



Nascot Wood Junior School

Curriculum overview



'Education is the most powerful weapon which you can use to change the world'

Nelson Mandela

Key stage 2: Art and Design

Year 3			Year 4			Year 5			Year 6		
Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
<p><i>Exploring an artist: Klimt</i> (1862 – 1918)</p>	<p><i>Exploring Egyptian art</i> (linked to History curriculum)</p>	<p><i>Exploring sculpture Andy Goldsworthy</i> b.1956</p>	<p><i>Exploring an artist: Hokusai</i> (1760 –1849)</p>	<p><i>Exploring Roman art: Working with a new medium: Chalk</i></p>	<p><i>Exploring the birth of perspective through the renaissance artists</i> (14th century - 17th century)</p>	<p><i>Exploring an artist: MC Escher</i> (1898-1972)</p>	<p><i>Exploring an artist: Lowry</i> (1887 –1976)</p>	<p><i>Exploring the architecture of Gaudi</i> (1852 –1926)</p>	<p><i>Exploring the Pop Art movement</i> (mid- to late-1950s)</p>	<p><i>Exploring an artist: William Morris</i> (1834 –1896)</p>	<p><i>Exploring an Artist: Chuck Close</i> (1940 –2021)</p>
<p><i>Experimenting with colours, tints, tones and shades</i></p> <p><i>Exploring pattern and shape.</i></p>	<p><i>Egyptian inspired claywork</i></p>	<p><i>Developing techniques to work with different materials</i></p>	<p><i>Observational drawing</i> <i>Learning to work with mixed media (oil pastels and paint)</i></p>	<p><i>Mosaics and pottery</i></p>	<p><i>Looking at perspective, understanding its importance and how to use it correctly</i></p>	<p><i>Exploring tessellation and transformation</i></p>	<p><i>Creating art in the style of Lowry</i></p>	<p><i>Trecadis mosaic</i></p>	<p><i>Create a 'pop art' portrait</i></p>	<p><i>Creating intricate design in the style of William Morris</i></p>	<p><i>Create a piece of imagination art</i></p>

Key stage 2: Computing

	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
Year 3	<p><i>Connecting computers</i></p> <p><i>Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.</i></p>	<p><i>Stop-frame animation</i></p> <p><i>Capturing and editing digital still images to produce a stop-frame animation that tells a story.</i></p>	<p><i>Sequencing sounds</i></p> <p><i>Creating sequences in a block-based programming language to make music.</i></p>	<p><i>Branching databases</i></p> <p><i>Building and using branching databases to group objects using yes/no questions.</i></p>	<p><i>Desktop publishing</i></p> <p><i>Creating documents by modifying text, images, and page layouts for a specified purpose.</i></p>	<p><i>Events and actions in programs</i></p> <p><i>Writing algorithms and programs that use a range of events to trigger sequences of actions.</i></p>
Year 4	<p><i>The internet</i></p> <p><i>Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.</i></p>	<p><i>Audio editing</i></p> <p><i>Capturing and editing audio to produce a podcast, ensuring that copyright is considered.</i></p>	<p><i>Repetition in shapes</i></p> <p><i>Using a text-based programming language to explore count-controlled loops when drawing shapes.</i></p>	<p><i>Data logging</i></p> <p><i>Recognising how and why data is collected over time, before using data loggers to carry out an investigation.</i></p>	<p><i>Photo editing</i></p> <p><i>Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.</i></p>	<p><i>Repetition in games</i></p> <p><i>Using a block-based programming language to explore count-controlled and infinite loops when creating a game.</i></p>
Year 5	<p><i>Sharing information</i></p> <p><i>Identifying and exploring how information is shared between digital systems.</i></p>	<p><i>Video editing</i></p> <p><i>Planning, capturing, and editing video to produce a short film.</i></p>	<p><i>Selection in physical Computing</i></p> <p><i>Exploring conditions and selection using a programmable microcontroller.</i></p>	<p><i>Flat-file databases</i></p> <p><i>Using a database to order data and create charts to answer questions.</i></p>	<p><i>Vector drawing</i></p> <p><i>Creating images in a drawing program by using layers and groups of objects.</i></p>	<p><i>Selection in quizzes</i></p> <p><i>Exploring selection in programming to design and code an interactive quiz.</i></p>
Year 6	<p><i>Internet communication</i></p> <p><i>Recognising how the WWW can be used to communicate and be searched to find information.</i></p>	<p><i>Webpage creation</i></p> <p><i>Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.</i></p>	<p><i>Variables in games</i></p> <p><i>Exploring variables when designing and coding a game.</i></p>	<p><i>Introduction to spreadsheets</i></p> <p><i>Answering questions by using Spreadsheets to organise and calculate data.</i></p>	<p><i>3D modelling</i></p> <p><i>Planning, developing, and evaluating 3D computer models of physical objects.</i></p>	<p><i>Sensing</i></p> <p><i>Designing and coding a project that captures inputs from a physical device.</i></p>

