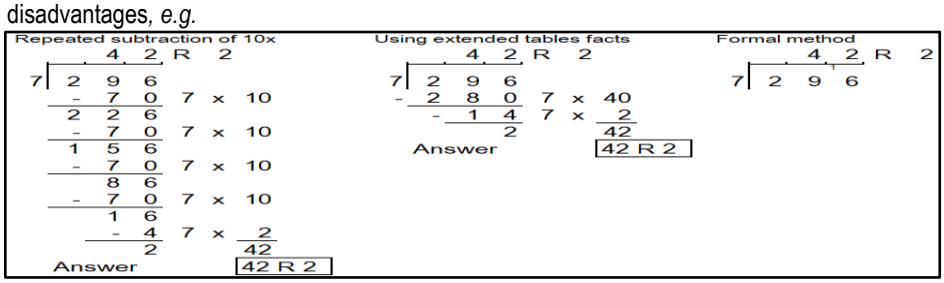
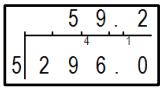
275	382	81	174
206	117	414	262
483	173	239	138
331	230	325	170

Y5 Steps 28–30	Number Multiplication and Division	◀Y4 Y6▶

Key Messages

- *Multiplication and division facts should be rehearsed regularly in mental and oral work.*
- *Formal division methods should be delayed until the chunking method is understood. If necessary these could be end of Year 5 activities.*
- *Emphasise that multiplying and dividing by a power of 10 is movement of place, not 'adding / removing 0s'.*
- *Set calculations in the context of real-life / word problems wherever possible.*
- *Associate division with finding a fraction.*
- *Give pupils lots of opportunities to explain what they need to do to solve a problem and how they have achieved it.*
- *Use language of addition and subtraction: product, multiple, factor, common factor, factor pairs, factorise, prime number, composite number, divisibility, square number, cube number.*

Y5 Steps 28–30	Multiplication and Division Y5
Statement	**Descriptors**
Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	• Know what the terms multiple, factor and common factor mean. • Instantly recall all the multiplication facts to 12 × 12 and the related division facts. • Know and find factor pairs for times table answers up to 12 × 12, *e.g. I'm thinking of the number 84. One of a pair of its factors is 12. What is the other?* • Select the most appropriate factor pair of a number in the context of a problem if there are alternatives. • Use tables facts to find extended factor pairs, *e.g. 45 has a factor pair of 9 and 5, therefore 450 has a factor pair of 90 and 5 or 9 and 50.* • Find common factors, *e.g.* ◆ *What are the common factors of 16 and 12?* ◆ *Take two number cards from a pack and investigate how many common factors they have.* ◆ *Sort a set of number cards into Venn and Carroll diagrams (2 or 3 sets) by factor.* ◆ *The common factors of two numbers are 1, 2, 5 and 10. What could the two numbers be?* ⇒ *Identify, name and write equivalent fractions of a given fraction. (Fractions, Year 5)*
Solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors.	Through problem solving activities: • Estimate the approximate outcome of a calculation. • Check answers against estimates. • Explain how a problem was solved. • Use the distributive and / or commutative laws to simplify multiplication of multi-digit numbers in problems, *e.g. Each can of cola holds 450 $m\ell$. How many $m\ell$ in 16 cans?* *Solution might be: 450 × 16 = (50 × 9 × 2 × 8) = (50 × 2) × (9 × 8) = 100 × 72 = 7,200.* • Use inverse operations and factor pairs (a version of chunking), where appropriate, to simplify division of a multi-digit number by a single-digit number, *e.g. 165 ÷ 3 can be found by first realising that 50 × 3 = 150 and 5 × 3 = 15 so 165 ÷ 3 = 55.*
Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.	• Understand the mathematical terms: ◦ prime number – a whole number greater than one and only divisible by 1 and itself; ◦ prime factor – a factor that is a prime number; ◦ composite number - a whole number greater than one that is not a prime number. 0 and 1 are special numbers that are neither prime nor composite. • Use prime numbers, prime factors and composite numbers as properties of numbers in problems solving activities.
Establish whether a number up to 100 is prime and recall prime numbers up to 19.	• Know that any even number other than 2 is a composite number (not prime). • Using diagrams / visual representation to work out whether any number up to 100 is a prime number or a composite number, *e.g. Colour a 100 square grid systematically with one colour for the primes (1 is not prime) and another for the multiples of the primes.* • Know the prime numbers to 19, *e.g. List the numbers 1 to 19 in a table and write every factor for each number. Use the table to write down the prime numbers and learn these.* 

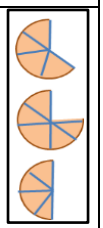
Y5 Steps 28–30	Multiplication and Division Y5
Statement	**Descriptors**
Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two digit numbers.	See Mathematics programmes of study: key stages 1 and 2: Mathematics Appendix 1 (formal methods). Set calculations in real-life contexts. • Compare methods of multiplication by a two-digit number understanding the place value of each digit, the process, advantages and disadvantages, *e.g. grid multiplication, extended column multiplication.*  • Estimate and check answers for sense. • Use formal written methods of multiplication for any starting whole number with up to four digits multiplied by a single-digit number, *e.g. Sofas are £1,265 each. Mr Smith needs 7 to refurnish his flats. How much will it cost him?* • Use formal written methods of multiplication for any starting whole number with up to four digits multiplied by a two-digit number, *e.g. Each carton of milk holds 1,454 ml. How much milk is in 25 cartons?*
Multiply and divide numbers mentally drawing upon known facts.	• Use jottings to support mental methods, *e.g. Do part of the calculation mentally and jot down the answer to each part before completing the final calculation.* • Know multiplication and corresponding division facts up to 12 × 12. • Know multiplication can be done in any order but division cannot. • Use doubling and halving, including repeated doubling and halving, for numbers to be multiplied or divided by 4 and 8. • Recognise 'nearly' numbers and use this to simplify calculations where appropriate, *e.g.* ◆ *40 × 99 = (40 × 100) – 40.* ◆ *11 is 10 + 1, 998 is 1000 – 2.* • Understand the law of distribution (distributivity) and factor pairs and select the most efficient method, *e.g.* ◆ *12 × 35 can be written as (2 × 35) + (10 × 35) or 2 × 6 × 5 × 7 = 10 × 42.* ◆ *150 ÷ 6 can be written as (150 ÷ 3 ÷ 2) because 3 and 2 are a factor pair of 6.* • Discuss different strategies for solving an equation, *e.g. 580 ÷ 20.* • Refine strategies to make them more efficient.
Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.	See Mathematics programmes of study: key stages 1 and 2: Mathematics Appendix 1 (formal methods). • Estimate and check answers for sense. • Compare methods of division understanding the place value of each digit, the process, advantages and disadvantages, *e.g.*  • Know that zeros may need to be added to calculate an answer to a problem that has a remainder, *e.g. A piece of cloth 29 m long is cut into 5 equal pieces. How long is each one?* • Interpret remainders in context: ◆ *Express as a mixed number,* e.g. Share pieces of pizza, such as 20 ÷ 8 = 2⅛ or 2½ if simplified. ◆ *Express as a decimal,* e.g. Divide a 210 g block of butter into quarters, i.e., 42·5 g. ◆ *Round up,* e.g. How many boxes holding 6 eggs do I need to buy so that I have 160 eggs altogether? ◆ *Round down,* e.g. How many boxes holding 6 eggs each can be filled from 160 eggs? • Use formal written methods for division of up to four-digit numbers by a one-digit number. 

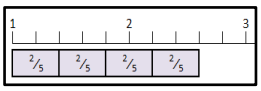
Y5 Steps 28–30	Multiplication and Division Y5
Statement	**Descriptors**
Multiply and divide whole numbers and those involving decimals by 10, 100 & 1000	Set the following in the context of measures, *e.g. g to kg, ℓ to mℓ, cm to m, km to m, etc.* ⇒ *Read, write, order and compare numbers to at least 1,000,000 . . . (Number: Place Value, Year 5)* • Know the place value of any number up to one million with up to three decimal places. • Know how many places digits move to the left or right when multiplying / dividing by 10 / 100 / 1000. • Know that multiplying by a power of 10 should not be expressed as 'adding 0's' but is the movement of place. • Know when 0 is required as a place holder and when it is not, *e.g. 23 ÷ 100 = 0·023, 0·06 × 100 = 6.* • Recognise the relationships when multiplying / dividing by 10 twice then multiplying / dividing by 100.
Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).	• Know that when a number is multiplied by itself it produces a square number, *e.g. Investigate square numbers using a growing array on grid paper.* • Understand and use superscript ^{2} meaning that a number is multiplied by itself, i.e., 2 × the number. • Know that when the same number is multiplied together 3 times it is a cube number, *e.g. Use visual images to support this such as a base ten 1,000-block, Multilink models.* • Understand and use superscript ^{3} meaning that a number is multiplied by itself twice, i.e., 3 × the number.
Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	• Solve problems using factors and multiples, *e.g.* ◆ *Any number that ends in the digits 64 is divisible by 4, true of false?* ◆ *Make a factor tree for a number such as 60.* ◆ *How many multiples has 360?* • Solve problems with squared and cubed numbers, *e.g.* ◆ *□, □, 9, □, 25, □.* ◆ *The sum of the cubes of two numbers is 1,062. What are the numbers?* ◆ *Find the perimeters or squares from a known side length and / or vice versa.* ◆ *Find the volume of cubes with sides of given length. Do you know how many blocks you would need to make a cube that was 12 blocks tall? Write a formula for making cubes.* ⇒ *Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes) . . .. (Measurement, Year 5)* • Solve problems involving multiplication and division, *e.g.* ◆ *The answer is 270. How many different ways could you write equations to represent it? Example solutions: 3 × 3 × 9 × 10 or 9^2 × 10 or 3^3 × 1.* ◆ *Place three digits to make a U · t × U calculation where the answer is a whole number;* ◆ *The perimeter of an equilateral triangle is 234 cm. What is the length of each side?*
Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	• Use the equals sign in missing number problems and simple formulae, recognising that each side of the equation must be balanced, *e.g.* ◆ *20 × 10 = □ + 600.* ◆ *140 = □ × □ × 35.* ◆ *5 × n = n + 8. What could n be? Is there more than one possible answer?* • Solve word problems and number puzzles involving all four rules, *e.g.* ◆ *I buy presents costing £9·63, £5·27 and £3·72. How much change do I have from £20?* ◆ *Classify numbers according to their properties and record in Venn and Carroll diagrams;* ◆ *Create different calculations using the digits 3, 4 and 5 in every equation and any combination of symbols (-, +, ×, ÷). What is the largest / smallest answer you can make? Can you make 2·4?* ◆ *What number lies halfway between 2·47 and 2·83 on a number line?* ◆ *Use function machines;* ◆ *Pose 'I'm thinking of a number' problems.*
Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	• Solve problems involving multiplication and division in context, *e.g.* ◆ *How many £50 notes would you need to make £12,000?* ◆ *Lines are drawn 200m apart. How many can be drawn in 1km?* • Solve problems involving scaling, including fractions, *e.g.* ◆ *Construct an equilateral triangle by dividing or multiplying a given measurements, e.g. make sides 3 times as long one-third as long, etc;* ◆ *Reduce and increase given recipes.* • Solve problems involving rates, *e.g.* ◆ *Convert between units such as kilometres and metres or kilograms and grams.* ◆ *The travel agents are giving €1.40 for every £1. How many euros will I get for £200?* ⇒ *Convert between different units of metric measure . . .. (Measurement, Year 5)* ⇒ *Solve comparison, sum and difference problems using information presented in a line graph. (Statistics, Year 5)*

Y5 Steps 28–30	Number Fractions, including Decimals	◀Y4 Y6▶

Key Messages

- *Reinforce that in place value each column gets ten times bigger as you move to the left.*
- *Must not describe multiplying by 10 as 'adding a 0', by 100 as 'adding 00', etc.*
- *Describe the value of decimal digits in both decimals and fractions,* e.g. 0·02 and $\frac{2}{100}$.
- *Children need to be understand equivalence of fractions such as ¼, ⅜, 3/12, 4/16. There is often a misconception with this that each is larger than the one before because the denominator is larger. This needs to be underpinned with practical activities.*
- *Count in fractions, especially in tenths and hundredths, fifths and quarters, including decimals.*
- *Don't routinely set fractions in the context of money as this is always represented as 2 decimal places.*
- *Set the foundations for ratio and proportion using associated vocabulary,* e.g. 'in every', 'for every'.
- *Use language of fractions: proper/improper fraction, mixed number, numerator, denominator, equivalent, reduced to, cancel, percentage, per cent, %.*

Y5 Steps 28–30	Fractions, including Decimals Y5
Statement	**Descriptors**
Compare and order fractions whose denominators are all multiples of the same number.	• Demonstrate practically that one fraction is larger / smaller than another, *e.g. Which is the largest, ⅔ or ⅝? Make two strips of paper the same length, dividing one into thirds and one into ninths. Arrange the pieces.*  • Create and interpret diagrams to support fractions work, *e.g. a fraction wall.* • Order a set of fractions from the same family, including mixed numbers. • Understand the terms denominator and numerator.
Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	Develop the language of ratio and proportion where there are opportunities. • Count forwards and backwards in unit and non-unit fraction amounts relating to work being undertaken. • Recognise equivalence between non-unit fractions *such as ¾ and ⅞ or 3/10 and 30/100* using apparatus if required, *e.g. number lines, fractions walls or grid paper.* • Understand how equivalent fractions are calculated, relating this to multiplication and division and recognising patterns in the numerators and denominators, *e.g. ☐, 5/10, 9/15, ☐, ☐. What would be the 12th term? Can you work it out without writing them all down?* • Investigate / illustrate / write equations / solve problems with practical apparatus for equivalent fractions families, including tenths and hundredths and those not covered in Year 4 – sixths, sevenths, ninths.  ⇒ *Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. (Number: Multiplication and Division, Year 5)*
Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5].	• Know that when the numerator is larger than the denominator it is an improper fraction. • Write a mixed number as an improper fraction, *e.g. 2⅓ = seven thirds = 7/3.* • Write an improper fraction as a mixed number, *e.g. 7/3 is two ones and one-third = 2⅓.* • Know that mixed numbers in a fraction calculation should be changed to improper fractions before adding or subtracting, *e.g. 2⅓ – 1⅔ = 7/3 – 5/3 = ⅔.* • Add and subtract fractions with the same denominator, including pairs that make one and mixed numbers, *e.g.* ◆ $1\frac{3}{10} + 2\frac{9}{10}$ or $3\frac{1}{6} + 4\frac{5}{6}$. ◆ $3\frac{7}{8} - 2\frac{3}{8}$ or $4\frac{1}{3} - 1\frac{2}{3}$.
Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	• Confidently add and subtract fractions with the same denominator. • Understand the term common denominator. • Understand that, when adding and subtracting fractions not having the same denominators, each can be changed into an equivalent fraction, all with the same common denominator, *e.g. James, Shane and Chelsea have bought a pizza. They eat ¼, ⅝ and ⅛. How much is eaten?*  • Add and subtract within fraction families, including some mixed numbers and more than two fractions. • Simplify answers to fractions calculations by cancelling where necessary, *e.g. ⅝ to ¾ or 1⅛ to 1½.* • Check answers using inverse operations. • Solve fraction problems, *e.g.* ◆ *I have cycled 7/10 of a distance of 50 km. How far do I still have to go?* ◆ *Misha buys a 2 litre bottle of pop. She drinks ¼ of the bottle and spills ⅖ of the bottle. How many millilitres are left?*