Key stage 2: Design and Technology

Year 3				Year 4				Year 5				Year 6			
Design	Make	Evaluate	Cooking & Nutrition	Design	Make	Evaluate	Cooking & Nutrition	Design	Make	Evaluate	Cooking & Nutrition	Design	Make	Evaluate	Cooking & Nutrition
<i>Technical knowledge focus: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</i>				<i>Technical knowledge focus: understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages)</i>				<i>Technical knowledge focus: understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors)</i>				<i>Technical knowledge aspect: apply their understanding of computing to program, monitor and control their products.</i>			
<i>Use research and develop design criteria to inform the design of a Shadoof (linked to History topic).</i>	<i>Select appropriate materials and tools to make a Shadoof.</i>	<i>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</i>	<i>Design and prepare a smoothie understanding and applying the principles of a healthy and varied diet.</i>	<i>Use research and design criteria to develop a design for a catapult.</i>	<i>Select appropriate materials and tools to make a catapult.</i>	<i>Evaluate the design in terms of how far they can launch small objects. What they have learnt from the project? How can they build on this knowledge to inform future projects?</i>	<i>To prepare a healthy pasta dish</i>	<i>To research into children's toy vehicles, producing a design criteria for a toy that will appeal to a primary school children.</i>	<i>Children to manufacture a car. Chassis frame, electrical circuit (so the car can go in reverse as well as forward) to power the vehicle. Then to create the upper frame work and body to attract the target audience.</i>	<i>Children to evaluate their vehicle against the criteria, for speed and ease of use. Children to then suggest ways to improve the car.</i>	<i>To design and prepare a healthy pizza, understanding and applying the principles flavours and textures of ingredients. Look at the farm to fork process of key ingredients – cheese, tomatoes and dough</i>	<i>Use research to develop and design a steady hand game</i>	<i>Develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose aimed at particular individuals or groups.</i>	<i>Evaluate their ideas and products against design criteria and consider the views of others to improve their work</i>	<i>Indulgent to healthy: To design and prepare a healthy alternative muffin.</i>

Key stage 2: English reading

Year 3: Working at the expected standard

The pupil can:

- *read accurately many polysyllabic and multi-morphemic words and further exception words*

In age-appropriate books, the pupil can:

- *read most words accurately without overt sounding and blending, and sufficiently fluently to allow them to focus on their understanding rather than on decoding individual words*
- *read aloud with intonation that shows understanding*
- *read many words outside their spoken vocabulary, making a good approximation to the word's pronunciation.*
- *check that the text makes sense to them, correcting any inaccurate reading at the point of difficulty*
- *make a plausible prediction about what might happen on the basis of what has been read so far*
- *summarise main ideas from what has been read*
- *retrieve information from non-fiction*
- *draw inferences and begin to justify their opinions through discussions*

Year 4: Working at the expected standard

The pupil can:

- *read accurately most polysyllabic and multi-morphemic words and further exception words*

In age-appropriate books, the pupil can:

- *read aloud fluently with intonation that shows understanding*
- *read many words outside their spoken vocabulary, making a good approximation to the word's pronunciation.*
- *check that the text makes sense, correcting when meaning is lost*
- *make plausible predictions about what might happen on the basis of what has been read so far*
- *summarise main ideas providing key details*
- *retrieve information from non-fiction*
- *draw inferences and justify their opinions through discussions*
- *make links between the book they are reading and other books they have read*

Key stage 2: English reading

Year 5: Working at the expected standard

The pupil can:

- *read age-appropriate books with confidence and fluency (including whole novels)*
- *read aloud with intonation that shows understanding*
- *work out the meaning of words from context, checking that the text makes sense*
- *predict what might happen from details stated and implied*
- *summarise main ideas identifying key details*
- *retrieve information from non-fiction*
- *explain and discuss their understanding of what they have read, drawing inferences and justifying these with evidence*
- *make comparisons between the book they are reading and other books they have read*
- *evaluate how authors use language, beginning to consider the impact on the reader*

Year 6: Working at the expected standard

The pupil can:

- *read age-appropriate books with confidence and fluency (including whole novels)*
- *read aloud with intonation that shows understanding*
- *work out the meaning of words from context*
- *explain and discuss their understanding of what they have read, drawing inferences and justifying these with evidence*
- *predict what might happen from details stated and implied*
- *retrieve information from non-fiction*
- *summarise main ideas, identifying key details and using quotations for illustration*
- *evaluate how authors use language, including figurative language, considering the impact on the reader make comparisons within and across books*

Key stage 2: English writing

Year 3

Working towards the expected standard

The pupil can, after discussion with the teacher:

- write simple, coherent narratives
- write in a range of non-narrative forms
- use the range of punctuation taught up to and including Y2 mostly correctly
- use co-ordination (e.g. or / and / but) and some subordination (e.g. when / if / that / because) to join clauses
- spell many common exception words
- use phonic knowledge and other knowledge of spelling to spell many words relating to the KS1 programme of study correctly
- form capital letters and lower case letters correctly.

Working at the expected standard

The pupil can:

- write for a range of real purposes and audiences, beginning to develop an awareness of appropriate language and form (e.g. letter; report writing)
- create settings, characters and plot in narrative
- use speech punctuation correctly when following modelled writing
- use some conjunctions (e.g. and, because, when, even though), adverbs (e.g. often, quickly, very), and prepositions (e.g. next to, underneath, with) for cohesion and to add detail
- use past and present tense mostly correctly (e.g. ran, wander) and begin to use other verb forms (e.g. will go, have eaten)
- use the range of punctuation taught up to and including Y3 mostly correctly (e.g. apostrophes for possession, commas in lists)
- spell correctly words from learning in previous year groups, and some words from the year 3/ year 4 spelling list, using phonic knowledge and other knowledge of spelling such as morphology, to spell words as accurately as possible
- spell most common exception words*
- increase the legibility, consistency and quality of handwriting (e.g. by ensuring that downstrokes of letters are parallel and equidistant)
- join letters with diagonal and horizontal strokes where appropriate.

Working at greater depth within the expected standard

The pupil can:

- write effectively and coherently for different purposes, drawing on their reading to inform the vocabulary and grammar of their writing
- use detail and vocabulary to interest and engage the reader
- use paragraphs
- improve the effect of their writing by making changes when editing (e.g. re-ordering sentences and adapting vocabulary).