Y5 Steps 28–30	Fractions, including Decimals Y5
Statement	**Descriptors**
Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	The following should be presented in real-life contexts of quantity and measures. • Interpret and represent multiplication of proper fractions, *e.g. 4 × ⅖.* • Accurately multiply proper fractions by whole numbers. • Convert mixed numbers to improper fractions before multiplying. • Accurately multiply mixed numbers by whole numbers by: ◦ partitioning, *e.g. 3⅔ × 4 = (3 × 4) and 4 × ⅔ + ⅔ + ⅔ + ⅔;* ◦ converting mixed numbers to improper fractions before multiplying, *e.g. 1⅔ × 4 = 1⅓ = 3⅓.* 
Read and write decimal numbers as fractions *[for example, 0·71 = 71/100].*	• Understand the relationship between hundredths as a fraction (1/100) and hundredths as a decimal (0·01), *e.g. label number lines / 100 squares with decimals on the top and fractions on the bottom and 'read' both scales.*  • Know that decimals and fractions are different ways of expressing numbers and proportions. • Recognise and write the decimal equivalent of a tenths / hundredths fraction amount and vice versa, *e.g. 'Which of these fractions is equal to 0·27 — 207/100, 270/100, 27/10, 270/10 , 207/10.* • Find the fraction equivalents of decimal numbers to the lowest denominator, *e.g.* 0·4 = 4/10 = ⅖. • Convert decimals to mixed numbers, *e.g. 2·5 to 2 5/10 or 53·13 to 53 13/100.*
Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	Use of calculators could support this objective. • Understand the relationship between thousandths as a fraction (1/1,000) as a decimal (0·001). • Understand 0 as a place holder in numbers with up to three decimal places, *e.g. Write 'one and four thousandths' as 1·004.* • Know what each digit is worth in any number with up to three decimal places. • Say, read and write decimal fractions and related tenths, hundredths and thousandths accurately, understanding where a place keeping 0 is necessary. • Understand the relationship between thousandths, hundredths and tenths, *e.g. 'How many thousandths in four hundredths?'* • Understand the effect of dividing one-, two- and three-digit numbers by 1,000, *e.g. 0·6, 9, 6·16.*
Round decimals with two decimal places to the nearest: whole number; and to one decimal place.	Set these in the context of quantities, measures and money. <u>Two Decimal Places to the Nearest Integer</u> • Place numbers with two decimal places accurately on a number line between two whole integers, *e.g. put 4·76 between 4 and 5 (but closer to 5) on a 0 to 10 number line.* • Know, when rounding to the nearest integer, that the tenths determine which is the closest. • Recall that if the tenth is a 5 this is rounded up, otherwise down (rule of 5). <u>Two Decimal Places to One Decimal Place</u> • Place numbers with two decimal places accurately on a number line, marked in tenths, between tenths markers, *e.g. put 0·42 between 0·4 and 0·5 but closer to 0.* • Know, when rounding to the nearest tenth, that the hundredths determine the closest tenth. • Use the 'rule of 5' when rounding hundredths. <u>Estimate by using rounding techniques</u> • Use rounding of numbers to estimate answers to calculations, deciding on the most appropriate degree of accuracy required, *e.g.* • *56·46 + 33·67 is approximately 56 + 34 or approximately 56·5 + 33·7.* • *5·56 – 1·93 is approximately 6 – 2 or approximately 5·6 – 1·9.*
Read, write, order and compare numbers with up to three decimal places.	Make sure that pupils understand that it is not the **number** of digits after the decimal point that defines its size, *e.g.* 0·578 is smaller than 0·6. • Partition and re-combine any number less than 1 with up to three decimal places, *e.g. 0·23 is two tenths and three hundredths, so, the 2/10 and 3/100 is read as 23/100; twenty three hundredths, etc.* • Order a set of numbers, appreciating that the most significant digit defines the size of a number and is the left-most non-zero digit, e.g. ◆ *Which is the heaviest / lightest from 1·25 kg, 0·125 kg, 2·105 kg, 0·2 kg, 0·251 kg?* ◆ *Arrange in order of capacity — 1·025 ℓ, 0·12 ℓ, 2·1 ℓ, 0·215 ℓ, 0·251 ℓ.*

Y5 Steps 28–30	Fractions, including Decimals Y5
Statement	**Descriptors**
Solve problems involving numbers up to three decimal places.	• *Solve problems involving numbers up to three decimal places, e.g.* ♦ *Find pairs of two-digit decimal numbers that make 1 where the hundredths are . . ..* ♦ *Play games, e.g.* ◊ Play Calculator Zap. (Choose a decimal number to enter into a calculator, *e.g. 47·135. Remove each digit in turn with one subtraction calculation and record.)* ◊ Play Concentration Pairs. (Place a pack of equivalent pairs face down on the table, *e.g. 0·145kg and 145 g, 3/10 of 1kg and 0·3kg. Players try to turn over a matching pair. Keep them if they are equivalent, replace them if not. Player with the most cards wins.)* ♦ *A litre bottle is shared fairly between four children, how much will each receive?* ♦ *There is 1·3kg of flour left in the bag. Half of it is used. How much is left?* ♦ *Find a number whose double lies between 1·3 and 1·4.* ♦ *What number lies halfway between 2·47 and 2·83 on a number line?* ♦ *2057 ÷ 10 = ▢ ÷ 10 = ▢ ÷ 10 = ▢ ÷ 10 = ▢.* ♦ *Function machines with operators and numbers.* ♦ *Fill in the missing symbol and multiple (such as × 10 or ÷ 1,000).* 
Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.	• Know that one percent is a special kind of fraction, it is one hundredth (1/100) and understand the link to the division operation, *e.g. 12% is twelve divided by one hundred (12/100).* • Understand percentage as the number of parts in every 100, *e.g. Shade 35 squares in a 10 x 10 grid to represent 35% and 0·35.* • Find 1% of quantities and amounts, applying place value understanding, *e.g. 1% of 16·3 m is 0.163 m.* • Find 10% of quantities and amounts, applying place value understanding, *e.g. 10% of 16·3 m is 1·63 m.* • Find other simple amounts, such as *25% (¼)*, by applying proportional reasoning, *e.g. Find 50% of 60, or 25% of 240.* • Find the percentage equivalence for fractions, *e.g. Shade ½ in a 10 x 10 grid and understanding this is 50% because 50 out of 100 squares are coloured.* • Understand the equivalence between simple fractions, decimals and percentages, *e.g. Complete a relationship table.* **Fraction (hundredths)** / **Decimal** / **Percentage - %** 1/100 / / 1% 10/100 / 0.1 / 50/100 / / 100/100 / 1 /
Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.	Promote the use of the language of percentages at every opportunity; *e.g. refer to half as 50% of something.* • Use scaling to find answers to problems involving tenths, hundredths, thousandths and twenty-fifths of a value applying known facts, *e.g.* ♦ *Move digits to the right when finding 10% or 1% of 844.* ♦ *Use efficient calculation strategies, e.g.* Find 75% of 360 - could be finding 25% by quartering 360, then multiplying by 3. • Solve problems, *e.g.* ♦ *Shopping problems, such as:* ◊ 20% off sales; ◊ 50% off everything; ◊ 10% off original sale prices; ◊ best buys; ◊ buy one get second half price. ♦ *35% of the children in a class are girls. What percentage are boys?* ♦ *What percentage of a day is 6 hours?* ♦ *Asif buys a 1 kg bag of flour. He uses 30% of it to make biscuits and 2/5 of it to bake a cake. How much of the flour is left?* ♦ *Make comparisons,* e.g. Richard got 40 marks out of 80 in a test. Sarah got 45%. Who had the better score, Richard or Sarah? ♦ *25% of the apples in a basket are red. There rest are green. There are 21 red apples. How many green apples are there?*

Y5 Steps 28–30	Measurement	◀Y4 Y6▶

Key Messages

- *Pupils need to be secure in place value up to at least one million when converting between the large and small units of measure presented in these objectives.*
- *Pupils should be encouraged to present their findings in the most suitable unit of a measure for the size of the outcome,* e.g. should it be in mm, cm or m?
- *Perimeter, area and volume should be explored in practical contexts.*
- *Provide opportunities for measuring and comparing in data handling / statistics and apply across the curriculum.*
- *It is vital that pupils have opportunities to read and measure with scales with different divisions and those where all divisions are not marked.*

Y5 Steps 28–30	Measurement Y5
Statement	**Descriptors**

Convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).

- Recall the meaning of *kilo* (one thousand), *centi* (one hundredth) and *milli* (one thousandth).
- Know the range of units of a measure and how place value is used, *e.g. Construct a table and answer questions such as What would you divide by to change kilograms into grams?, What would you multiply by to change milligrams into kilograms?*

How many in?	mm	cm	m	km
mm		10	1,000	1,000,000
cm			100	100,000
m				1,000

- Order measurements given in mixed units, *e.g. 1.34 ℓ, 225 mℓ, 0.034 ℓ.*
- Practise multiplying and dividing by powers of 10, changing the units to those easy to read if appropriate, *e.g. a function machine.*

Give the answer in the unit shown.

3 mm → x 1000 → m → x 100 → km → ÷ 1000 → cm

⇒ *Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.*

Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.

⇒ *Solve comparison, sum and difference problems using information presented in a line graph. (Statistics, Year 5)*

Table for information only:

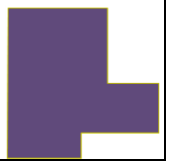
Imperial to metric	Approx Amount	Metric to imperial	Approx Amount
Miles to kilometres	1.6	Kilometres to miles	0.6
Inches to centimetres	0.4	Centimetres to inches	2.5
Pounds to kilograms	0.45	Kilograms to pounds	2.2
Pints to litres	0.47	Litres to pints	2.1

- Use conversion rates for different measures, *e.g. make a table from information on the internet and use it to find simple equivalences, such as 'I only have an old tape measure that measures in inches. Where would I measure to so I could cut a piece of string 10 cm long?'*
- Learn some commonly used benchmarks and check with these to see if an answer is sensible, *e.g.*
  - *5 miles ≈ 8 kilometres;*
  - *1 kilogram is just over 2 pounds;*
  - *10 cm ≈ 4 inch.*

Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.

This is an extension of work in Year 4 where the simplest form of rectilinear shapes was covered (rectangles and rectilinear shapes made from a maximum of two rectangles joined together). It is suggested that shapes used in this section are made from three or more joined rectangles.

- Measure and draw lines accurately with a ruler to the nearest mm.
- Calculate the perimeter of composite rectilinear shapes by measuring each side and totalling.
- Measure and calculate the perimeter of large rectilinear objects, *e.g. school grounds.*
- Calculate the perimeter of a composite rectilinear shape from scaled drawings where the unit of measurement could be in cm or m and decimals could be involved.

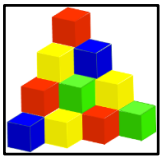
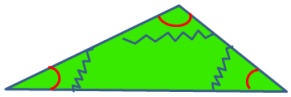


Y5 Steps 28–30	Measurement Y5
Statement	**Descriptors**
Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.	• Know how big 1 cm² is and how big 1 m² is and the relationship between them, *e.g.* ◆ *Cut out 1 cm² and see what can be fitted onto it, such as 20 grains of rice.* ◆ *Draw a 1 m² on the playground and see how many people fit into it.* • Understand and use the notation of cm^2 and m^2. • Understand that multiplication can be used to calculate the area of a rectangle, *e.g. compare the area of rectangles by making arrays, recognising that area can be found by multiplying length by width.* • Understand that length by width = area can be written as the formula l × w = a; interpret this in context and use in diagrams. • Know the area of a square is l^2 (length²). • Solve problems about area and perimeter, *e.g. Find unknown lengths of the perimeter of a rectangle of sides 2 cm and b cm and perimeter of 20 cm.* • Recognise how rectilinear shapes can be dissected into rectangles and use this to find the area of blocks of the shape which can then be totalled. • Estimate and find the area of irregular shapes that are not rectilinear, *e.g. Find the area of a leaf drawn on cm² paper or a kite made on a geoboard.* • Solve area problems, *e.g.* ◆ *Ben has drawn this shape to scale on plain paper instead of on cm^2 paper. Can you find its area? Explain how you did this.* ◆ *A play area is 5 m long and 10 m wide. Draw a scaled diagram on cm^2 paper.*
Estimate volume [e.g. using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [e.g. using water].	⇒ *Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. (Number: Multiplication and Division, Year 5)* <u>Volume</u> • Have an idea of how big 1 cm^3 is, *e.g. Find a cube that measures 1 cm on each edge.* • Estimate and check how many centimetre cubes will pack tightly into a range of containers. • Know that the simple formula, l × w × h, can be used to find the volume of cuboids and cubes, *e.g. Make small cuboids with centimetre cubes, measure each dimension (length, width, height), count cubes and record in a table. Use the table information and knowledge from Year 4 about the area of rectangles to work out the formula for the volume of cuboids.* • Understand and use the notation of cm^3 and m^3. <u>Capacity</u> • Have an idea how much 1 $m\ell$ is and how much 1 ℓ is and the relationship between them. • Estimate how many millilitres / litres a range of unmarked containers will hold and check. <u>General</u> • Compare 1 $m\ell$ of liquid with a 1 cm^3 and recognise that they take up the same amount of space. • Compare a 10 centimetre cube, such as a base 10 cube, with a litre container and recognise that they take up the same amount of space.
Solve problems involving converting between units of time.	• Understand that the units of time are not decimal, so care needs to be taken with time calculations. • Convert times from analogue time to 24-hour digital time, and vice versa, *e.g. complete time conversion table or investigate TV schedules.* • Work out fractions of time, *e.g. 3.5 hours means 3 hours and ☐ minutes.* • Solve time problems, *e.g. What time is it in Sydney, Australia, when it is 13:00 in London?* • Solve money problems involving changing pounds into pence and vice versa.
Use all four operations to solve problems involving measure [e.g. length, mass, volume, money] using decimal notation, including scaling.	• Solve temperature problems, *e.g. How much hotter / cooler is it in London than New York today?* • Solve measurement problems, *e.g.* ◆ *Find all the measurement attributes of an object such as an orange – juice, mass, surface area, volume.* ◆ *Each tin of paint covers 10 m^2. How many tins of paint would be needed to paint the four vertical walls of this room?* • Solve perimeter and area problems, *e.g. Find the area and perimeter of rectilinear figures from scaled drawings.* • Solve money problems, *e.g.* ◆ *Investigate the cost of sending different parcels by first-class post.* ◆ *Work out sale prices.* ◆ *How much would it cost to carpet a room with a floor area of 35 square metres if it costs £12·99 per square metre?*

Y5 Steps 28–30	Geometry Properties of Shapes	◀Y4 Y6▶

Key Messages

- *Make sure shape and space activities are included in oral and mental starters, including the development of visualisation skills.*
- *Children should use different grids (square, triangular . . .) to draw and transform shapes.*
- *Children should use shapes to solve problems.*
- *Children should recognise shapes in different orientations.*
- *Use shape and space language: scalene triangle, axis of symmetry, reflective symmetry, reflex, acute, obtuse.*

Y5 Steps 28–30	Properties of Shapes Y5
Statement	**Descriptors**
Identify 3-D shapes, including cubes and other cuboids from 2-D representations.	• Recognise, name and visualise an extended range of 3-Dshapes, *e.g. octahedron, a slice of a cone or oblique cylinder.* • Sort photographs / illustrations / diagrams of 3-D shapes and objects by their properties in a variety of ways, explaining what has been done. • Draw recognisable 3-D cuboids (rectangular prisms) on isometric, dotted and squared paper, *e.g. Draw a set of four cubes increasing in size in the same proportion each time.* • Construct a model from a photograph, picture or series of diagrams, *e.g.* ♦ *Make a solid with interlocking cubes, take a digital photograph of it or make a 2-D drawing of it on grid paper, and challenge others to recreate it.* ♦ *Follow diagrams for construction, e.g.* Make a Lego model. ♦ *Work out how many blocks have been used in an illustration of a model or building.* 
Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.	Reflex angles can be found on the internal angles of concave shapes. ⇒ *Draw given angles, and measure them in degrees (°). (Geometry: Properties of Shape, Year 5)* • Know that angles are measured in degrees and that there are 360^0 in one full turn, i.e., 4 right angles. • Label angles in shapes as acute, obtuse, right angle or reflex, comparing them with the known angle of 90^0. • Compare the size of angles, *e.g. Sort pictures or concrete objects into sets by angle size.* • Sort 2-D and 3-D shapes into groups according to whether they have right angles, acute, obtuse and / or reflex angles, *e.g. Venn and / or Carroll diagrams.*
Draw given angles, and measure them in degrees (°).	Circular protractors are a better 'turning' concept than semi-circular ones and also help with reflex angles. ⇒ *Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. (Geometry: Properties of Shape, Year 5)* • Draw and measure angles with a protractor. • Estimate angles, check and become increasingly more accurate (to nearest 90^0, 10^0, 5^0), *e.g. Use an unmarked angle indicator to show an angle of 70° and check with a protractor.*
Identify:	
angles at a point and one whole turn (total 360°);	Working with a floor robot or ICT program will consolidate understanding. • Know that the angles around a point add up to 360°, *e.g. Measure the angles around a point in different pie charts.* • Know that turning one complete turn is a rotation of 360°. 
angles at a point on a straight line and ½ a turn (total 180°);	• Recognise that angles on a straight line add up to 180°, *e.g. From diagrams, be able to say which angles total 180° between them.* • Know that the angles of every triangle always add up to 180^0, *e.g. cut up and fit many different examples.* • Know that turning half a turn is a rotation of 180°.  
other multiples of 90°.	• Know that turning three-quarters of a turn is a rotation 270°. • Know other multiples of 90° turns that are greater than 360°, *e.g. Two turns is 720°.* • Know that the angles of every quadrilateral always add up to 360^0 but that only rectangles have four angles of exactly 90°, *e.g. Cut up and fit many different examples.*
Use the properties of rectangles to deduce related facts and find missing lengths and angles.	• Use conventional markings for parallel lines and right angles, *e.g. When constructing / illustrating a rectangle of given dimensions.* • Solve problems relating to the properties of rectangles, *e.g.* ♦ *A rectangle has sides of 5cm and 12cm. Construct the shape and measure its diagonals.* ♦ *The diagonal of a rectangle is 10.5cm. Draw the rectangle.* ♦ *Investigate angles at the intersection of the diagonals of different rectangles and generalise about them.* ♦ *Investigate the four triangles made by drawing diagonals in a rectangle.* ♦ *Investigate the angles in squares with diagonals drawn.*

Y5 Steps 28–30	Properties of Shapes Y5
Statement	**Descriptors**
Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	• Know that the angles and sides of a regular polygon are always equal, *e.g. Complete a table from measuring a range of polygons, both regular and irregular, and draw conclusions.* • Solve problems involving polygons, *e.g.* ♦ *Investigate the angles and side lengths of parallelograms and make comparison with rectangles.* ♦ *Explain the relationship between the number of sides on a regular polygon and the number of lines of symmetry and / or diagonals that can be drawn.* ♦ *Construct named regular and irregular polygons from given angles and / or side measurements.* ♦ *Combine polygons in different ways to make 3-D shapes and name them,* e.g. Clixi or Polydron.