Key stage 2: English writing

Year 4

Working towards the expected standard

The pupil can:

- write for a range of purposes
- begin to use paragraphs
- create settings and characters in narrative
- in non-narrative writing, use simple devices to structure the writing and support the reader (e.g. headings)
- use the range of punctuation taught up to and including Y2 correctly and some of the punctuation taught in Y3 and Y4
- spell correctly many words from previous year groups and some words from the year 3 /year 4 spelling list
- write legibly

Working at the expected standard

The pupil can:

- write for a range of purposes and audiences with an increasing awareness of appropriate language and form (e.g. description of a school event, poetry to evoke feelings)
- create settings, characters and plot in narrative†
- use speech punctuation correctly most of the time
- use vocabulary and grammatical structures to communicate ideas for the given audience and purpose (e.g. use a range of sentences and begin to vary the position of clauses within a sentence)
- use a range of conjunctions, adverbs, prepositions and pronouns for cohesion, detail and clarity (e.g. appropriate noun or pronoun to avoid repetition and adverbs to express time and cause)
- use past and present tenses correctly, and include a wider range of verb forms (e.g. we were going; they have been)
- use the range of punctuation taught up to and including Y4 mostly correctly^ (e.g. commas after adverbials; use of apostrophe)
- spell correctly words from learning in previous year groups, and most words from the year 3 / year 4 spelling list,* and use phonics and morphology to spell words, beginning to use a dictionary to check spellings
- write legibly and with increasing fluency, paying attention to size and spacing
- maintain the use of joined handwriting throughout independent writing.

Working at greater depth within the expected standard

The pupil can:

- write effectively and coherently for different purposes, drawing on their reading to inform the vocabulary and grammar of their writing
- develop character through description, actions and dialogue
- begin to make choices about using sentences of different lengths and types
- improve the effect of their writing by making changes when editing (e.g. re-ordering sentences and adapting vocabulary).

Key stage 2: English writing

Year 5

Working towards the expected standard

The pupil can:

- write for a range of purposes
- use paragraphs to organise ideas
- in narratives, describe settings and characters
- in non-narrative writing, use simple devices to structure the writing and support the reader (e.g. headings, sub-headings, bullet points)
- use the range of punctuation taught up to and including Y2 correctly and some of the punctuation taught in Y3 and Y4
- spell correctly common exception words and many words from Y3/4 spelling lists* and use phonic knowledge and other knowledge of spelling, such as morphology to spell words as accurately as possible
- write legibly.

Working at the expected standard

The pupil can:

- write for a range of purposes and audiences, and mostly select language that shows good awareness of the reader (e.g. clarity of explanations; appropriate level of formality in speech writing)
- in narratives, describe settings, characters and atmosphere
- begin to convey character and advance the action through dialogue, maintaining a balance of speech and description
- select vocabulary and grammatical structures that are appropriate for the audience and purpose (e.g. correct sentence types; tenses; a range of verb forms; relative clauses)
- use a range of devices to build cohesion within and across paragraphs (e.g. conjunctions; adverbials of time and place; pronouns; synonyms), in much of their writing
- use verb tenses consistently and correctly throughout most of their writing
- use the range of punctuation taught up to and including Y5 mostly correctly (e.g. commas separating clauses; punctuation for parenthesis)
- spell correctly words from learning in previous year groups, and some words from the year 5 / year 6 spelling list, using known spelling strategies and dictionaries to check the spelling of uncommon or more ambitious vocabulary
- write legibly, fluently and with increasing speed.

Working at greater depth within the expected standard

The pupil can:

- begin to select the appropriate form and draw on what they have read as models for their own writing (e.g. rhetorical questions; interactions between characters; range of sentence constructions and types)
- choose precise and effective vocabulary, according to the purpose and audience, and adapt this when editing to improve effect
- sustain and develop ideas within paragraphs
- begin to independently use punctuation and sentence constructions to show the difference between formal and informal writing (e.g. contractions in speech).

Key stage 2: English writing

Year 6

Working towards the expected standard

The pupil can:

- write for a range of purposes
- use paragraphs to organise ideas
- in narratives, describe settings and characters in non-narrative writing, use simple devices to structure the writing and support the reader (e.g. headings, sub-headings, bullet points)
- use capital letters, full stops, question marks, commas for lists and apostrophes for contraction mostly correctly
- spell correctly most words from the year 3 / year 4 spelling list, and some words from the year 5 / year 6 spelling list
- write legibly.

Working at the expected standard

The pupil can:

- write effectively for a range of purposes and audiences, selecting language that shows good awareness of the reader (e.g. the use of the first person in a diary; direct address in instructions and persuasive writing)
- in narratives, describe settings, characters and atmosphere
- integrate dialogue in narratives to convey character and advance the action
- select vocabulary and grammatical structures that reflect what the writing requires, doing this mostly appropriately (e.g. using contracted forms in dialogues in narrative; using passive verbs to affect how information is presented; using modal verbs to suggest degrees of possibility)
- use a range of devices to build cohesion (e.g. conjunctions, adverbials of time and place, pronouns, synonyms) within and across paragraphs
- use verb tenses consistently and correctly throughout their writing
- use the range of punctuation taught at key stage 2 mostly correctly (e.g. inverted commas and other punctuation to indicate direct speech)
- spell correctly most words from the year 5 / year 6 spelling list, and use a dictionary to check the spelling of uncommon or more ambitious vocabulary
- maintain legibility in joined handwriting when writing at speed.