Polygon Name	Length of sides	Internal angle
pentagon	6cm	108°
pentagon	9cm	108°

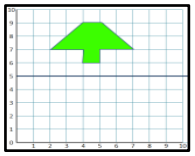
Y5 Steps 28–30	Geometry Position and Direction	◀Y4 Y6▶

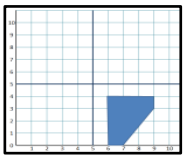
Key Messages

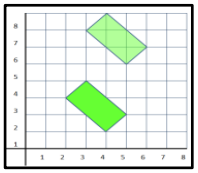
- *An understanding of rotational symmetry is not a requirement in any of the objectives.*
- *Children should recognise shapes in different orientations.*
- *Children need to use different grids (square, triangular…) to draw and transform shapes.*
- *Use position and direction language: parallel, perpendicular, x-axis, y-axis, quadrant, rotation.*

Y5 Steps 28–30	Position and Direction Y5
Statement	**Descriptors**

Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	Symmetry work should extend the work done in Year 4 in *Geometry: Shape and Space*.
	• Explain what translation means as a mathematical term and how it is not the same as reflection.
	• Identify / sort given shapes by whether they are translated, reflected or neither.
	• Describe the movement of two shapes on a co-ordinate grid in the following terms:
	  ◦ type – reflection or translation (no rotation);
	  ◦ direction – horizontally left or right and vertically up or down;
	  ◦ distance – the number of co-ordinate points moved both vertically and horizontally.
	• Translate a simple shape on a co-ordinate grid by a specified number of x points and y points in given directions, *e.g. Use an ICT program, such as Word, make a shape, copy it and translate it. Print it out and say how the shape has moved.* (Keep in first quadrant – no negatives until Year 6 objectives.)
	• Reflect interesting shapes around one axis of symmetry, keeping it in first quadrant, *e.g. A tree above or below a horizontal axis to represent reflection in water. Give the co-ordinates.*
	• Reflect a shape around two axes of symmetry giving the co-ordinates of the other portions, if applicable.
	• Translate simple shapes in directions parallel to the axes of a co-ordinate grid giving the co-ordinates of the new position, *e.g.*
	  ♦ *Work in pairs and both draw a shape the other hasn't seen.*
	  ♦ *Write down the co-ordinates of their shape, translated a specific number of points in any direction, remaining within the first quadrant.*
	  ♦ *Give the instructions to the other who translates it back.*
	  ♦ *Compare the shape.*
	Shapes do not necessarily have to be perpendicular to an axis.
	• Know that translation and reflection of shapes does not change either the shape itself or the size. Only its position changes.





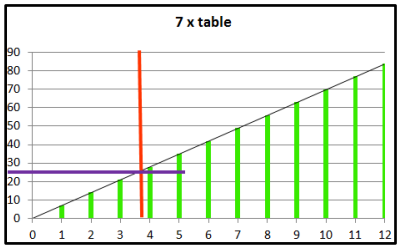


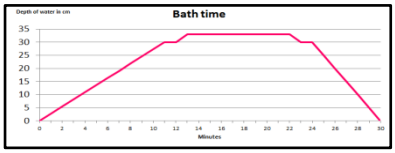
Y5 Steps 28–30	Statistics	◀Y4 Y6▶

Key Messages

- *Remind pupils that they need to be methodical. What is the problem? What do I need to do? How will I collect my data? How will I record my findings? What have I found out?*
- *Pupils need the skills to select appropriate scales when representing findings and must understand the importance of reading scales on graphs accurately.*
- *Only line graphs and tables are included in the Year 5 objectives but make sure that other charts and tables are used in other curriculum areas subjects such as science.*
- *Use statistics language regularly: database, line graph, bar line chart.*

Y5 Steps 28–30	Statistics Y5
Statement	**Descriptors**
Solve comparison, sum and difference problems using information presented in a line graph.	• Know that line graphs are used to present continuous data. • Understand that the tops of the bars on a bar-line column chart can be joined to create a line graph because all the points along the line have meaning; *e.g. Draw and label a line column chart for the 7 times table and join the tops of the lines. Answer questions such as 'What is 84 divided by 7?', 'What is the product of 7 and 7?'* • Work out what each interval on a scaled axis is worth. • Read data accurately, drawing a line or lines, if necessary, onto the graph to read required information accurately; *e.g. Find the approximate answer to 3·8 × 7 or* 40 ÷ 7. • Solve line graph problems, including comparison, sum and difference; *e.g.* ◆ *How quickly after exercise does the heart rate return to normal?* ◆ *What distance was travelled between 10 a.m. and noon?* ◆ *How many pupils have foot lengths between 25 cm and 28 cm?* ◆ *Write a story about this bath time line graph.* ◆ *Create and use conversion line graphs for metric into imperial measures.* ⇒ *Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. (Measurement, Year 5)* ⇒ *Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. (Number: Multiplication and Division, Year 5)*
Complete, read and interpret information in tables, including timetables.	• Decide what calculations need to be done in order to use data to answer a question or solve a problem. • Interpret information given in a two-way frequency table; *e.g. Download a tram, train or bus timetable and ask / answer questions.* • Collate information into a two-way frequency table; *e.g. Construct / complete a frequency table from information supplied, possibly in the form of a word problem.* • Explain orally and in writing how data was used to solve a problem, *e.g.* ◆ *Do children in our class eat enough fruit and vegetables in a week?* ◆ *Use a timetable to work out what time you would need to set off to complete a two-stage journey in time to arrive for 4 p.m.* ◆ *Answer questions about knock out tables.* ◆ *Identify an object or creature using a tree sorting question and answer diagram.*





Inter School Football Knockout Cup			
Team	First Round	Semi-Final	Winners
Team 1			
Team 2			
Team 3			
Team 4			
Team 5			
Team 6			
Team 7			
Team 8			

Year 6: Steps 31-33

Y5/6	Steps 28–30	Reading Word Reading	◀Y3/4
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*			

Y5/6	Steps 28–33	Word Reading Y5/6
Statement		**Descriptors**
Apply their growing knowledge of root words, prefixes and suffixes (etymology and morphology) as listed in English Appendix 1, both to read aloud and to understand the meaning of new words they meet.		See English Appendix 1 and 2 (Y5/Y6) for root words, prefixes and suffixes. Content within this area of learning may be determined by schools' progression mapping. • Read most unfamiliar words with increasing automaticity. • Identify roots words in reading and apply their understanding of how prefixes and suffixes affect meaning, including: ◦ Prefixes: dis, de, mis, over and re, such as: ◊ *dis- disown;* ◊ *de- demist* ◊ *mis- misbehave;* ◊ *over- overcook;* ◊ *re- recycle.* ◦ Suffixes, ate, ise, ify ,able, ible, such as*:* ◊ *-ate donor / donate;* ◊ *-ise critic / criticise;* ◊ *-ify notice / notify;* ◊ *-able change / changeable;* ◊ *-ible sense / sensible.* • Crosscheck deduced meaning of words with context.

Y5 Steps 28–30	Reading Comprehension	◀Y3/4
Key Messages • *All texts used need to be at an age appropriate level.* • *When using this grid for assessment, practitioners should look at SPaG and writing grids.* • *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*		

Y5/6	Steps 28–33	Comprehension Y5/6
Statement		**Descriptors**
Maintain positive attitudes to reading and understanding of what they read by:		
continuing to read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks;		• Read an increasingly extensive range of authors and genres, including: ◦ narrative, *e.g.* ◊ *short stories;* ◊ *stories with flashbacks;* ◊ *parodies;* ◊ *science fiction;* ◊ *author studies;* ◊ *biographies and autobiographies;* ◊ *discussion / argument (journalistic writing, persuasion);* ◦ instruction; ◦ recounts (formal and informal); ◦ persuasive texts; ◦ play scripts / interviews; ◦ poetry. • Self-select texts to demonstrate an increasing motivation both to find out information and extend their personal reading repertoire. • Discuss personal points of view and justify opinions. • Make book recommendations giving reasons for choices. • Discuss and begin to compare genre, themes, settings, events, characters and other aspects of what they read. • Discuss knowledgeably different structures of non-fiction textbooks. • Discuss and compare facts, related to ongoing learning in the classroom, in non-fiction and reference texts. • Recall and discuss texts drawing from an increasing range of books read. • Initiate conversation (verbal or written) about new or interesting books they have discovered for themselves. • Use more sophisticated story language, *e.g. increasingly precise vocabulary choices.* • Compare and discuss themes, settings (time and place), characters and plots linking directly to texts.
reading books that are structured in different ways and reading for a range of purposes;		• Identify and comment on the structure and organisation of a range of texts, *e.g.* ♦ *in reports, how expert opinion may be included to influence the reader;* ♦ *in parodies, how writers exaggerate the style, tone or other characteristics of the original work, making it appear ridiculous;* ♦ *in narratives, how flashback paragraphs can reveal insight into a characters' motives.* • Identify the purpose and audience of a range of text types, *e.g.* ♦ *fiction;* ♦ *non-fiction;* ♦ *plays;* ♦ *poetry;* ♦ *reference or textbooks.*
increasing their familiarity with a wide range of books, including myths, legends and traditional stories, modern fiction, fiction from our literary heritage, and books from other cultures and traditions;		• Over a period of time experience and become familiar with a wide range of book, including: ◦ myths, legends and traditional stories; ◦ modern fiction; ◦ fiction from our literary heritage; ◦ books from other cultures and traditions. • Tell and re-tell stories from a wide range of reading.

Y5/6 Steps 28–33	Comprehension Y5/6
Statement	**Descriptors**
recommending books that they have read, to their peers, giving reasons for their choices;	• Recommend books both orally, visually and in written forms *t*hrough a range of formats, e.g. ♦ *podcasts;* ♦ *PowerPoint presentations;* ♦ *DVD clips;* ♦ *postcards;* ♦ *book reviews;* ♦ *drama opportunities;* ♦ *school events,* such as book awards.
identifying and discussing themes and conventions in and across a wide range of writing;	• Identify and discuss themes, including: ○ heroism; ○ friendship and betrayal; ○ loss; ○ revenge; ○ bullying. • Consolidate learning regarding the conventions of different types of writing *e.g. the use of the first person in writing diaries and autobiographies.* • Continue to extend learning across a wider range of genres and text types.
making comparisons within and across books;	• Make comparisons within and across books that demonstrate understanding of, *e.g.* ♦ *setting;* ♦ *character;* ♦ *plot;* ♦ *voice.*
learning a wider range of poetry by heart;	• Know a wide range of poetry by heart.
preparing poems and plays to read aloud and to perform, showing understanding through intonation, tone and volume so that the meaning is clear to an audience.	• Show an understanding of poems and play scripts by: ○ using appropriate intonation, tone, volume or actions when performing; ○ identifying appropriate intonation, tone, volume or actions in other's performance and offering constructive comments. • Show an understanding of poems and play scripts by using appropriate intonation, tone, volume or actions when performing. • Perform poems and plays with confidence to a range of audiences. • Prepare and perform poems with confidence to a range of audiences.
Understand what they read , in books they can read independently, by:	
checking that the book makes sense to them, discussing their understanding and exploring the meaning of words in context;	• Ask questions of themselves about their understanding of the text. • Discuss understanding with peers or adults to clarify meaning. • Use prior knowledge, what they have read so far and questioning to check meaning.
asking questions to improve their understanding;	• Ask questions to clarify meaning of words, phrases, character's intent, events, plot, setting, and text structure. • Generate questions about the text, *e.g. 'What questions would you like to ask the characters?'* (Might be done through drama and role play, such as hot seating, freeze framing, thought taping, ask the expert, conscience alley)
drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence;	• Using textual references, demonstrate an understanding of inference. • Infer writers' perspectives from what is written and from what is implied. • Answer inferential questions by stating a point, backing it up with evidence from the text and explaining thinking.
predicting what might happen from details stated and implied;	• Make regular predictions about characters, events and actions as they read across a text drawing on knowledge of the world and previous reading, justifying reasons with reference to the text. • Make and justify predictions from what is implied, *e.g. I predict that the bullies will not leave Tom alone and will return to demand more money because it says in the text; "With a smile which didn't reach her eyes, Sonia hissed, "See you soon, Tommy . . . "* • Demonstrate a deepening understanding of inference by explaining the effect of precise vocabulary choices, *e.g. 'Hissing makes me think of a snake. Snakes are dangerous, you can't tell what they are thinking and they hiss before they strike'.*

Y5/6 Steps 28–33	Comprehension Y5/6
Statement	**Descriptors**
summarising the main ideas drawn from more than one paragraph, identifying key details that support the main ideas;	• Skim and scan to identify key words and phrases, incorporating techniques, *e.g.* ♦ *highlighting;* ♦ *annotating;* ♦ *bullet points.* • Identify and use key events or details when summarising, orally rehearsing to check appropriate coverage and clarity. • Discuss, identify and summarise main ideas about how characters feelings, behaviour and relationships change across a text. • Use a range of formats to record summaries, *e.g. Tweets, synopses and postcards.*
identifying how language, structure and presentation contribute to meaning.	• Compare different types of narratives and information texts and identify how they are structured. • Identify how the differences between the language used in fiction and non-fiction, formal and informal writing contributes to meaning, drawing upon a developing understanding of purpose and audience. • Identify how structure and presentation contributes to meaning by exploring and learning the conventions of different text types, *e.g.* ♦ *greetings in letters;* ♦ *a diary written in the first person;* ♦ *bracketed stage directions in play scripts;* ♦ *autobiographies written in the first person;* ♦ *the frequent use of the passive voice to avoid personalisation in non-chronological reports.* • Identify and understand how some presentational devices contribute to meaning, *e.g.* ♦ *shorter and longer paragraphs in narratives;* ♦ *numbering and labelled diagrams / illustrations in instructions;* ♦ *headings, sub-headings, tables, charts, and maps in reports.*
Discuss and evaluate how authors use language, including figurative language, considering the impact on the reader.	• Identify precise language choices made by authors for specific effects. • Identify examples of figurative language considering the impact on the reader, *e.g.* ♦ *simile;* ♦ *metaphor;* ♦ *personification;* ♦ *onomatopoeia;* ♦ *hyperbole;* ♦ *analogy.* • Discuss and evaluate how authors use language for comic and dramatic effects. • Use evidence from the text to demonstrate the impact of language on the reader across a range of texts, *e.g.* ♦ *persuasive language techniques used in adverts, posters or through authorial voice;* ♦ *persuading the reader to consider a character in a certain light.* • Recognise rhetorical devices used to argue, persuade, mislead and sway the reader.
Distinguish between statements of fact and opinion.	• Distinguish between statements of fact and opinion.
Retrieve, record and present information from non-fiction.	• Skim and scan a text to efficiently and quickly locate required information. • Use the presentational features of non-fiction text types to efficiently retrieve, record and present information, *e.g.* ♦ *sub-headings;* ♦ *tables and charts;* ♦ *maps, diagrams and labels.*
Participate in discussions about books that are read to them and those they can read for themselves, building on their own and others' ideas and challenging views courteously.	• Express ideas and viewpoints across a range of genres, justifying their ideas to support their viewpoint, *e.g. interpreting words, phrases, themes, et* • Ask and respond to questions using evidence from the text, contributing confidently in group and whole class sessions. • Listen attentively to the evidence provided by others. • Challenge, with their own evidence, the views of others, using appropriate language structures, *e.g. 'I agree with you that . . . but have you considered . . .?'* • Extend the contribution of others by the use of phrases, *e.g. 'Could you expand on that . . . ?' 'Could you explain your thinking further . . . ?'*

Y5/6 Steps 28–33	Comprehension Y5/6
Statement	**Descriptors**
Explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary.	• Summarise plot, key information, events, and characters, etc., using evidence from the text. • Make notes on and use evidence from a text to explain events or ideas. • Collect and discuss information about what has been read, *e.g. about a character, theme or other aspect.* • Present and explain their findings to peers, asking and answering relevant questions with evidence from the text. • Prepare a formal presentation, supported by notes. • Plan and present a formal debate in groups. • Explain their findings to peers, asking and answering relevant questions with evidence from the text.
Provide reasoned justifications for their views.	• Routinely use evidence from the text when expressing a personal viewpoint, *e.g. 'I believe this because on page . . . it says that . . . '* • Demonstrate an understanding of underlying themes, causes and points of view.