Working at greater depth within the expected standard

The pupil can:

- write effectively for a range of purposes and audiences, selecting the appropriate form and drawing independently on what they have read as models for their own writing (e.g. literary language, characterisation, structure)
- distinguish between the language of speech and writing and choose the appropriate register
- exercise an assured and conscious control over levels of formality, particularly through manipulating grammar and vocabulary to achieve this
- use the range of punctuation taught at key stage 2 correctly (e.g. semi-colons, dashes, colons, hyphens) and, when necessary, use such punctuation precisely to enhance meaning and avoid ambiguity.

Key stage 2: English spoken language progression

Lower key stage 2: Years 3 & 4

Listening and responding	Oral rehearsing/presenting	Talking with others	Questioning	Vocabulary
<ul style="list-style-type: none"> ▪ sustains listening to a variety of sources, making notes if required ▪ focuses listening on main source by tuning out of distractions ▪ listens to key information and makes relevant, related comments ▪ demonstrates active listening when the detail provided is unclear, by commenting or asking for an explanation ▪ follows longer instructions that are not familiar ▪ builds their own understanding and response and sometimes changes point of view as a result of listening attentively to others ▪ demonstrates increased clarity and precision of ideas e.g. through the use of relative clauses ▪ explains or gives reasons for their views or choices ▪ may introduce some new material or ideas ▪ adds detail or leaves information out according to how much is already known by the listener ▪ provides critical feedback constructively ▪ explains a process ensuring ideas are clearly sequenced 	<ul style="list-style-type: none"> ▪ shows an awareness of spoken standard English required for formal contexts ▪ reads aloud and performs poems and play scripts showing understanding through intonation, tone, volume and action ▪ uses appropriate intonation when orally rehearsing a range of sentences structures (including dialogue) ▪ begins to adapt register in response to changing context and audience, e.g. switching between talk to friends and to school visitor ▪ performs stories and poems, identifying appropriate expression, tone, volume and use of voices ▪ participates, speaking audibly in a range of situations e.g. drama, formal presentations and debates ▪ reports on findings from investigations (e.g. maths and science) 	<ul style="list-style-type: none"> ▪ follows agreed group discussion guidelines works in groups with minimum supervision ▪ follows up others' points and shows whether they agree or disagree in a whole-class discussion ▪ makes generally relevant comments which add to ideas or suggests alternatives Questioning Vocabulary 	<ul style="list-style-type: none"> ▪ sometimes develops speaker's main ideas through questioning ▪ asks questions for clarification and understanding (linked to age related context) ▪ poses 'What if?' questions that may change the outcome or direction of the problem ▪ poses and answers questions that will help make sense of a problem ▪ asks and answers questions using modal verbs and adverbs to indicate degrees of possibility ▪ when answering, refers back to and rephrases evidence from the context 	<ul style="list-style-type: none"> ▪ builds a varied and rich vocabulary with greater independence ▪ discusses and clarifies word meanings including homonyms which depend on context ▪ considers shades of meaning when discussing synonyms ▪ links events using a wider range of conjunctions and adverbs ▪ uses technical terminology accurately and precisely across most areas of the curriculum

Key stage 2: English spoken language progression

Upper key stage 2: Years 5 & 6

Listening and responding	Oral rehearsing/presenting	Talking with others	Questioning	Vocabulary
<ul style="list-style-type: none"> ▪ maintains interest and attention when listening to a variety of complex and sometimes challenging ideas/sources: determining key information ▪ demonstrates attentive and sustained listening by building on others' ideas by agreeing or disagreeing ▪ recognises specific points from the speaker that are then challenged courteously for greater clarity/detail/accuracy ▪ incorporates a variety of sentence and clause structures from written and oral contexts to gain and maintain the interest of the listener ▪ demonstrate connections with other ideas and draws on different points of view when responding ▪ anticipates the listener's response and makes use of counter arguments ▪ expresses ideas and feelings with clarity and precision ▪ uses a variety of ways to criticise constructively and respond to critique 	<ul style="list-style-type: none"> ▪ generally selects spoken standard English appropriately with few exceptions ▪ effectively uses intonation, tone, volume and action when speaking or performing publicly so that meaning is clear to the audience ▪ presents findings from enquiries, including conclusions, causal relationships and results ▪ some deliberate shaping of talk for listener, with variation in emphasis or gesture for clarity and effect ▪ presents spoken arguments, sequencing points logically, defending views with evidence and making use of persuasive language 	<ul style="list-style-type: none"> ▪ builds on their own and others' ideas and challenges views courteously ▪ sustained contributions draw ideas together and promotes effective discussion ▪ influences direction of talk ▪ negotiates and makes decisions taking account of alternatives and consequences 	<ul style="list-style-type: none"> ▪ develops own lines of enquiry ▪ deepens understanding by questioning the given information ▪ questions introduce new ideas/material ▪ supports others to develop their understanding through questioning ▪ understands which questions will develop learning / understanding ▪ when answering, refers to evidence and communicates ideas with precision/clarity for given audience 	<ul style="list-style-type: none"> ▪ builds a varied and rich vocabulary, includes constructions used for formal language ▪ discusses and clarifies word meanings, uses a wider range of synonyms precisely and effectively ▪ selects appropriate synonym according to audience and purpose ▪ incorporates a varied and rich vocabulary from a wide range of written and oral contexts ▪ uses a range of cohesive devices to link ideas ▪ uses technical terminology accurately and precisely across the curriculum ▪ debates specific points effectively and maintains a focus on the topic