Y5/6	Steps 28 – 33	Writing *Spelling*	◀Y3/4
Key Messages • *Building spelling knowledge is best achieved through a focus on grammar within the teaching of reading and writing.* • *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.* • *Pupils should proof-read their own and other's writing to improve the accuracy and consistency of spelling, knowing strategies for how to make changes, e.g. clapping syllables, indicating tricky part of word, choosing a memory strategy to overcome errors: identifying root word, rules, syllables and phonemes.*			

Y5/6	Steps 28 – 33	*Spelling Y5/6*
Statement		**Descriptors**
Use further prefixes and suffixes and understand the guidance for adding them.		See English Appendix 1 (Y5/Y6) Selection of prefixes and suffixes for Y5/ Y6 is dependent upon the school's progression mapping. • Understand and explain how a prefix changes the meaning of the word, *e.g. identify and collect words with selected prefixes added.* • Understand and explain how a suffix changes the meaning of the word, *e.g. identify and collect words with selected suffixes added.* • Use prefixes and suffixes appropriately in independent writing.
Spell some words with 'silent' letters [for example, knight, psalm, solemn].		• Identify words with silent letters and the placement of the silent letter. • Use words with silent letters in independent writing, spelling them accurately. • Identify possible spelling errors in own writing and use strategies to correct, *e.g.* ♦ *highlighting silent letter;* ♦ *say it silly;* ♦ *phonemes;* ♦ *choose a memory strategy to overcome errors;* ♦ *use the 'look, say, cover, write, check' method to remember how to spell words.*
Continue to distinguish between homophones and other words which are often confused.		• Identify homophones, near-homophones and other words which are often confused. • Be able to match homophones / near-homophones to their meanings, *e.g. play homophone snap.* • Use words accurately in independent writing demonstrating an understanding of meaning.
Use knowledge of morphology and etymology in spelling and understand that the spelling of some words needs to be learnt specifically, as listed in English Appendix 1.		• Use an etymological dictionary to support understanding of word histories. • Use knowledge of morphology and etymology to support accurate spelling of words, *e.g.* ♦ *critic - critical, critically, criticise;* ♦ *aero - aeroplane, aerofoil, aerobatics.*
Use dictionaries to check the spelling and meaning of words.		• Select the definition appropriate to need and spell accurately in independent writing, *e.g. 'to bank' and 'the bank'.*
Use the first three or four letters of a word to check spelling, meaning or both of these in a dictionary.		• Use a dictionary to locate words efficiently.
Use a thesaurus.		• Select and use a word that is appropriate to context, in independent writing, understanding the subtle differences in meaning between suggested word choices, *e.g. furtive, secretive.*

Y5 Steps 28–30	Y6 Steps 31–33	Handwriting and Presentation	◀Y3/4
Key Messages • *Explicit teaching of the skills and processes essential to handwriting must precede, support and inform assessment*			

Y5 Steps 28–30	Y6 Steps 31–33	*Handwriting and Presentation Y5/6*
Statement		**No descriptors required for handwriting**
Write legibly, fluently and with increasing speed by:		
choosing which shape of a letter to use when given choices and deciding whether or not to join specific letters;		
choosing the writing implement that is best suited for a task.		

Y5/6:	Steps 28–33	Composition	◀Y3/4

Key Messages

- *Use of talk for writing, role play, drama, reading, etc., is essential.*
- *Modelling in shared writing must come prior to independent writing.*
- *Write for a range of real purposes and audiences.*
- *When using this grid for assessment, practitioners should look also for evidence from the SPaG and Reading grids.*
- *The reciprocity between reading and writing should ensure that learning which takes place through reading is applied in writing and vice versa.*
- *Progression across year groups will be determined by complexity and range of text type.*

Y5/6:	Steps 28–33	Composition Y5/6
Statement		**Descriptors**
Plan their writing by:		
identifying the audience for and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own; (KPI in Year 6 only)		• Select text type with awareness of: ◦ purpose and audience; ◦ appropriate layout; ◦ text features. • Plan writing integrating appropriate features from a range of models.
noting and developing initial ideas, drawing on reading and research where necessary;		• Record initial ideas drawing on reading and other research, *e.g.* ♦ *text;* ♦ *film;* ♦ *audio;* ♦ *personal experience.* • Identify and record key points. • Organise and integrate key points into an appropriately selected planning format for writing. • Develop key points by adding some detail.
in writing narratives, considering how authors have developed characters and settings in what pupils have read, listened to or seen performed.		• Plan the development of settings and characters using an increasingly sophisticated range of detail drawn from what has been read, listened to or seen performed, considering, *e.g.* ♦ *description, (physical and dress);* ♦ *actions and responses;* ♦ *dialogue, gestures and expression.*
Draft and write by:		
selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning;		• Use a range of sentence constructions incorporating appropriate grammar and precise vocabulary choices to change and enhance meaning, *e.g.* ♦ *Understand that tension and suspense can be created by deliberate placement of adverbs within a sentence, such as.:* Slowly, his hand moved towards the knocker. His hand moved, slowly, towards the heavy, black knocker. ♦ *Use sentences which include a relative clause, such as:* The piranhas circled the diver. The piranhas, which were ready for lunch, circled the diver. The piranhas circled the diver, who was unaware of the imminent danger. ♦ Manipulate the position of adverbial phrases for best effect, such as: It loomed up at them, dark and dangerous. Faint and wispy, the glow moved from window to window. • Choose and use vocabulary typical of informal and formal speech, in writing, demonstrating an understanding of how choice is dependent upon purpose and audience. ⇒ *Linking ideas across paragraphs using a wider range of cohesive devices . . .. (VG&P, Year 6)*
in narratives describing settings, characters and atmosphere, integrating dialogue to convey character and advance the action; (KPI in Year 6 only)		• Use expressive or figurative language, such as metaphor and personification, to create a setting and atmosphere, *e.g. by describing how the setting makes characters feel and adding details of sights and sounds.* • Use dialogue to convey character and advance action, e.g. ♦ *Hesitating, he stammered, "M…may I have s s some more?" More?" roared the beadle, "Bring that boy to me!"* ♦ *Then, with a shake of his head, their leader replied, "We must enter. Whatever the cost, we MUST enter."*
précising longer passages;		• Identify and record key points from longer passages. • Summarise a longer piece of text into a cohesive paragraph.

Y5/6: Steps 28–33	Composition Y5/6
Statement	**Descriptors**
using a wide range of devices to build cohesion within and across paragraphs;	• Use a wider range of devices to build cohesion within paragraphs, *e.g.* ♦ *determiners;* ♦ *pronouns;* ♦ *synonyms;* ♦ *adverbials of:* ◊ *time,* e.g. later; ◊ *place,* e.g. nearby; ◊ *sequence,* e.g. secondly; ♦ *causal conjunctions and tense choices,* e.g. 'He had seen her before.' • Use a wider range of devices to build cohesion across paragraphs, *e.g.* ♦ *deliberate reference to previous points made;* ♦ *order of paragraphs;* ♦ *precise tense choices,* e.g. 'Only moments earlier he had . . . '; ♦ *repetition of a word or phrase;* ♦ *ellipsis.* ⇒ *Linking ideas across paragraphs using a wider range of cohesive devices . . .. (VG&P, Year 6)*
using further organisational and presentational devices to structure text and to guide the reader [for example, headings, bullet points, underlining].	• Confidently use organisational and presentational devices to structure text and guide the reader, including: ○ headings (titles) and sub-headings; ○ photographs, diagrams and illustrations; ○ font size and style, *e.g. bold, italic, underlining, capitalisation;* ○ layout features, *e.g. bullet points, boxed text;* ○ tables and charts; ○ structure, *e.g. short or long paragraphs;* ○ quotations; ○ others, *e.g. flashback paragraphs to change the chronology of a narrative or reveal insight into characters' motives.* ⇒ *Layout devices, such as headings, sub-headings, columns, bullets, or tables,. . .. (VG&P, Year 6)*
Evaluate and edit by:	
assessing the effectiveness of their own and others' writing;	• Read aloud their own and others' writing to assess its effectiveness. • Make suggestions for improving own and others' writing.
proposing changes to Vocabulary, Grammar and Punctuation to enhance effects and clarify meaning;	• Propose changes to own and others' writing, *e.g. peer / self-assessment.* • Justify proposed changes to own and others' writing.
ensuring the consistent and correct use of tense throughout a piece of writing; (KPI in Year 6 only)	• Identify verbs which indicate tense and check for consistency within paragraphs and across the whole text, *e.g. flashback paragraphs.*
ensuring correct subject and verb agreement when using singular and plural, distinguishing between the language of speech and writing and choosing the appropriate register.	• Identify the subject and verb within sentences. • Check to ensure correct subject verb agreement, distinguishing between the language of speech and the writer's voice.
Proof-read for spelling and punctuation errors.	• Identify possible spelling and punctuation errors and know strategies for making changes. • Check accurate use of punctuation covered including: ○ semi-colons; ○ colons; ○ dashes to mark the boundary between independent clauses. • *Punctuation. (VG&P, Year 6)*
Perform their own compositions, using appropriate intonation, volume, and movement so that meaning is clear.	• Perform their own compositions, responding appropriately to an increasing range of punctuation cues. • Demonstrate an increasing confidence and control when performing to engage the audience and clarify meaning by: ○ varying intonation, *e.g. emphasise words or pause for effect;* ○ tone and volume; ○ movement, *e.g. scanning the audience and gesture*.

Y6 Steps 31-33	Vocabulary, Grammar and Punctuation	◀Y5

Key Messages

- *Building this knowledge is best achieved through a focus on grammar within the teaching of reading and writing.*
- *When using this grid for assessment, practitioners should look also for evidence from the Reading and Writing grids.*
- *Pupils should proof-read their own and other's writing to improve the accuracy and consistency of:*
  - *the content, with particular reference to the element of vocabulary choice, grammar or punctuation being studied;*
  - *spelling, knowing strategies for how to make changes,* e.g. clapping syllables, identifying tricky pars of words, choosing a memory strategy to overcome errors: identifying root word, rules, syllables and phonemes.
- *Develop their understanding of the concepts set out in English Appendix 2 (Year 6).*

Y6 Steps 31-33	Vocabulary, Grammar and Punctuation Y6
Statement	**Descriptors**
Word content to be introduced (statutory requirement):	
The difference between vocabulary typical of informal speech and vocabulary appropriate for formal speech and writing (e.g. find out – discover; ask for – request; go in – enter).	• Identify purpose and audience and then, through comparison and analyses of texts, the differences between vocabulary typical of informal speech and vocabulary appropriate for formal speech and writing. • Demonstrate an understanding of the above by using them appropriately in writing.
How words are related by meaning as synonyms and antonyms (e.g. big, large, little).	• Show how words are related by meaning as synonyms and antonyms, *e.g. generate word lists.* • Use a thesaurus to find synonyms and antonyms and use appropriately in own writing.
Sentence content to be introduced (statutory requirement):	
***Use of the passive to affect the presentation of information in a sentence [for example,* I broke the window in the greenhouse *versus* The window in the greenhouse was broken (by me)].**	• Identify, within text, the use of passive voice and discuss the impact upon the reader. • Use active or passive voice appropriately in writing.
The difference between structures typical of informal speech and structures appropriate for formal speech and writing (such as the use of question tags, e.g. He's your friend, isn't he?, or the use of subjunctive forms such as 'If I were' or 'Were they to come' in some very formal writing and speech).	• Identify purpose and audience and then, through comparison and analyses of texts, examples of structures typical of informal speech and formal speech and writing, *e.g.* ♦ *question tags,* such as 'She's sure to win, isn't she?' ♦ *subjunctive forms, such as:* ◊ *wish, e.g. 'I wish that I had a puppy of my own.';* ◊ *possibility, e.g. 'If I were a superhero I would fly to school every day.';* ◊ *opinion, e.g. 'I'm the fastest runner in this school.'* • Use structures typical of informal speech and formal speech appropriately in their writing.
Text content to be introduced (statutory requirement):	
Linking ideas across paragraphs using a wider range of cohesive devices: repetition of a word or phrase, grammatical connections (e.g. the use of adverbials such as on the other hand, in contrast, or as a consequence), and ellipsis.	• Identify, within text, the range of devices used to link ideas across paragraphs, *e.g.* ♦ *pronouns;* ♦ *synonyms;* ♦ *adverbials of:* ◊ *time, e.g. later;* ◊ *place, e.g. nearby;* ◊ *sequence, e.g. secondly;* ♦ *tense choices (he had seen her before).* • Use a wider range of devices (including the above) to build cohesion across paragraphs, *e.g.* ♦ *deliberate reference to previous points made;* ♦ *order of paragraphs;* ♦ *use of precise tense choices,* such as 'only moments earlier he had . . . '; ♦ *repetition of a word or phrase;* ♦ *repetition of a word or phrase;* ♦ *ellipsis;* ♦ *grammatical connections as in the use of adverbials, such as 'On the other , . . ', 'In contrast, . . . ', 'As a consequence, . . . '.* ⇒ *Draft and write by selecting appropriate grammar and vocabulary, . . (Composition, Year 5/6)* ⇒ *Draft and write by using a wide range of devices to build cohesion .. (Composition, Year 5/6)*

Y6 Steps 31-33	Vocabulary, Grammar and Punctuation Y6
Statement	**Descriptors**
Layout devices, such as headings, sub-headings, columns, bullets, or tables, to structure text.	• Identify and understand how some presentational devices contribute to meaning, *e.g.* ♦ *headings (titles) and sub-headings;* ♦ *photographs, pictures, labelled diagrams;* ♦ *font size and style (bold, italic, etc.);* ♦ *bullet points, numbers;* ♦ *columns;* ♦ *boxed text;* ♦ *tables, charts and maps.* ⇒ *Draft and write by using further organisational and presentational devices to structure text and to guide the reader [for example, headings, bullet points, underlining]. (Composition, Year 6)*
Punctuation content to be introduced (statutory requirement):	
Use of the semi-colon, colon and dash to mark the boundary between independent clauses (e.g. It's raining; I'm fed up).	• Identify and discuss, within text, the function and effect of semi-colons, colons and dashes to mark the boundary between independent clauses. • Demonstrate an understanding of the above by using them appropriately in writing.
Use of the colon to introduce a list and use of the semi-colons within lists.	• Identify and discuss, within text, the function and effect of colons when used to introduce a list, understanding when this is appropriate, *e.g.* *'I want the following: butter, sugar, and flour.'* *(correct)* *'I want: butter, sugar, and flour.'* *(colon inappropriate when it directly follows a verb or preposition)* • Identify and discuss, within text, the function and effect of semi-colons within lists, understanding when this is appropriate, i.e., to separate items in a list when one or more items contain a comma, *e.g. 'As part of our topic work this year we will be visiting: the Lambing Barn, Whirlow Hall Farm; the Egyptian display, Western Park Museum; and the Counting House, Abbeydale Industrial Hamlet.'*
Punctuation of bullet points to list information.	Identify and discuss within text: • how the punctuation of bullet points to list information may differ according to choice but must remain consistent throughout a text ; • how, when you read the stem and a bullet point together, the text should make sense, *e.g.* *For sports day, children will need to bring:* ▪ *shorts and T-shirt* ▪ *trainers* ▪ *waterproof clothing* *or* ▪ *Shorts and T-shirt* ▪ *Trainers* ▪ *Waterproof clothing*
How hyphens can be used to avoid ambiguity (e.g. man eating shark versus man-eating shark, or recover versus re-cover).	• Identify and discuss, within text, how hyphens can be used to avoid ambiguity, *e.g.* ♦ *Everyone was frightened of the man-eating snake.* *The headline read: Man Eating Snake Captured* ♦ *The teacher asked me to re-cover my book because it was torn* *It took me two weeks to recover from measles.*
Terminology for pupils content to be introduced (statutory requirement):	
Use and understand the grammatical terminology in English Appendix 2 (Year 6) accurately and appropriately when discussing their writing and reading: *subject, object;* *active, passive;* *synonym, antonym;* *ellipsis, hyphen, colon, semi-colon, bullet points.*	• Use accurate grammatical terminology when analysing text and explain the impact created. • Use accurate terminology when discussing how grammar has been used to create effect within writing.

Y6 Steps 31–33	Number Number and Place Value	◀Y5
Key Messages • *Counting is a key activity and most learning about calculation will be based on this, especially as a basis for fractions.* • *Children need opportunities to explain their work and reasoning.* • *Apply rounding principles into calculation activities.* • *Number and Place Value vocabulary: greater than or equal to, less than or equal to, ascending / descending order, is approximately equal to, round to the nearest thousand.*		

Y6 Steps 31–33	Number and Place Value Y6
Statement	**Descriptors**
Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.	• Recall how to read large numbers by counting the digits to the left of any decimal place in chunks of three. • Write out the partitioning for any number up to 10 million. • Know what each digit is worth in a number, *e.g. There are two 5s in this number, how much is each worth? 45, 327,651.* • Order a set of numbers up to 10,000,000, including those with up to three-decimal places. • Compare a set of numbers up to 10,000,000, including those with up to three-decimal places. ⇒ *Solve number and practical problems that involve all of the above. (Number: Number and Place Value, Year 6)* ⇒ *Multiply multi-digit numbers up to 4 digits by a two-digit whole number. (Number: Addition, Subtraction, Multiplication and Division, Year 6)*
Round any whole number to a required degree of accuracy.	Large numbers can found be in practical contexts in distances, heavy objects, vast containers, the universe, archaeological eras, populations, mountain peaks, etc. • Round large numbers to the nearest power of 10 required, using the most significant digit for the task. (This extends the work from Year 5 by one more power of 10.) • Round decimals to the nearest whole number or to one-, two- or three-decimal places. ⇒ *Solve problems which require answers to be rounded to specified degrees of accuracy. (Number: Fractions, including decimals and %, Year 6)* • Make appropriate decisions about the power of 10 to round to, *e.g. for the number of children in a school, grains of sand in a bucket or spectators at a football match.* • Estimate the position of numbers on a number line with different starting and finishing points and justify, *e.g. Suggest which number lies about two-fifths of the way along a line from 0 to 1,000,000 line, or a line from 0 to 1.* • Use rounding to find an approximate answer when checking calculations. ⇒ *Solve number and practical problems that involve all of the above. (Number: Number and Place Value, Year 6)*
Use negative numbers in context, and calculate intervals across zero.	• Count forwards and backwards across zero from different starting points and in different steps, including some decimals, *e.g. 0·5s.* • Order a set of positive and negative numbers, *e.g. on a number line.* • Find the difference between pairs of negative numbers, or one positive and one negative number, in context, *e.g. transactions with a bank account.* ⇒ *Solve number and practical problems that involve all of the above. (Number: Number and Place Value, Year 6)*
Solve number and practical problems that involve all of the above.	• Solve problems involving ordering and comparing large numbers, *e.g. Order major world cities by population.* • Solve problems requiring rounding to different degrees of accuracy, *e.g. Round the number of children in a school to the nearest 50.* • Solve problems with negative numbers, *e.g. negative bank balances and owing money.* ⇒ *Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. (Number: Number and Place Value, Year 6)* ⇒ *Round any whole number to a required degree of accuracy. (Number: Number and Place Value, Year 6)* ⇒ *Use negative numbers in context, and calculate intervals across zero. (Number: Number and Place Value, Year 6)*

Y6 Steps 31–33	Number Addition, Subtraction, Multiplication and Division	◀Y5 +- ◀Y5 X÷
Key Messages • *Children must understand the use of zero as a place-holder in decimal numbers such as 0.07 and appreciate where zeros are not necessary,* e.g. the zero at the end of 1·30. • *Give children frequent opportunities to explain their choice of calculation method compare methods with others and discuss the efficiency of different methods.* • *Apply calculation skills to solve increasingly complex multi-step problems.* • *Use language of multiplication and division: factorise, prime factor, common factor, common multiple.*		

Y6 Steps 31–33	Addition, Subtraction, Multiplication and Division Y6
Statement	**Descriptors**
Multiply multi-digit numbers up to 4 digits by a two-digit whole number.	⇒ *Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. (Number: Place Value, Year 6)* • Estimate results and check them for reasonableness against the outcome. • Recognise column value within formal procedures, *e.g. Understand that multiplying 6 by 4 might be 2·4, 24, 240, etc., depending on the place value of the digits.* • Accurately multiply multi-digit numbers up to four digits by a two-digit whole number. ⇒ *Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. (Number: Addition, Subtraction, Multiplication and Division, Year 6) continues with formal written methods which are not required for the KPI.*
Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.	⇒ *Multiply multi-digit numbers up to 4 digits by a two-digit whole number. (Number: Addition, Subtraction, Multiplication and Division, Year 6) is the KPI part of this objective.* Decimal places are introduced in formal written methods for the first time in Year 6. • Understand and use the grid method for multiplication involving decimal numbers. • Be secure with formal written methods for Th H T U × T U. • Use formal written methods for calculations involving one decimal place. • Use formal written methods for calculations involving two decimal places. • Use formal written methods for numbers with up to three decimal places.

Divide numbers up to 4 digits by a two-digit whole number and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.	⇒ *Divide numbers up to 4 digits by a one-digit number using the formal written method of short division. (Number: Multiplication and Division Year 5)*
	• Estimate results and check them for reasonableness against the outcome.
	• Interpret the result of the division in context of the problem, including:
	  ◦ extracting the quotient and / or the remainder as required;
	  ◦ interpreting remainders in context of the question and present as a mixed number, a fraction, a decimal, a number that is rounded up or down to a specific number of places.
	• Understand number facts in context of the column values and position within written methods of division.
	• Know that zeros may need to be added to calculate an answer to a problem that has a remainder, *e.g. share £1,447 equally between 4 people (£361·75).*

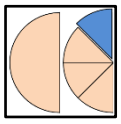
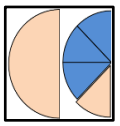
Divide numbers up to 4 digits by a two digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.	See Mathematics programmes of study: key stages 1 and 2: Mathematics Appendix 1 (formal methods). ⇒ *The first part of this objective is outlined under 'Divide numbers up to 4 digits by a two-digit whole number and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.' (Number: Addition, Subtraction, Multiplication and Division, Year 6)* • Use formal written methods for short division. • Use formal written methods for division of up to four-digit numbers by a two-digit number (long division).
Perform mental calculations, including with mixed operations and large numbers.	• Make effective choices about calculation methods, based on the numbers involved. • Use mental jottings and record them accurately and tidily. • Use number bonds, extended number bonds, related subtraction facts and strategies learned over time to find the most efficient solutions to addition and subtraction problems. • Continue to use all the multiplication tables to calculate mathematical statements. • Derive related multiplication and division facts for numbers, drawing on knowledge of number facts and place value, *e.g. 120 × 700 or 48,000 ÷ 120 or 0·8 × 90 or 6·4 ÷ 80.* • Refine strategies for simplifying calculations, *e.g. 400 × 97 = (400 × 100) - (40 × 3).* • Mentally calculate mixed operations problems, *e.g. I'm thinking of a number that is the multiple of 30 and 40. From this I have subtracted the square of 7. What's my number?*

Y6 Steps 31–33	Addition, Subtraction, Multiplication and Division Y6
Statement	**Descriptors**
Identify common factors, common multiples and prime numbers.	⇒ *Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. (Number: Fractions, including Decimals and Percentages, Year 6)* • Explain the mathematical meaning of common factor, common multiple and prime number. • Find common factors of given numbers, *e.g. Find the common factors of 36 and 15.* • Find common multiples / lowest common multiple of given numbers, *e.g. Find common multiples of 6 and 8 by drawing hops on a number line, or colouring numbered grids.* • Identify prime numbers by applying knowledge of multiples and tests of divisibility.
Use their knowledge of the order of operations to carry out calculations involving the four operations.	⇒ *Express missing number problems algebraically. (Algebra, Year 6)* • Appreciate that, in an equation, a calculation inside brackets must be calculated first. • Know the order of calculating operations is **B**rackets, **I**ndices (powers), **D**ivision, **M**ultiplication, **A**ddition, **S**ubtraction – **BIDMAS**. • Practise calculating equations with brackets and mixed operations using the BIDMAS principle, *e.g.* ♦ *45 + (9^2 × 2).* ♦ *230 + 1045 × (15 – 6).* • Explore how grouping numbers together in different ways can affect the outcome, *e.g.* ♦ *How many different answers can be found by placing brackets round one or more pairs of adjacent numbers in a series of numbers such as 35 - 5 + 6 x 4 ÷ 2?* • Apply the correct order of operations when solving problems, *e.g.* ♦ *Butter costs £4.50 for 1 kg. Marie buys 200 grams of butter. How much does she pay?* ♦ *A box contains 220 matches and weighs 33 grams. The empty box weighs 12 grams. Calculate the weight of one match.*
Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	• Understand, and interpret correctly, mathematical vocabulary in word problems, *e.g. 'Find the difference' is subtraction, the word 'more' can appear in a subtraction problem.* • Apply the correct order of operations when solving problems. • Explain how a problem can be solved. • Estimate results and check them for reasonableness against the outcome. • Solve multi-step problems involving addition and subtraction, including decimals, *e.g. SATS past papers, measures and money problems.*
Solve problems involving addition, subtraction, multiplication and division.	• Explain to somebody else how a problem might be solved to clarify thinking. • Create a sequence of steps with jottings and / or diagrams to showing the processes necessary to solve the problem and the order of operations. • Estimate results and check them for reasonableness against the outcome. • Solve word problems or equations involving the four rules, *e.g.* ♦ *Explore square numbers for extended multiplication times tables facts,* e.g. 80 × 80 = 6,400; ♦ *Compare the length, width, height, capacity and draught of two different sailing vessels;* ♦ *Find the differences in population of major world cities.* • Solve scaling problems, *e.g.* ♦ *Work out price increases of 10% on different items.* ♦ *Re-draw diagrams to scale.* ♦ *Find approximate metric to imperial equivalences,* e.g. 8km ≈ 5 miles. ⇒ *Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. (Number: Ratio and Proportion)* • Solve missing values and sequence problems, e.g. ♦ *Find two numbers with a product of 899.* ♦ *Write in the missing number: 32·45 ×□= 253·11.* ♦ *3·2 ÷ n = 0·4;* ♦ *Place a different two-place decimal in each box to make the calculation correct: □+ □+ □= 1.* ♦ *London to Sydney is 10,571·387 miles. London to Singapore is 6,766·86 miles. How much further is it from London to Sydney than London to Singapore?*
Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	• Estimate results and check them for reasonableness against the outcome. • Make estimations in practical contexts, *e.g. The volume of a cuboid, the area of a playground, the weight of objects.* • Round answers to the nearest or the specified power of 10. • Refine the rounding of answers to a specified degree of accuracy that is not necessarily a power of 10, *e.g. Round to the nearest, 20, 50, etc.*

Y6 Steps 31–33	Number Fractions, including Decimals and Percentages	◀Y5

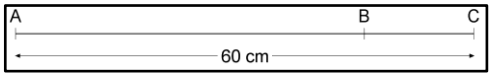
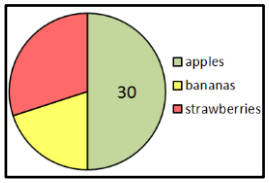
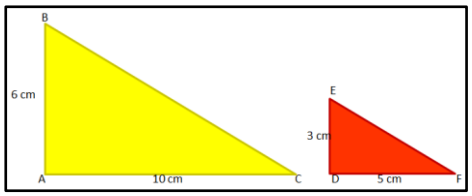
Key Messages

- *Understand that multiplying fractions together makes the answer smaller and dividing makes the answer larger.*
- *Count on number lines / number hoops to show equivalences between simple fractions, decimals and percentages.*
- *Understand the link between division, proportion and fractions, e.g. 2 ÷ 3 and 2 out of 3 can both be described as ⅔.*
- *Utilise opportunities to link decimals, fractions and percentages with ratio and proportion.*
- *Understand that multiplying or dividing both the numerator and denominator of a fraction by the same number produces an equivalent fraction.*
- *Use common factors to reduce fractions and ratios to their simplest forms.*
- *Use language of fractions: proper/improper fraction, mixed number, numerator, denominator, equivalent, reduced to, cancel, percentage, per cent, %, thousandth.*

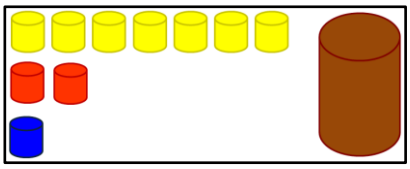
Y6 Steps 31–33	Fractions, including Decimals and Percentages Y6
Statement	**Descriptors**
Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.	⇒ *Identify common factors, multiples and prime numbers. (Addition, Subtraction, Multiplication, Division, Year 6)* • Find common factors of two or more numbers and relate to finding equivalent fractions. • Know that finding the greatest common factor of two or more numbers is the quickest way to simplify fractions. • Simplify fractions, including remainders after division, by cancelling common factors of the numerator and denominator, *e.g. Divide the numerator and the denominator of 14/35 by 7 to simplify to 2/5.* • Know that a common multiple is a number that is a multiple of two or more numbers. • Be able to find the least common multiple (LCM) of two numbers, i.e., the smallest number (not zero) that is a multiple of both, to express fractions in the same denomination.
Compare and order fractions, including fractions > 1.	• Recall and explain the terms denominator, numerator, common denominator. • Understand the relationships between common fractions through practical experience, *e.g. ⅐ is smaller than ⅙ and ⅙ is half of ⅓.* • Use patterns to predict and test similar relationships, *e.g. 1/10 is half of ⅕.* • Solve problems involving fractions such as: ♦ What fraction lies halfway between 3/10 and 7/10? ♦ Which of these fractions is less than ½? 7/10, 60/100, 2/5, 1/10, 11/20, 1/20. ♦ Order a set of fractions in which some are not in their lowest form.
Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.	• Mentally recall multiples of two or three numbers in readiness for finding common denominators, *e.g. A multiple of 5 and 6 is 30 and another is 60, a multiple of 3 and 5 and 2 is 30, etc.,* • Find all the factors of a given number, *e.g. Which numbers divide into 30?* • Understand that to make equivalent fractions scaling is used. • Mentally calculate some equivalent fractions using multiplication and division facts. • Add and subtract two fractions with different denominators in the same fraction family by changing one fraction into an equivalent fraction with the same denominator, *e.g. 1½ + 2⅞ = 3 + ⅝ + ⅞ = 3 + 1⅛ = 4⅜.* • Know that to add and subtract two fractions from different fraction families both fractions need to be changed to an equivalent fraction with the **same** denominator, *e.g. 1⅓ + ⅕ = 1 + 5/15 + 3/15 = 1⅘.* • Explain why the numerator is 'added' or 'subtracted' and the denominator remains the same.
Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, ¼ x ½ = ⅛].	Be aware that pupils often think that the process of multiplying will produce a larger answer. • Use models and images to explain and describe how fractional parts can themselves be divided into fractions, writing equations for the outcome, *e.g.* ♦ *One-quarter of one-half is ¼ × ½ = ⅛.* ♦ *Three-quarters of one-half is ¾ × ½ = ⅜.* • Use known answers to understand how equations can be calculated without the need for drawings, i.e., multiplying numerator by numerator and denominator by denominator. • Understand that when multiplying proper fractions together the answer is always smaller than the starting quantity and use this to check if answers make sense. • Know that a proper fraction multiplied by a proper fraction is always less than 1. • Calculate answers without the need for diagrams.  
Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6].	• Be able to visualise a fraction being shared into equal parts, *e.g. Sharing ⅓ of a pizza between 2 would result in there being ⅙ each.* • Use known answers to equations to understand how equations can be calculated without the need for drawings, i.e., when dividing a proper fraction by a whole number the numerator remains the same and the denominator is divided by the whole number. • Calculate answers without the support of diagrams. 