Key stage 2: Geography

Year 3			Year 4			Year 5			Year 6		
Unit 1	Unit 2	Unit 3	Unit 1	Unit 2	Unit 3	Unit 1	Unit 2	Unit 3	Unit 1	Unit 2	Unit 3
<i>Climate and Weather</i>	<i>Our World</i>	<i>Coasts</i>	<i>The Americas</i>	<i>Rivers and the Water Cycle</i>	<i>Earthquakes and Volcanoes</i>	<i>Changes in our Local Environment</i>	<i>Europe – A Study of the Alpine Region</i>	<i>Journeys – Trade</i>	<i>South America – The Amazon</i>	<i>Protecting the Environment</i>	<i>Our World in the Future</i>

Key stage 2: History

Year 3			Year 4			Year 5			Year 6		
Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
<i>Changes in Britain from the Stone Age to the Iron Age</i>	<i>Ancient Egypt</i>	<i>A local history study - All children complete a local history study of the local area (Watford and Cassiobury Park).</i>	<i>The Shang Dynasty</i>	<i>The Roman Empire and its impact on Britain</i>	<i>A local history study - All children complete a local history study of the local area (Watford and Cassiobury Park).</i>	<i>Britain's settlement by Anglo-Saxons and Scots</i>	<i>The Viking and Anglo-Saxon struggle for the Kingdom of England</i>	<i>Mayan civilisation</i> <i>(A local history study is carried out as part of the Year 5 Geography curriculum)</i>	<i>The Victorians</i>	<i>Ancient Greek influence on democracy</i>	<i>A local history study - All children complete a local history study of the local area (Watford and Cassiobury Park).</i>

Key stage 2: Year 3 Mathematics

Number and place value	Addition and subtraction	Multiplication and division	Fractions	Measurement	Geometry: properties of shapes	Statistics
<p><i>Pupils should be taught to:</i></p> <p>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</p> <p>recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</p> <p>compare and order numbers up to 1000</p> <p>identify, represent and estimate numbers using different representations</p> <p>read and write numbers up to 1000 in numerals and in words</p> <p>solve number problems and practical problems involving these ideas</p>	<p><i>Pupils should be taught to:</i></p> <p>add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> ▪ a three-digit number and ones ▪ a three-digit number and tens ▪ a three-digit number and hundreds <p>add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p> <p>estimate the answer to a calculation and use inverse operations to check answers</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p><i>Pupils should be taught to:</i></p> <p>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>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</p> <p>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</p>	<p><i>Pupils should be taught to:</i></p> <p>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</p> <p>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p> <p>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>add and subtract fractions with the same denominator within one whole (for example, $5/7 + 1/7 = 6/7$)</p> <p>compare and order unit fractions, and fractions with the same denominators</p> <p>solve problems that involve all of the above</p>	<p><i>Pupils should be taught to:</i></p> <p>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>measure the perimeter of simple 2-D shapes</p> <p>add and subtract amounts of money to give change, using both £ and p in practical contexts</p> <p>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p> <p>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</p> <p>know the number of seconds in a minute and the number of days in each month, year and leap year</p> <p>compare durations of events [for example to calculate the time taken by particular events or tasks]</p>	<p><i>Pupils should be taught to:</i></p> <p>draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</p> <p>recognise that angles are a property of shape or a description of a turn</p> <p>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</p> <p>identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p>	<p><i>Pupils should be taught to:</i></p> <p>interpret and present data using bar charts, pictograms and tables</p> <p>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</p>

Key stage 2: Year 3 Mathematics

Number and place value	Addition and subtraction	Multiplication and division	Fractions	Measurement	Geometry: properties of shapes	Statistics
<p>Pupils now use multiples of 2, 3, 4, 5, 8, 10, 50 and 100.</p> <p>They use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems, building on work in year 2 (for example, $146 = 100$ and 40 and 6, $146 = 130$ and 16).</p> <p>Using a variety of representations, including those related to measure, pupils continue to count in ones, tens and hundreds, so that they become fluent in the order and place value of numbers to 1000.</p>	<p>Pupils practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100.</p> <p>Pupils use their understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent (see Appendix 1).</p>	<p>Pupils continue to practise their mental recall of multiplication tables when they are calculating mathematical statements in order to improve fluency. Through doubling, they connect the 2, 4 and 8 multiplication tables.</p> <p>Pupils develop efficient mental methods, for example, using commutativity and associativity (for example, $4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240$) and multiplication and division facts (for example, using $3 \times 2 = 6$, $6 \div 3 = 2$ and $2 = 6 \div 3$) to derive related facts ($30 \times 2 = 60$, $60 \div 3 = 20$ and $20 = 60 \div 3$).</p> <p>Pupils develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division. Pupils solve simple problems in contexts, deciding which of the four operations to use and why. These include measuring and scaling contexts, (for example, four times as high, eight times as long etc.) and correspondence problems in which m objects are connected to n objects (for example, 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children).</p>	<p>Pupils connect tenths to place value, decimal measures and to division by 10.</p> <p>They begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence. They should go beyond the $[0, 1]$ interval, including relating this to measure.</p> <p>Pupils understand the relation between unit fractions as operators (fractions of), and division by integers.</p> <p>They continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity.</p> <p>Pupils practise adding and subtracting fractions with the same denominator through a variety of increasingly complex problems to improve fluency.</p>	<p>Pupils continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (for example, 1 kg and 200g) and simple equivalents of mixed units (for example, $5m = 500cm$).</p> <p>The comparison of measures should also include simple scaling by integers (for example, a given quantity or measure is twice as long or five times as high) and this connects to multiplication.</p> <p>Pupils continue to become fluent in recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. They record £ and p separately. The decimal recording of money is introduced formally in year 4.</p> <p>Pupils use both analogue and digital 12-hour clocks and record their times. In this way they become fluent in and prepared for using digital 24-hour clocks in year 4.</p>	<p>Pupils' knowledge of the properties of shapes is extended at this stage to symmetrical and non-symmetrical polygons and polyhedra.</p> <p>Pupils extend their use of the properties of shapes. They should be able to describe the properties of 2-D and 3-D shapes using accurate language, including lengths of lines and acute and obtuse for angles greater or lesser than a right angle.</p> <p>Pupils connect decimals and rounding to drawing and measuring straight lines in centimetres, in a variety of contexts.</p>	<p>Pupils understand and use simple scales (for example, 2, 5, 10 units per cm) in pictograms and bar charts with increasing accuracy.</p> <p>They continue to interpret data presented in many contexts.</p>