Y6 Steps 31–33	Fractions, including Decimals and Percentages Y6
Statement	**Descriptors**
Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8].	It makes sense to include percentages here in some activities. • Recall that ½ is the same as 1 ÷ 2 and ⅘ is the same as 4 ÷ 5, etc. • Explore dividing the numerator by the denominator for a systematic set of unit fractions (½, ⅓, ¼, etc.) noting that some of them 'never end' (recurring number patterns), *e.g. Could use a calculator for this and generalise about the results.* • Know that fractions with recurring decimal equivalents are rounded to 2 or 3 decimal places (in context), *e.g. ⅓ = 0·33 or 0·333, ⅔ = 0·67 or 0·667.* • Use standard written methods to find the decimal equivalents for unit and non-unit fractions, *e.g. ⅜ = 3 ÷ 8 = 0·375.*
Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.	• Say, read and write numbers up to 10,000,000 with decimal fractions accurately. • Understand that the value of adjacent columns is ten times more to the left or ten times less to the right. • Place one-, two- and three-decimal place numbers accurately on number lines. • Explain why a place keeping 0 may be necessary. • Consolidate understanding of multiplication by 10, 100 and 1000 as movement of place not the 'adding of 0s', *e.g. Adding two 0s to 3·4 when multiplying by 100 produces the wrong outcome.* • Know the value of each digit of any number up to 10,000,000 with up to three decimal places. • Order a set of decimal numbers in ascending / descending order recognising that the left-most, non-zero column is the most significant.
Multiply one-digit numbers with up to two decimal places by whole numbers.	Practise 'informal' methods of recording with decimals before moving onto formal columnar methods. • Multiply a number less than 10 with one decimal place by whole numbers in practical contexts, *e.g. Two pieces of tape each 0·4 m long are needed for a cushion cover. How much tape must be bought?* • Multiply a number less than 10 with two decimal places by a whole number, *e.g. Each box weighs 0·45 kg. How much do 7 boxes weigh? (Estimation 0·5 x 7 is 3·5 so it will be between 3 kg and 3·5 kg.)* • Estimate answers to calculations, by rounding accurately, to get an idea of the magnitude of the answer and check answers for sense. • Solve multiplication problems, *e.g. Place three digits to make a U·t × U calculation and find examples where the answer is a whole number, e.g. 4·2 × 5.*
Use written division methods in cases where the answer has up to two decimal places.	See Mathematics programmes of study: key stages 1 and 2: Mathematics Appendix 1 (formal methods). • Estimate and check answers to calculations, by rounding accurately, to get an idea of the magnitude of the answer. • Refine estimates. • Check answers using inverse operations. • Recognise and appreciate column place value within the formal written method. • Use written division methods in cases where the answer has up to two decimal places.
Solve problems which require answers to be rounded to specified degrees of accuracy.	Recurring fractions will always need rounding. • Decide, in context of the problem, what to do with a remainder – round up, round down, ignore. • Decide, in context of the problem, how many decimal places should be presented. • Solve problems, *e.g.* ♦ *A bill of £9·50 is shared equally between 4 people. What is the minimum each needs to pay?* ♦ *How many portions of cheese weighing 100 g each can be cut from a block that is 824 g?* ♦ *Pizzas are £1·49 each. They are packed in boxes of 20. How much will a box cost to the nearest pound?* ♦ *A carpenter cuts a plank of wood that is 3·73 m long into 5 equal pieces. What is the length of each piece in cm?* ♦ *Pencil boxes are 0·18 m long. How long would a carton need to be to put 9 boxes end to end?* ⇒ *Round any whole number to a required degree of accuracy. (Number: Number and Place Value, Year 6)*
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	⇒ *Solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and the use of percentages for comparison. (Number: Ratio and Proportion, Year 6)* ⇒ *Interpret pie charts and line graphs and use these to solve problems. (Statistics, Year 6)* • Simplify fractions to their lowest term when presenting answers. • Find the fraction / percentage that one number is of another, *e.g. What fraction or % of 60 is 45?* • Find equivalent fractions, both fraction notation and decimals, to aid efficiency when calculating. • Recognise and use fractional and decimal equivalents when calculating with percentages, *e.g. 25% = 25/100 = 0·25 = ¼, so to find 25% divide by 4.* • Solve related problems, *e.g. Which of these are equivalent amounts?* 0·4, ⅓, 40%, 0·3, ⅖, 0·75, 6/15.

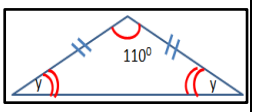
Y6 Seps 31–33	Ratio and Proportion	
Key Messages • *Interactive pie charts are very useful for understanding all the elements of ratio and proportion.* • *The language of ratio and proportion should be used frequently and together, including relating this to fractions and percentages.* • *Children should use their knowledge of common factors to help them reduce ratios to their simplest forms.* • *Children need to understand the link between division, proportion and fractions.* • *Use language of ratio and proportion: proportion, ratio, in every, for every, to every, as many as, %.*		

Y6 Steps 31–33	Ratio and Proportion Y6
Statement	**Descriptors**
Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.	⇒ *Solve problems involving addition, subtraction, multiplication and division. (Number: Addition, Subtraction, Multiplication and Division, Year 6)* • Understand that scaling involves increasing / decreasing a quantity by a given factor, *e.g. if 100g of rabbit food costs 70p then 200 g would cost £1·40 and 50 g would cost £·35.* • Solve problems using integer multiplication and division, *e.g.* ♦ *A pet food recipe gives amounts to fill 6 sacks. Explain how you would change the amounts to fill 2 sacks.* ♦ *Complete a recipe for different amounts of people (see table).* ♦ *Interpret map scales and say what real-life distances would be.* ♦ *The distance from A to B is three times as far as from B to C. The distance from A to C is 60 centimetres. Calculate the distance from A to B.* **Eggless Fruit Cake** | Ingredients | 3 people | 8 people | 2 people | | Butter | | 200 g | | | Milk | 120 ml | | | | Flour | | | 80 g | | Raisins | | 40 g | | | Cherries | 75 g | | | 
Solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and the use of percentages for comparison.	⇒ *Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. (Number: Fractions, Year 6)* • Use known strategies for finding percentages of amounts, *e.g. One-quarter is 25% so 25% of £1.60 can be found by quartering (halving and halving again).* • Understand that the same percentage of one amount or quantity will not be the same as that of a different amount or quantity, *e.g. 20% of 500 g is not the same as 20% of 100 g.* • Understand that a smaller percentage of an amount might be larger or smaller than a larger percentage of another, *e.g. 10% of 100 is greater than 25% of 20.* • Link percentages of 360° to calculating angles of a pie chart and relate these to fractions. • Solve proportional and percentage problems by finding equivalent fractions and then scaling, *e.g.* ♦ *6 boxes out of the 50 boxes of strawberries collected were spoilt. What % of the strawberries was spoilt?* ♦ *In a sale shirts that should have cost £50 were reduced to £25. What percentage discount was given?* ♦ *Which is the most, 40% of 3 ℓ or 55% of 2 ℓ?* ♦ *What percentage of pupils had a banana at breakfast club this morning? How many pupils is that? What is the ratio of apples:strawberries:bananas?*  ⇒ *Interpret pie charts . . . and use these to solve problems. (Statistics, Year 6)*
Solve problems involving similar shapes where the scale factor is known or can be found.	• Know that when two figures are similar, the ratios of the lengths of their corresponding sides are equal and all their corresponding angles are equal. • Recognise similar (proportional) shapes within a mixed set of shapes, *e.g. Match similar triangles on a sheet of triangles where not all the triangles are similar and explain what has been done.* • Scale shapes up and down to make them proportionately larger and smaller, *e.g.* ♦ *A triangle has sides of 3cm, 4cm and 5cm. If the longest side was increased to 12.5 cm, how long would the other sides be?* ♦ *Draw a rectangle. Now draw 2 other, similar rectangles - one bigger and one smaller. Explain what has been done.* ♦ *Use drawing tools in computer programs to produce different scaled models.* 

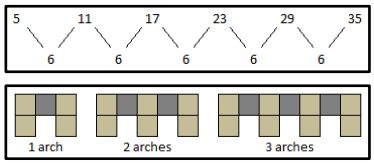
Y6 Steps 31–33	Ratio and Proportion Y6
Statement	**Descriptors**
Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	General Skills • Know that proportion describes the relationships between two or more quantities of the same kind. • Know that there could be any number / measure in the count when expressing proportion. • Know that proportion can be expressed as ratios, fractions and percentages, *e.g.* ◆ *Brown paint is made with yellow, red and blue paint in the ratio of 7:2:1.* ◆ *One-fifth of the paint mixture is red.* ◆ *10% of the paint is blue.* • Recognise and interpret the vocabulary of ratio and proportion, *e.g.* ◆ *There are 3 blue bricks to every / for every 2 red bricks.* ◆ *3 in every 5 bricks are blue and 2 in every 5 bricks are red.* ◆ *⅗ of the bricks are blue and ⅖ are red.* ◆ *60% of the bricks are blue and 40% are red.* ◆ *The ratio of blue to red is 3:2.* • Understand and use ratio notation with the colon, *e.g. 6:5.* • Reduce ratios to their simplest form by finding the largest common factor, *e.g. Given a recipe of 200g flour, 100g sugar, 50g butter, divide by 50 to give a ratio of 4:2:1.* Problems • Solve unequal grouping and sharing problems, *e.g.* ◆ *Brown paint is made with yellow, red and blue paint in the ratio of 3:2:1. If there is 420 $m\ell$ of yellow paint how much red and blue is needed?* ◆ *A pattern of tiles is organised so that there are 3 red tiles for every 7 yellow tiles. How many yellow tiles are needed for a pattern that contains 12 red tiles? How did you work this out?* ◆ Suppose that Jim had apples to oranges in the ratio of 2:1 and oranges to bananas in the ratio of 2:1. What is the ratio of apples to bananas? ◆ *There are 45 children at the gym club. There are 2 boys for every 3 girls. How many boys are at the gym club?* ◆ *What proportion of the Smarties in the tube is yellow?* ◆ *Write different ratio, fractions and percentage sentences for a batch of assorted cupcakes (see diagram).* ◆ *Work through past SATs papers examples.*



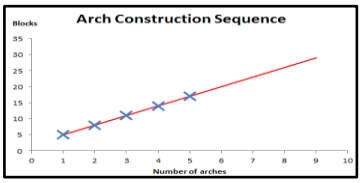
Y6 Steps 31–33	Algebra	
Key Messages • *Try to teach algebra in real-life context so it is meaningful.* • *Explore a variety of approaches that will develop understanding of what solving equations actually means.* • *Pupils must understand that in an equation the relationship is one of equivalence and balance.* • *Pupils need to understand that finding the value of an unknown means isolating the variable. They will also need to understand additive inverse in more complex formulae such as when switching the variable to the other side of the equivalence symbol in order to isolate it. A real number reverses its sign: the opposite of a positive number is negative; the opposite of a negative number is positive and zero is the additive inverse of itself.* • *Use language of algebra: formula, rule, variable, constant, equivalent, relationship, pattern, sequence.*		

Y6 Steps 31–33	Algebra Y6
Statement	**Descriptors**
Use simple formulae.	⇒ *Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. (Geometry: Properties of Shape, Year 6)* • Understand that letters or symbols always represent the same number wherever they appear, *e.g.* $2y + y = 15$, *where* y *is constant.* • Know that there can be more than one variable in a formula and that a different symbol represents each variable, *e.g.* $\square + \square + \bigcirc = 6$. • Know that the multiplication symbol is not used between numbers followed by a letter, *e.g. If pens are 15p each then* n *pens* $15n$ *pence.* • Recognise that an equation is balanced around the equals symbol, *e.g. Use a balance and centicubes to illustrate a missing number problem, such as* $2n = 3 + 5$. • Recognise that performing the same operation to each side of an equation retains the balance, i.e., $5x = 17$ can be solved by dividing both sides of the equation by 5, because multiplying x by 5 and then dividing $5x$ by 5 gives you what you started with. • Recognise that, in solving an equation, the variable needs to be isolated to find its value, *e.g.* $2y + y = 15$ *so* $3y = 15$ *so* $y = 15 \div 3$. • Describe in words the process of finding the solution to a problem. • Estimate values for unknown amounts and explain reasoning. • Solve single step problems using formulae in a range of contexts, including finding: ◦ variables in equations, *e.g.* $8 = 4x$; ◦ variables in a measures context, *e.g.* ◊ $A = L \times W$. *What is L if A = 24 and W = 6?* ◊ *What are the two unknown angles in an isosceles triangle where one angle is known?* ◦ variables that are decimals or fractions, *e.g.* $3y = 15$; ◦ variables in co-ordinates, *e.g. Given two co-ordinates for a right angled triangle, what could the third co-ordinate* (x, y) *be?*  ⇒ *Generate and describe linear number sequences. (Number: Algebra, Year 6)* ⇒ *Express missing number problems algebraically. (Number: Algebra, Year 6)* ⇒ *Find pairs of numbers that satisfy an equation with two unknowns. (Number: Algebra, Year 6)* ⇒ *Enumerate possibilities of combinations of two variables. . (Number: Algebra, Year 6)* ⇒ *Calculate the area of parallelograms and triangles. (Measurement, Year 6)* ⇒ *Recognise when it is possible to use formulae for area and volume of shapes. (Measurement, Year 6)* ⇒ *Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [e.g. mm3 and km3]. (Measurement, Year 6)* ⇒ *Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. (Geometry: Properties of Shape, Year 6)* ⇒ *Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. (Geometry: Properties of Shape, Year 6)*

Y6 Steps 31–33	Algebra Y6
Statement	**Descriptors**
Generate and describe linear number sequences.	Linear sequences change by the same amount at each interval. • Describe and explain sequences, patterns and relationships involving numbers and / or shapes, *e.g. Physically model drawing a series of arches and discuss it.* • Know that a sequence is predictable and can be continued systematically, *e.g.* ♦ *Complete a table that extends beyond the terms already written / drawn in the sequence.* ♦ *Draw a line graph and interpret it, such as finding the point representing the number of blocks for 9 arches or finding the point representing the number of arches for 18 blocks?* • Find the nth term in a linear sequence using a formula, *e.g. Find how many blocks would be in 45 arches?* • Describe the rule as an equation, *e.g. 2 + 3a, where a is the number of arches.* • Discuss expressions, *e.g. 3a + 2.* • Evaluate expressions by substitution. There is no requirement that pupils should derive the most efficient formula for a sequence. ⇒ Use simple formulae. (Algebra, Year 6)
Express missing number problems algebraically.	⇒ Use their knowledge of the order of operations to carry out calculations involving the four operations. (Number: Addition, Subtraction, Multiplication and Division) • Understand that the usual mathematical rules still apply in equations with formulae, i.e., **BIDMAS**. • Substitute symbols into an equation or statement to represent variables, *e.g.* ♦ *16 chews cost 48p, what does one chew cost? (Answer: 16n = 48)* ♦ *The change from £2 for two cakes is 46p. What is the cost of one cake? (Answer: C = (200 - 46) ÷ 2 pence). What is the cost of 6 cakes?* ⇒ Use simple formulae. (Algebra, Year 6)
Find pairs of numbers that satisfy an equation with two unknowns.	• Find pairs of numbers that satisfy an equation with two unknowns, *e.g.* ♦ × q = 10. ♦ 4x + 2y = 8. ♦ 8 - a - n = n. ♦ ÷ 15 = c. There may be more than one possibility for these problems but the expectation is that only one pair needs to be found. Decimals could also feature in the solutions. ⇒ Use simple formulae. (Algebra, Year 6)
Enumerate possibilities of combinations of two variables.	• *Find all possibilities of combinations of two variables in a formula, e.g.* ♦ ○ × △ = 24, what could the circle and triangle be? ♦ If a = 2b, what values could a have that are less than 20? ♦ ⬡ + □ + 7 = 21. What values could the hexagon and the square be? ⇒ Use simple formulae. (Algebra, Year 6)

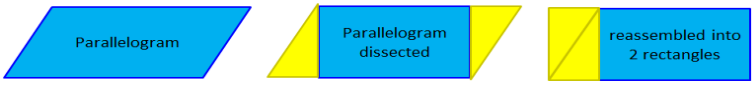
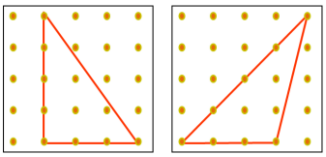


Number of arches	1	2	3	4	5
Number of blocks	5	8	11	14	17
Number of brown blocks	4	6	8	10	12
Number of grey blocks	1	2	3	4	5



Y6 Steps 31–33	Measurement	◀Y5
Key Messages • *Pupils need to be secure in place value up to at least 10 million when converting between the large and small units of measures presented in these objectives.* • *It is vital that pupils have opportunities to read and measure with scales of different divisions and those where all divisions are not marked.* • *Perimeter, area and volume should be explored in practical contexts.* • *Scaling, when applied to area and volume, is a difficult concept and should be carefully presented with many opportunities for pupils to discuss and explain their thinking.* • *The statistics strand will provide many contexts for measures work as will other subject area, such as science.* • *Use measurement language: yard, feet, foot, inches.*		

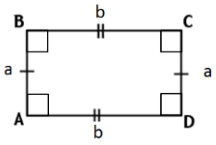
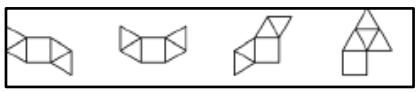
Y6 Steps 31–33	Measurement Y6
Statement	**Descriptors**
Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.	⇒ *Interpret . . . line graphs and use these to solve problems. (Statistics, Year 6)* • Solve practical problems converting units of measure if necessary, *e.g.* ◆ *How many 30 cm² tiles would you need to cover a floor that is 2·4 m wide by 3·5 m long?* ◆ *Plan a car journey / or holiday: distance travelled by scaling a map; capacity of fuel tank; time taken to get from A to B, etc.* • Find weights and measures for very small objects by scaling, *e.g.* ◆ *How could you find the weight of one grain of rice? (Find the weight of 100 grains);* ◆ *What is the thickness of one sheet of paper? (Find the thickness of 100).* • Solve problems involving money, *e.g.* ◆ *Butter costs £4·80 for 1 kg. Maisie buys 200 grams of butter. How much does she pay?* ◆ *Cheese costs £6·80 for 1 kg. Mark pays 85p for a piece. How many grams of cheese is that?* • Convert between units of time in a problem context, *e.g. days to months, minutes to hours or seconds to minutes.* ◆ *Work out a flight time from knowing the take-off time in one time zone to landing time in another;* ◆ *How fast am I travelling if I travel 150 km in 2½ hours?* ◆ *Investigate sporting records.* • Solve calendar problems, *e.g.* ◆ *Find the time interval between two dates;* ◆ *Predict what day a certain date will fall on from seeing only part of a calendar.* • Solve timetable problems, *e.g.* ◆ *Interpret train and bus timetables.* ◆ *Use flight schedules.* ◆ *Use TV schedules to find which of two programmes is longer / the time between, etc.*
Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.	• Use the most appropriate measuring tools / units of measurement for a task, *e.g. surveyor's tapes, trundle wheels, force metres, bathroom scales or pipettes.* • Estimate length, height, width, mass, capacity and volume for several objects, using benchmarks, order and check (if practical). • Interpret un-numbered divisions on a range of measuring scales accurately, *e.g. On a thermometer with whole numbers marked and sub-divided into tenths.* • Round to the nearest appropriate or given unit. • Convert between units multiplying / dividing whole numbers and decimals by 10, 100 and 1,000, *e.g. 4·5 litres in millilitres.* • Be aware of the most appropriate way to present measures when recording: ◦ avoiding unnecessarily large numbers or trailing zeros, *e.g. write 4 m rather than 4,000 mm or 95 cm rather than 950 mm;* ◦ using whole numbers and avoid decimal points if possible, *e.g. Write 25 mm rather than 2·5 cm.* • Convert units of time in order to complete calculations, *e.g. Jim started digging in the garden at 10:20. He worked for 3¾ hours. What time did he finish?* • Change money amounts from pounds to pence and vice versa, *e.g. Total ¾ of £3·60 and ⅝ of £7·20.* ⇒ *Interpret . . . line graphs and use these to solve problems. (Statistics, Year 6)* 
Convert between miles and kilometres.	This objective refers only to one equivalent measure but other conversions might be included. ⇒ *Construct pie charts and line graphs. (Statistics, Year 6)* • Find and use the conversion rate of miles to kilometres and vice versa, *e.g. Make a line graph to convert miles to kilometres to find how far 10 km is in miles.* • Recall benchmarks such as 5 miles ≈ 8 kilometres, and check to see if an answer is sensible.

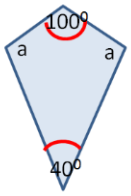
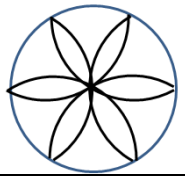
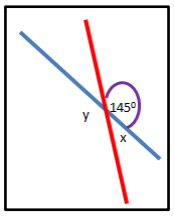
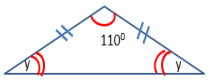
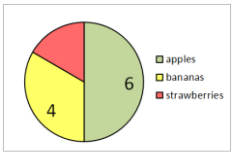
Y6 Steps 31–33	Measurement Y6
Statement	**Descriptors**
Recognise that shapes with the same areas can have different perimeters and vice versa.	• Know that shapes with the same area may have different perimeters, *e.g. Make different shapes, not necessarily rectangles, using 12 cm² tiles and compare perimeters of the shapes with the same area.* • Know that shapes with the same perimeter may have different areas, *e.g. Cut a piece of string 20 cm long and use all of it as the perimeter to enclose different shapes. Compare the area of the shapes.* • Solve area and perimeter problems, *e.g.* ♦ *The buildings supervisor has 36 m² rubber paving slabs to make a soft landing area under the climbing frame. The climbing frame is 1 m wide by 4 m long and it must have at least one slab on either side of it. What arrangements are possible? Which take up the least area?* ♦ Use models and algebraic representations to compare area and perimeter, *e.g. Area and perimeter of a rectangle might be (A = l × w, p = 2l + 2w), Substitute a different range of numbers to represent l and w.*
Recognise when it is possible to use formulae for area and volume of shapes.	⇒ *Use simple formulae (Year 6 Number: Algebra)* • Find the area of a 2-D shape that can be dissected into other shapes where the area formula is known for the component parts, i.e., can be dissected into rectangles, parallelograms and right angled triangles. • Find the volume of a 3-D shape that can be dissected into two or more cuboids by totalling the volumes of all the dissections. • Know that the area of some shapes might have to be found by using different strategies other than applying formulae, *e.g. Put a transparent cm grid on top of the shape, count the whole squares and match off the remaining bits to approximately make whole squares.* • Know that the volume of some shapes might have to be found using different strategies from applying formulae, i.e., they cannot be dissected into solids with known formulae. (The volume of solids that sink could be found by displacement.)
Calculate the area of parallelograms and triangles.	⇒ *Use simple formulae (Year 6 Number: Algebra)* • Recognise that a parallelogram can be dissected into a rectangle and two right angled triangles and re-assembling in a different way allows the area to be calculated.  • Understand and use the formulae in words and symbols to calculate the area of a parallelogram (area = base multiplied by perpendicular height or A = bh). • Recognise that a right angled triangle has the same area as half the corresponding rectangle. • Understand and use the formulae in words and symbols to calculate the area of a right angled triangle (area = ½ base multiplied by perpendicular height or A = bh½).  • Apply the given formulae to solving problems where there are known and unknown variables. • Solve area problems, *e.g. Make triangles on geoboards and explore ways of calculating their areas and writing formulae.*
Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [e.g. mm³ and km³].	⇒ *Use simple formulae (Year 6 Number: Algebra)* • Know and use the standard formula for calculating cuboids (rectangular prisms) l × w × h. • Compare two or more containers by calculating the volume of each based on a formula. • Visualise how big 1 cubic metre is, *e.g. Make 12 rolls of newspaper that are 1 m long and fasten them together to make a skeleton cube and speculate what would fit inside.* • Estimate the volume of large spaces in cubic metres, such as the classroom, and check. • Know that tiny and massive volumes might be measured in smaller or larger units such as mm³ and km³. 1000 mm³ is just one millilitre and is used predominantly in the context of medicine; km³ used for planet measurements, volcanic eruptions, etc. • Solve problems and undertake investigations, *e.g.* ♦ *Find missing variables from known variables in the formula l × w × h.* ♦ *Make as many different cuboids as possible with 36 cm³, sketch and label (could also find the surface areas of these cuboids and look for patterns).* ♦ *Investigate growing cubes and their sequence of numbers and differences.* ♦ *1,000 centimetre cubes occupy the same space as one litre. True or false?* ♦ *Investigate the relationship between: mm³, ml, m³ and l.*

Y6 Steps 31–33	Geometry Properties of Shapes	◀Y5

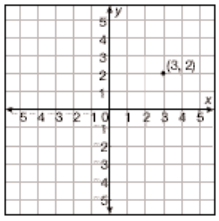
Key Messages

- *Make sure shape activities are included in oral and mental starters, including the development of visualisation skills.*
- *Children should be encouraged to annotate diagrams and draw their own to solve problems.*
- *Children should identify the angles they know or can work out quickly in diagrams, to help find other missing angles.*
- *Geometry work should be practical, interconnecting work on number, measure and geometry.*
- *Use shape and space language:*
  build, construct, bisect;
  protractor, rotation, radius, diameter, circumference, centre, diameter, radius, concentric, arc;
  parallel, perpendicular, oblique / right, regular / irregular, plane;
  cylinders, prisms, pyramids, platonic solids (tetrahedron, cube, octahedron, dodecahedron, and icosahedron), spheres, cones,

Y6 Steps 31–33	Properties of Shapes Y6
Statement	**Descriptors**
Draw 2-D shapes using given dimensions and angles.	• Measure and draw straight lines to within 1 mm with a ruler. • Measure and draw angles to within 1^0 with a protractor. • Draw, by constructing accurately, a shape that is congruent to another, *e.g. Replicate a triangle from a picture in a book.* • Apply known shape properties when constructing shapes from a limited amount of information. • Draw a similar shape to one given, using knowledge of scaling. ⇒ *Solve problems involving similar shapes where the scale factor is known or can be found. (Number: Ratio and Proportion, Year 6)* Example - not all shown  • Use conventional shape markings, *e.g.* ◆ *parallel / congruent lines;* ◆ *right angles / other angles;* ◆ *lower case letters to represent length;* ◆ *capital letters to represent points.* • Solve problems, *e.g..* ◆ *Draw a shape that has the length of each side twice as long / two and a half times as long, etc., as an original.* There are opportunities here for extending this into work on area and perimeter.  ◆ *Construct a 5-pointed star from a diagram and one given measurement. Indicate on it which angles / sides, etc., are the same.* ◆ *Given half or a quarter of a shape, construct the complete shape around one or more lines of symmetry (without squared paper guidance). Given the lengths of the diagonals of a parallelogram and the vertically opposite angles at the intersection of the diagonals, create the shape.*  ◆ *Use an ICT program, such as Logo, to draw a house that has 2 square windows* ◆ *Instruct a floor robot to move in the path of a parallelogram with an angle of 50^0.*
Recognise, describe and build simple 3-D shapes, including making nets.	• Identify and visualise shapes, *e.g. Describe the shape generated by cutting through a tetrahedron or a triangular right prism in a plane parallel to a base.* • Classify 3-D shapes, *e.g. has at least one pair of parallel faces.* • Build a range of shapes from instructions, *e.g. Put 72 interlocking cubes together to make a 2 × 3 × 12 cuboid and work out what other cuboids can be made using 72 cubes (link with volume).* <u>Nets</u> • Deconstruct 3-D models in different ways, recognising that these are the basis of nets, *e.g. a cube, a square-based pyramid or a triangular prism.* • Draw / sketch possible nets of solids from deconstructing 3-D shapes (not forgetting the correct number of flaps), *e.g. a closed cube, a pentagonal prism.* • Make a net for a given solid. • Solve shape net problems, *e.g.* ◆ *Identify / visualise which of a set of diagrams is a net for a solid,* e.g. Which of these are nets of a square-based pyramid (see diagram)?  ◆ *Create a set of nesting boxes from card.* ◆ *Make a box for an unusual present. The box cannot be a cuboid.*

Y6 Steps 31–33	Properties of Shapes Y6
Statement	**Descriptors**
Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.	⇒ *Use simple formulae. (Algebra, Year 6)* • Use precise vocabulary when describing shapes, *e.g. isosceles trapezium or oblique cylinder.* • Compare different shapes and sort them by size / properties, *e.g. 3-criteria Carroll or Venn diagrams.* • Know that the internal angles of a regular polygon are calculated by dividing 360^0 by the number of sides. • Interpret and use simple formulae for missing values in triangles, *e.g.* $a = 180 - b - c$ or $a = 180 - (b + c)$. • Interpret and use simple formulae for missing values in quadrilaterals, *e.g. The formula for the kite opposite could be* $a = (360 - 100 - 40) \div 2$ or $a = (360 - b - c) \div 2$. Formulae will vary depending on the particular quadrilateral and its properties but is based on the internal angles totalling 360^0. • Solve related problems, e.g. ♦ *Explore which quadrilaterals have pairs of parallel and / or perpendicular sides.* ♦ *Measure the angle between the lines of symmetry of shapes with 2, 3, 4, 5, . . . lines of symmetry. Comment on patterns and relationships.* ♦ *Create own simple formula,* e.g. For the internal angles of a regular polygon, $a = 360 \div s$ where s is the number of sides. 
Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.	⇒ *Use simple formulae. (Algebra, Year 6)* • Know and use the language associated with circles, such as centre, diameter, radius, circumference, and arc. • By reasoning and deduction (or measuring the radius and diameter of different circles), recognise that the diameter is twice the length of the radius. • Understand and use the formulae for diameter as $d = 2r$; *e.g. Investigate the relationship between the diameters of a set of concentric circles and their radii.* • *Solve related problems, e.g.* ♦ *Visualise the size of circle from its radius,* e.g. 'Tell me an example of a circular object that would have a radius of about 5 cm. What about 50 cm? 500 cm?' ♦ *Draw circles and arcs with a compass to make a pattern.* ♦ *Draw a circle with a compass. Now construct a regular hexagon with its vertices on the circumference of the circle.* 
Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	⇒ *Use simple formulae. (Algebra, Year 6)* ⇒ *Interpret pie charts and line graphs and use these to solve problems. (Statistics, Year 6)* • Know that vertically opposite angles are angles opposite each other where two lines cross, *e.g.* 145^0 *is vertically opposite* y *in the diagram opposite.* • Apply angle properties associated with geometric shapes, such as the angle sum of a triangle (180°) and the sum of angles around a point (360°), *e.g.* ♦ *Work out how many degrees the hour hand rotates from 2 o'clock to 4 o'clock.* ♦ *Investigate vertically opposite angles and generalise about findings.* ♦ *Given some dimensions of an isosceles triangle, work out the remainder.* ♦ *Work out an unmarked angle on a pie chart.* • Demonstrate an application of number knowledge and skills to geometric problem solving, *e.g. bonds, division facts, halves, etc.* • Solve angle problems, *e.g.* ♦ *Investigate angles at the points and at the diagonal intersections of a regular polygon, generalising about findings.* ♦ *One of the angles of a parallelogram is* 65^0*. Its sides are 4·5cm long and 6·5cm long. Construct the shape and measure the angles where the diagonals intersect.*    12 pieces of fruit altogether

Y6 Steps 31–33	Geometry Position and Direction	◀Y5
Key Messages • *For the first time pupils use and interpret co-ordinates in all four quadrants.* • *Children need to visualise shapes, describe what they 'see' and draw them on grids.* • *Children need to apply knowledge of shapes and co-ordinates to identify missing information.* • *Use position and direction language: map, plan, ascend, descend, grid, row, column, origin, co-ordinates, rotate, translate, reflect, degree, ruler, set square, compasses, axis of symmetry, etc.*		

Y6 Steps 31–33	Position and Direction Y6
Statement	**Descriptors**
Describe positions on the full co-ordinate grid (all four quadrants).	• Know on a co-ordinate grid that : ◦ The horizontal and vertical axes cross at 0 and this is known as the origin. ◦ The x-axis scale is in ascending order from left to right. ◦ The y-axis scale in descending order from top to bottom. ◦ The scale can be any increment, and need not be the same on both axes.  • Navigate the quadrants by interpreting the given scales. • Write co-ordinates for a shape that is wholly or partially in any quadrant, *e.g. Given three vertices of a rectangle, establish the co-ordinates of the fourth vertex.* • Read and plot co-ordinates in order to draw, complete and locate shapes, *e.g. Given two co-ordinates of a rectangle give different sets of co-ordinates for its completion.*
Draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes.	The co-ordinate plane is a two-dimensional surface on which points are plotted and located by their x and y co-ordinates. • Demonstrate an understanding of the language of transformation, including: ◦ reflection - recognise that a shape is a reflection of another and be able to say where / draw where the axes of symmetry are; ◦ translation - recognise that a shape has been translated and in which direction(s) it has been moved. • Reflect a given shape, on one or more axes of symmetry, which has points in any of the four quadrants. • Draw the translation of a shape where the original and the 'copy' are located in any part of the four quadrants. • Solve transformation problems, including with ICT tools, *e.g.* ♦ *Visualise shapes from descriptions and draw outcomes.* ♦ *Produce a kaleidoscope pattern with 2 axes of symmetry.* ♦ *Identify missing information,* e.g. The co-ordinate of the 4th vertex of the rectangle with vertices at (−3, −1), (−1, −2), (1, 2). ♦ *Draw the shape with the co-ordinates (−5, 1) (−4, −1) (−5, −4) (−6, −1). Describe the properties of this shape. Can you create the same shape in a position where all of the co-ordinates will be positive?*

Y6 Steps 31–33	Statistics	◀Y5
Key Messages • *Encourage pupils to be methodical. What is the problem? What do I need to do? How will I collect my data? How will I record my findings? What have I found out?* • *When using pie charts emphasise that a percentage is a proportion of 360°. Link to geometry, fractions, proportion.* • *Understand the mean is an average of a group of objects. The only average used in Year 6 is the mean.* • *Use statistics language regularly: survey, questionnaire, data, discrete, continuous, line graph, frequency, mean, average, statistics, distribution.*		