Key stage 2: Year 4 Mathematics

Number and place value	Addition and subtraction	Multiplication and division	Fractions	Measurement	Geometry: properties of shapes	Geometry: position and direction	Statistics
<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number count backwards through zero to include negative numbers recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) order and compare numbers beyond 1000 identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1000 solve number and practical problems that involve all of the above and with increasingly large positive numbers 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 	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate estimate and use inverse operations to check answers to a calculation solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why 	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> recall multiplication and division facts for multiplication tables up to 12×12 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 recognise and use factor pairs and commutativity in mental calculations multiply two-digit and three-digit numbers by a one-digit number using formal written layout 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 	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> recognise and show, using diagrams, families of common equivalent fractions count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten. 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 add and subtract fractions with the same denominator recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to $1/4$; $1/2$; $3/4$ 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 round decimals with one decimal place to the nearest whole number compare numbers with the same number of decimal places up to two decimal places solve simple measure and money problems involving fractions and decimals to two decimal places 	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> convert between different units of measure [for example, kilometre to metre; hour to minute] measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares estimate, compare and calculate different measures, including money in pounds and pence read, write and convert time between analogue and digital 12 and 24-hour clocks solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days 	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify acute and obtuse angles and compare and order angles up to two right angles by size identify lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry 	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down plot specified points and draw sides to complete a given polygon 	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs

Key stage 2: Year 4 Mathematics

Number and place value	Addition and subtraction	Multiplication and division	Fractions	Measurement	Geometry: properties of shapes	Geometry: position and direction	Statistics
<p>Using a variety of representations, including measures, pupils become fluent in the order and place value of numbers beyond 1000, including counting in tens and hundreds, and maintaining fluency in other multiples through varied and frequent practice.</p> <p>They begin to extend their knowledge of the number system to include the decimal numbers and fractions that they have met so far.</p> <p>They connect estimation and rounding numbers to the use of measuring instruments.</p> <p>Roman numerals should be put in their historical context so pupils understand that there have been different ways to write whole numbers and that the important concepts of zero and place value were introduced over a period of time.</p>	<p>Pupils continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1).</p>	<p>Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency. Pupils practise mental methods and extend this to three-digit numbers to derive facts (for example $600 \div 3 = 200$ can be derived from $2 \times 3 = 6$). Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers (see Mathematics Appendix 1). Pupils write statements about the equality of expressions (for example, use the distributive law $39 \times 7 = 30 \times 7 + 9 \times 7$ and associative law $(2 \times 3) \times 4 = 2 \times (3 \times 4)$). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, $2 \times 6 \times 5 = 10 \times 6 = 60$. Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a meal on a menu, or three cakes shared equally between 10 children.</p>	<p>Pupils should connect hundredths to tenths and place value and decimal measure.</p> <p>They extend the use of the number line to connect fractions, numbers and measures.</p> <p>Pupils understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths</p> <p>Pupils make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities. Pupils use factors and multiples to recognise equivalent fractions and simplify where appropriate (for example, $6/9 = 2/3$ or $1/4 = 2/8$).</p> <p>Pupils continue to practice adding and subtracting fractions with the same denominator, to become fluent through a variety of increasingly complex problems beyond one whole.</p> <p>Pupils are taught throughout that decimals and fractions are different ways of expressing numbers and proportions.</p> <p>Pupils' understanding of the number system and decimal place value is extended at this stage to tenths and then hundredths. This includes relating the decimal notation to division of whole number by 10 and later 100.</p> <p>They practise counting using simple fractions and decimal fractions, both forwards and backwards.</p> <p>Pupils learn decimal notation and the language associated with it, including in the context of measurements. They make comparisons and order decimal amounts and quantities that are expressed to the same number of decimal places. They should be able to represent numbers with one or two decimal places in several ways, such as on number lines.</p>	<p>Pupils build on their understanding of place value and decimal notation to record metric measures, including money.</p> <p>They use multiplication to convert from larger to smaller units.</p> <p>Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit.</p> <p>They relate area to arrays and multiplication.</p>	<p>Pupils continue to classify shapes using geometrical properties, extending to classifying different triangles (for example, isosceles, equilateral, scalene) and quadrilaterals (for example, parallelogram, rhombus, trapezium).</p> <p>Pupils compare and order angles in preparation for using a protractor and compare lengths and angles to decide if a polygon is regular or irregular.</p> <p>Pupils draw symmetric patterns using a variety of media to become familiar with different orientations of lines of symmetry; and recognise line symmetry in a variety of diagrams, including where the line of symmetry does not dissect the original shape.</p>	<p>Pupils draw a pair of axes in one quadrant, with equal scales and integer labels. They read, write and use pairs of coordinates, for example (2, 5), including using coordinate-plotting ICT tools.</p>	<p>Pupils understand and use a greater range of scales in their representations.</p> <p>Pupils begin to relate the graphical representation of data to recording change over time.</p>

Key stage 2: Year 5 Mathematics

Number and place value	Addition and subtraction	Multiplication and division	Fractions	Measurement	Geometry: properties of shapes	Geometry: position and direction	Statistics
<p><i>Pupils should be taught to:</i></p> <p>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</p> <p>count forwards or backwards in steps of 10 for any given number up to 1 000 000</p> <p>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>solve number problems and practical problems that involve all of the above</p> <p>read Roman numerals to 1000 (M) and recognise years written in Roman numerals</p>	<p><i>Pupils should be taught to:</i></p> <p>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>add and subtract numbers mentally with increasingly large numbers</p> <p>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>solve addition and subtraction</p> <p>multi-step problems in contexts, deciding which operations and methods to use and why</p>	<p><i>Pupils should be taught to:</i></p> <p>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>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</p> <p>multiply and divide numbers mentally drawing upon known facts</p> <p>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</p> <p>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p> <p>recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)</p> <p>solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</p> <p>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p> <p>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</p>	<p><i>Pupils should be taught to:</i></p> <p>compare and order fractions whose denominators are all multiples of the same number</p> <p>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>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, $2/5 + 4/5 = 6/5 = 11/5$]</p> <p>add and subtract fractions with the same denominator and multiples of the same number</p> <p>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p> <p>read and write decimal numbers as fractions [for example, $0.71 = 71/100$]</p> <p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>read, write, order and compare numbers with up to three decimal places</p> <p>solve problems involving number up to three decimal places</p> <p>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</p> <p>solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those with a denominator of a multiple of 10 or 25</p>	<p><i>Pupils should be taught to:</i></p> <p>convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>calculate and compare the area of rectangles (including squares) using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes</p> <p>estimate volume [for example, using 1 cm³ blocks to build cuboids(including cubes)] and capacity[for example, using water]</p> <p>solve problems involving converting between units of time</p> <p>use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling</p>	<p><i>Pupils should be taught to:</i></p> <p>identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p> <p>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</p> <p>draw given angles, and measure them in degrees (o)</p> <p>identify:</p> <ul style="list-style-type: none"> angles at a point and one whole turn (total 360o) angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180o) other multiples of 90o use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles 	<p><i>Pupils should be taught to:</i></p> <p>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</p>	<p><i>Pupils should be taught to:</i></p> <p>solve comparison, sum and difference problems using information presented in a line graph</p> <p>complete, read and interpret information in tables, including timetables</p>

Key stage 2: Year 5 Mathematics

Number and place value	Addition and subtraction	Multiplication and division	Fractions	Measurement	Geometry: properties of shapes	Geometry: position and direction	Statistics
<p><i>Pupils identify the place value in large whole numbers.</i></p> <p><i>They continue to use number in context, including measurement. Pupils extend and apply their understanding of the number system to the decimal numbers and fractions that they have met so far.</i></p> <p><i>They should recognise and describe linear number sequences (for example, 3, 3 ½, 4, 4 1/2 ...), including those involving fractions and decimals, and find the term-to-term rule in words (for example, add ½).</i></p>	<p><i>Pupils practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1).</i></p> <p><i>They practise mental calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2 300 = 10 162).</i></p>	<p><i>Pupils practise and extend their use of the formal written methods of short multiplication and short division (see Mathematics Appendix 1). They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.</i></p> <p><i>They use and understand the terms factor, multiple and prime, square and cube numbers.</i></p> <p><i>Pupils interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example, $98 \div 4 = 98/4 = 24 \text{ r } 2 = 24\frac{1}{2} = 24.5 \approx 25$).</i></p> <p><i>Pupils use multiplication and division as inverses to support the introduction of ratio in year 6, for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres.</i></p> <p><i>Distributivity can be expressed as $a(b + c) = ab + ac$. They understand the terms factor, multiple and prime, square and cube numbers and use them to construct equivalence statements (for example, $4 \times 35 = 2 \times 2 \times 35$; $3 \times 270 = 3 \times 3 \times 9 \times 10 = 92 \times 10$). Pupils use and explain the equals sign to indicate equivalence, including in missing number problems (for example, $13 + 24 = 12 + 25$; $33 = 5 \times \square$).</i></p>	<p><i>Pupils should be taught throughout that percentages, decimals and fractions are different ways of expressing proportions. They extend their knowledge of fractions to thousandths and connect to decimals and measures. Pupils connect equivalent fractions > 1 that simplify to integers with division and other fractions > 1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions. Pupils connect multiplication by a fraction to using fractions as operators (fractions of), and to division, building on work from previous years. This relates to scaling by simple fractions, including fractions > 1.</i></p> <p><i>Pupils practise adding and subtracting fractions to become fluent through a variety of increasingly complex problems. They extend their understanding of adding and subtracting fractions to calculations that exceed 1 as a mixed number.</i></p> <p><i>Pupils continue to practise counting forwards and backwards in simple fractions. Pupils continue to develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities.</i></p> <p><i>Pupils extend counting from year 4, using decimals and fractions including bridging zero, for example on a number line.</i></p> <p><i>Pupils say, read and write decimal fractions and related tenths, hundredths and thousandths accurately and are confident in checking the reasonableness of their answers to problems.</i></p> <p><i>They mentally add and subtract tenths, and one-digit whole numbers and tenths. They practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (for example, $0.83 + 0.17 = 1$).</i></p> <p><i>Pupils should go beyond the measurement and money models of decimals, for example, by solving puzzles involving decimals.</i></p> <p><i>Pupils should make connections between percentages, fractions and decimals (for example, 100% represents a whole quantity and 1% is 1/100, 50% is 50/100, 25% is 25/100) and relate this to finding ‘fractions of’.</i></p>	<p><i>Pupils use their knowledge of place value and multiplication and division to convert between standard units.</i></p> <p><i>Pupils calculate the perimeter of rectangles and related composite shapes, including using the relations of perimeter or area to find unknown lengths. Missing measures questions such as these can be expressed algebraically, for example $4 + 2b = 20$ for a rectangle of sides 2 cm and b cm and perimeter of 20cm.</i></p> <p><i>Pupils calculate the area from scale drawings using given measurements.</i></p> <p><i>Pupils use all four operations in problems involving time and money, including conversions (for example, days to weeks, expressing the answer as weeks and days).</i></p>	<p><i>Pupils become accurate in drawing lines with a ruler to the nearest millimetre, and measuring with a protractor. They use conventional markings for parallel lines and right angles.</i></p> <p><i>Pupils use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals, for example using dynamic geometry ICT tools.</i></p> <p><i>Pupils use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems.</i></p>	<p><i>Pupils recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant. Reflection should be in lines that are parallel to the axes.</i></p>	<p><i>Pupils connect their work on coordinates and scales to their interpretation of time graphs.</i></p> <p><i>They begin to decide which representations of data are most appropriate and why.</i></p>