Y6 Steps 31–33	Statistics Y6
Statement	**Descriptors**
Interpret pie charts and line graphs and use these to solve problems.	Pie Charts • Understand the correspondence between a stacked column chart and a pie chart, *e.g. Generate ICT charts using the same data and compare / interpret them.* • Know that the area of the circle in a pie chart provides a visual model for the proportion of data falling into different categories. • Apply work on angles, fractions and percentages to the interpretation of pie charts and draw conclusions, *e.g. 'United won half of their games but City only won one-sixth.'* • Interpret and compare pie charts where it is not necessary to measure angles; *e.g.* ♦ *Compare two pie charts that represent two different groups.* ♦ *Use past SATs papers examples.* ⇒ *Recognise angles where they meet at a point . . . (Geometry: Properties of Shape, Year 6)* ⇒ *Recall and use equivalences between simple fractions, decimals and percentages,. . .. (Fractions . . . Year 6)* ⇒ *Solve problems involving the calculation of percentages . . . (Number: Ratio and Proportion, Year 6)* Line Graphs • Recall the difference between continuous and discrete data. • Understand and interpret line graphs showing the relationship between two measures. • Recognise and use keys, labels and axis representation; *e.g. time and distance, time and speed or time and temperature.* • Read a range of scales with a degree of accuracy - negative, partly numbered and decimal – including estimating the value of points between two marks on the scale. • Connect conversion charts to graphical representation; *e.g. Interpret a line graph to convert pounds to kilograms in a measures context.* ⇒ *Convert between miles and kilometres. (Measurement, Year 6)* ⇒ *Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. (Measurement, Year 6)* ⇒ *Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. (Measurement, Year 6)*
Interpret and construct pie charts and line graphs and use these to solve problems.	Pie Charts • Calculate the fraction of 360° required for each category on the pie chart. • Choose appropriate construction tools, such as protractor and compass. • Choose a pie chart when it is the most appropriate way to display the answer to questions or test hypotheses (usually those expressed as fractions of one or percentages); *e.g.* ♦ *Find the proportion of pupils that like different drinks.* ♦ *Is it true that City scored more than two goals in over ¼ of their matches last season?* Line Graphs • Draw a line graph, both in a mathematics context and across the curriculum; *e.g.* ♦ *Tell the story of the hare and the tortoise by creating a line graph.* ♦ *Create a line graph for the cooling rate of a liquid and respond to questions such as 'How many minutes did it take for . . . ?'* ♦ *Create and use conversion line graphs for a foreign currency exchange rate.* ⇒ *Convert between miles and kilometres. (Measurement, Year 6)*
Calculate and interpret the mean as an average.	• Know the mean is a way of finding the average of a data set; *e.g. average goals scored in the Premier League matches on a particular day.* • Understand the mean is calculated by totalling the values and dividing by the count of values. • Appreciate the mean does not have to exist as a member of the set; *e.g. 3·5 people is not possible.* • Use the mean to answer questions / solve problems in context, *e.g.* ♦ *On average, how much pocket money does the class / group have per week?* ♦ *Calculate average amount of sleep of boys and girls from knowing bed-times and waking times.*

Mathematics Objectives Mapping

Adapted from mathematics progression documents (National Stem Centre)

NUMBER

RATIO AND PROPORTION

ALGEBRA

MEASUREMENT

GEOMETRY

STATISTICS

Number: Number and Place Value						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	***Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.*** ***Count, read and write numbers to 100 in numerals;*** ***count in multiples of twos, fives and tens.***	***Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.***	***Count from 0 in multiples of 4, 8, 50 and 100;*** ***find 10 or 100 more or less than a given number.***	***Count in multiples of 6, 7, 9, 25 and 1000.*** ***Count backwards through 0 to include negative numbers.***	*Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.* ***Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero.***	
More / Less	***Given a number, identify one more and one less.***		***Count from 0 in multiples of 4, 8, 50 and 100;*** ***find 10 or 100 more or less than a given number.***	Find 1000 more or less than a given number.		
Representation and Estimation	Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	Identify, represent and estimate numbers using different representations, including the number line.	Identify, represent and estimate numbers using different representations.	Identify, represent and estimate numbers using different representations.		
Read and Write	Read and write numbers from 1 to 20 in numerals and words.	Read and write numbers to at least 100 in numerals and in words.	Read and write numbers up to 1000 in numerals and in words.		***Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.***	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.
				Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	
Place Value of Digits		Recognise the place value of each digit in a two-digit number (tens, ones).	***Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).***	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).	***Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.***	*Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.*
					Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero.	***Use negative numbers in context, and calculate intervals across zero.***
Compare and Order	Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	***Compare and order numbers from 0 up to 100; use <, > and = signs.***	Compare and order numbers up to 1000.	***Order and compare numbers beyond 1000.***	***Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.***	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.
Solve Problems	Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	***Use place value and number facts to solve problems.***	***Solve number problems and practical problems involving these ideas.***	Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	Solve number problems and practical problems that involve all of the above.	Solve number and practical problems that involve all of the above.
Rounding				***Round any number to the nearest 10, 100 or 1000.***	Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.	***Round any whole number to a required degree of accuracy.***

Number: Addition and Subtraction						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mental Recall and Methods		***Recall and use addition and subtraction facts:*** • **to 20 fluently** • and derive and use related facts up to 100. Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • a two-digit number and ones; • a two-digit number and tens; • two two-digit numbers; • adding three one-digit numbers.	***Add and subtract numbers mentally, including:*** • ***a three-digit number and ones;*** • ***a three-digit number and tens;*** • ***a three-digit number and hundreds.***		***Add and subtract mentally with increasingly large numbers (example 12,462 – 2300 = 10,162).***	Perform mental calculations, including with mixed operations and large numbers.
Written Calculation	Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. ***Represent and use number bonds and related subtraction facts within 20.*** Add and subtract one-digit and two-digit numbers to 20, including zero.	Recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100.	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.	**Add and subtract whole numbers with more than 4 digits** including using formal written methods (columnar addition and subtraction).	Use their knowledge of the order of operations to carry out calculations involving the four operations.
Problem Solving	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ▢ – 9.	***Solve problems with addition and subtraction:*** • ***using concrete objects and pictorial representations, including those involving numbers, quantities and measures;*** • ***applying their increasing knowledge of mental and written methods.***	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	***Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.***	Solve addition and subtraction multi step problems in contexts, deciding which operation and method to use and why.	***Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.*** Solve problems involving addition, subtraction, multiplication and division.
Order of Operations and Estimation		Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	Estimate the answer to a calculation and use inverse operations to check answers.	Estimate and use inverse operations to check answers to a calculation.	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	***Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.***

Key Performance Indicators (KPIs) are in bold italics *Objective divided between two different areas within the domain*

Number: Multiplication and Division Also see: Counting in Number and Place Value and Inverse Operations in Addition and Subtraction						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mental Recall / Mental Methods		***Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.***	***Recall and use multiplication and division facts for the*** • ***3x table;*** • ***4x table;*** • ***8x table.*** (3 KPI s)	***Recall multiplication and division facts for multiplication tables up to 12 x 12.*** Use place value, known and derived facts to multiply and divide mentally, including: • multiplying by 0 and 1; • dividing by 1; • multiplying together three numbers.	Multiply and divide numbers mentally drawing upon known facts.	Perform mental calculations, including with mixed operations and large numbers.
Written Calculation		Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.	***Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to written methods.***	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.	Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	***Multiply multi-digit numbers up to 4 digits by a two-digit whole number*** using the formal written method of long multiplication. ***Divide numbers up to 4 digits by a two-digit whole number*** using the formal written method of long division, ***and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.*** Use their knowledge of the order of operations to carry out calculations involving the four operations.
Properties and Order		Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.		Recognise and use factor pairs and commutativity in mental calculations.	***Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.*** Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).	Identify common factors, common multiples and prime numbers.
Problem Solving	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	***Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.***	Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	Solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors. Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. ***Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.*** ***Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.***	***Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.*** Solve problems involving addition, subtraction, multiplication and division.

Number: Fractions				Including decimals	Including decimals & %	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting			***Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.***	***Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.***		
Recognising Fractions	***Recognise, find and name a half as one of two equal parts of an object, shape or quantity.*** Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	***Recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity.***	***Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.*** Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.		Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5].	
Comparing Fractions			Compare and order unit fractions, and fractions with the same denominators.		***Compare and order fractions whose denominators are all multiples of the same number.***	Compare and order fractions, including fractions >1.
				Compare numbers with the same number of decimal places up to two decimal places.	***Read, write, order and compare numbers with up to three decimal places.***	
Rounding				***Round decimals with one decimal place to the nearest whole number.***	Round decimals with two decimal places to the nearest whole number and to one decimal place.	**Solve problems which require answers to be rounded to specified degrees of accuracy. (repeated in problems)**
Equivalence		Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	**Recognise and show, using diagrams, equivalent fractions with small denominators.**	***Recognise and show, using diagrams, families of common equivalent fractions.*** Recognise and write decimal equivalents to ¼, ½, ¾.	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
				Recognise and write decimal equivalents of any number of tenths or hundredths.	**Read and write decimal numbers as fractions** [for example, 0.71 = 71/100]. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8].
					Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.	***Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.***

Key Performance Indicators (KPIs) are in bold italics *Objective divided between two different areas within the domain*

Number: Fractions				Including decimals	Including decimals & %	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Calculation			Add and subtract fractions with the same denominator within one whole [for example, $^5/_7 + ^1/_7 = ^6/_7$].	Add and subtract fractions with the same denominator.	Add and subtract fractions with the same denominator and multiples of the same number.	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
					Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $^1/_4 \times ^1/_2 = ^1/_8$]. Multiply one-digit numbers with up to two decimal places by whole numbers. Divide proper fractions by whole numbers [for example, $^1/_3 \div 2 = ^1/_6$].
				Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.		Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [e.g. $^3/_8$]. Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. ***Use written division methods in cases where the answer has up to two decimal places***.
Problem Solving			Solve problems that involve all of the above.	Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. ***Solve simple measure and money problems involving fractions and decimals to two decimal places.***	Solve problems involving numbers up to three decimal places. ***Solve problems which require knowing percentage and decimal equivalents of $^1/_2$, $^1/_4$, $^1/_5$, $^2/_5$, $^4/_5$ and those fractions with a denominator of a multiple of 10 or 25.***	***Solve problems which require answers to be rounded to specified degrees of accuracy. (also see rounding)***

	Year 6				
Ratio and Proportion	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.	***Solve problems involving the calculation of percentages and the use of percentages for comparison*** *(e.g. of measures such as 15% of 360).*	*Solve problems involving similar shapes where the scale factor is known or can be found.*	***Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.***	
Algebra	***Use simple formulae.***	Generate and describe linear number sequences.	Express missing number problems algebraically.	Find pairs of numbers that satisfy an equation with two unknowns.	Enumerate possibilities of combinations of two variables.

Measurement						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measuring, Comparing and Estimating	***Compare, describe and solve practical problems for:*** • ***lengths and heights;*** • ***mass/weight;*** • ***capacity and volume;*** • ***time.*** Measure and begin to record the following: • lengths and heights • mass/weight • capacity and volume • time (hours, minutes, seconds).	Choose and use appropriate standard units to estimate and measure to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels: • length/height in any direction (m/cm); • mass (kg/g); • temperature (°C); • capacity (litres/ml). Compare and order measures and record the results using >, < and = for: • Lengths • Mass • Volume/capacity	***Measure, compare, add and subtract:*** • ***lengths (m/cm/mm);*** • ***mass (kg/g);*** • ***volume/capacity (l/ml).***	Estimate, compare and calculate different measures, including money in pounds and pence.	Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity.	Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3.
Problem Solving including Money		Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	.		Use all four operations to solve problems involving measure using decimal notation, including scaling.	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.
Money	Recognise and know the value of different denominations of coins and notes.	Recognise and use symbols for pounds (£) and pence (p). Combine amounts to make a particular value. Find different combinations of coins that equal the same amounts of money.	***Add and subtract amounts of money to give change, using both £ and p in practical contexts.***			
Converting				***Convert between different units of measure*** *[for example, kilometre to metre; hour to minute].*	***Convert between different units of metric measure*** *(for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).*	***Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.***
					Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	Convert between miles and kilometres.

Key Performance Indicators (KPIs) are in bold italics *Objective divided between two different areas within the domain*

Measurement						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Time	***Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.***	Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.	***Tell and write the time from*** • ***an analogue clock and 12-hour and 24-hour clocks;*** • an analogue clock, including using Roman numerals from I to XII. Estimate and read time with increasing accuracy to the nearest minute.	Read, write and convert time between analogue and digital 12 and 24-hour clocks.		
	Measure and begin to record the time (hours, minutes, seconds).		Record and compare time in terms of seconds, minutes, and hours.			
		Know the number of minutes in an hour and number of hours in a day.	Know the number of seconds in a minute and the number of days in each month, year and leap year.			
	Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].	Compare and sequence intervals of time.	Compare durations of events [for example to calculate the time taken by particular events or tasks].	***Convert between different units of measure*** *[for example, kilometre to metre; hour to minute].*		
	Recognise and use language relating to dates, including days of the week, weeks, months and years.		Use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight.			
	Compare, describe and solve practical problems for time.			Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	Solve problems involving converting between units of time.	***Use, read, write and convert between standard units, converting measurements time from a smaller unit of measure to a larger unit, and vice versa.***
Perimeter and Area			Measure the perimeter of simple 2-D shapes.	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	***Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.***	Recognise that shapes with the same areas can have different perimeters and vice versa.
				Find the area of rectilinear shapes by counting squares.	***Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2).***	Calculate the area of parallelograms and triangles. Recognise when it is possible to use formulae for area and volume of shapes.

Geometry: Properties of Shapes

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Identifying Shapes and Properties	***Recognise and name common 2-D and 3-D shapes, including:*** • ***2-D shapes*** *[For example rectangles (including squares), circles and triangles]* ***;*** • ***3-D shapes*** *[For example cuboids (including cubes), pyramids and spheres].*	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid].	**Draw 2-D shapes and make 3-D shapes using modelling materials;** **recognise 3-D shapes in different orientations and describe them.** Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	***Identify lines of symmetry in 2-D shapes presented in different orientations.***	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. ***Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.*** Use the properties of rectangles to deduce related facts and find missing lengths and angles.	Recognise, describe and build simple 3-D shapes, including making nets. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
Comparing / Classifying		***Compare and sort common 2-D and 3-D shapes and everyday objects.***		***Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.***		***Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.***
Drawing / Constructing			**Draw 2-D shapes and make 3-D shapes using modelling materials;** **recognise 3-D shapes in different orientations and describe them.**	Complete a simple symmetric figure with respect to a specific line of symmetry.	***Draw given angles, and measure them in degrees (°).***	Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including making nets.
Angles			Recognise angles as a property of shape or a description of a turn. ***Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.***	Identify acute and obtuse angles and compare and order angles up to two right angles by size.	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Identify: • angles at a point and one whole turn (total 360°); • angles at a point on a straight line and 1/2 a turn (total 180°); • other multiples of 90°. ***Draw given angles, and measure them in degrees (°).***	***Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.*** Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Geometry: Position and Direction

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Turning and Translation	Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	***Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).***		Describe movements between positions as translations of a given unit to the left/right and up/down.	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	Draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes.
including Co-ordinate		Order and arrange combinations of mathematical objects in patterns and sequences.		Describe positions on a 2-D grid as co-ordinates in the first quadrant. ***Plot specified points and draw sides to complete a given polygon.***		***Describe positions on the full co-ordinate grid (all four quadrants).***

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Statistics						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Interpreting and Presenting Data		Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. ***Ask and answer questions about totalling and comparing categorical data.***	***Interpret and present data using bar charts, pictograms and tables.***	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	***Complete, read and interpret information in tables, including timetables.***	**Interpret pie charts and line graphs** and use these to solve problems. Construct pie charts and line graphs. ***Calculate and interpret the mean as an average.***
Solving Problems			Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	***Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.***	Solve comparison, sum and difference problems using information presented in a line graph.	***Interpret pie charts and line graphs and use these to solve problems.***

Works Cited

Department for Education. (2013). *The national curriculum in England Key stages 1 and 2 framework document.* DfE.

Ministry of Education (New Zealand). (n.d.). Retrieved from NZmaths (New Zealand Maths) accessed 5/6/2015: http://nzmaths.co.nz/

National Stem Centre. (n.d.). *National Centre for the Excellence of Teaching in Mathematics accessed 5/6/2015*. Retrieved from http://www.nationalstemcentre.org.uk/

STAT Sheffield. (2014). *STAT Sheffield Planning and Assessment Grids.* Sheffield: STAT Sheffield.

The National Strategies. (2009). *The National Archives*. Retrieved from http://webarchive.nationalarchives.gov.uk/20110202093118/http://nationalstrategies.standards.dcsf.gov.uk/node/18687

The National Strategies. (n.d.). *Interactive Teaching Programs accessed 5/6/2015*. Retrieved from Topicbox: http://topicbox.net/mathematics/interactive_teaching_programs_ITPs_maths/