Key stage 2: Year 6 Mathematics

Number and place value	Addition, subtraction, multiplication and division	Fractions (including decimals and percentages)	Ratio and proportion	Algebra	Measurement	Geometry: properties of shapes	Geometry: position, and direction	Statistics
<p><i>Pupils should be taught to:</i></p> <p>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</p> <p>round any whole number to a required degree of accuracy use negative numbers in context, and calculate intervals across zero</p> <p>solve number and practical problems that involve all of the above</p>	<p><i>Pupils should be taught to:</i></p> <p>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>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</p> <p>divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p> <p>perform mental calculations, including with mixed operations and large numbers.</p> <p>identify common factors, common multiples and prime numbers</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations</p> <p>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p> <p>solve problems involving addition, subtraction, multiplication and division</p> <p>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</p>	<p><i>Pupils should be taught to:</i></p> <p>use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>compare and order fractions, including fractions >1</p> <p>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p> <p>multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $1/4 \times 1/2 = 1/8$]</p> <p>divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$]</p> <p>associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $3/8$]</p> <ul style="list-style-type: none"> ▪ identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places ▪ multiply one-digit numbers with up to two decimal places by whole numbers ▪ 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 ▪ recall and use equivalences between simple fractions, decimals and percentages, including in different contexts 	<p><i>Pupils should be taught to:</i></p> <p>solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</p> <p>solve problems involving the calculation of percentages [for example, of measures such as 15% of 360] and the use of percentages for comparison</p> <p>solve problems involving similar shapes where the scale factor is known or can be found</p> <p>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples</p>	<p><i>Pupils should be taught to:</i></p> <p>use simple formulae</p> <p>generate and describe linear number sequences</p> <p>express missing number problems algebraically</p> <p>find pairs of numbers that satisfy an equation with two unknowns</p> <p>enumerate possibilities of combinations of two variables</p>	<p><i>Pupils should be taught to:</i></p> <p>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>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</p> <p>convert between miles and kilometres</p> <p>recognise that shapes with the same areas can have different perimeters and vice versa</p> <p>recognise when it is possible to use formulae for area and volume of shapes</p> <p>calculate the area of parallelograms and triangles</p> <p>calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm³) and cubic metres (m³), and extending to other units [for example mm³ and km³]</p>	<p><i>Pupils should be taught to:</i></p> <p>draw 2-D shapes using given dimensions and angles</p> <p>recognise, describe and build simple 3-D shapes, including making nets</p> <p>compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</p> <p>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p> <p>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</p>	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> ▪ describe positions on the full coordinate grid (all four quadrants) ▪ draw and translate simple shapes on the coordinate plane, and reflect them in the axes 	<p><i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> ▪ interpret and construct pie charts and line graphs and use these to solve problems ▪ calculate and interpret the mean as an average

Key stage 2: Year 6 Mathematics

Number and place value	Addition, subtraction, multiplication and division	Fractions (including decimals and percentages)	Ratio and proportion	Algebra	Measurement	Geometry: properties of shapes	Geometry: position, and direction	Statistics
<p><i>Pupils use the whole number system, including saying, reading and writing numbers accurately.</i></p> <p><i>Pupils practise addition, subtraction, multiplication and division for larger numbers, using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division (see Mathematics Appendix 1).</i></p> <p><i>They undertake mental calculations with increasingly large numbers and more complex calculations.</i></p> <p><i>Pupils continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.</i></p> <p><i>Pupils round answers to a specified degree of accuracy, for example, to the nearest 10, 20, 50 etc, but not to a specified number of significant figures.</i></p> <p><i>Pupils explore the order of operations using brackets; for example, $2 + 1 \times 3 = 5$ and $(2 + 1) \times 3 = 9$.</i></p> <p><i>Common factors can be related to finding equivalent fractions.</i></p>	<p><i>Pupils should practise, use and understand the addition and subtraction of fractions with different denominators by identifying equivalent fractions with the same denominator. They should start with fractions where the denominator of one fraction is a multiple of the other (for example, $\frac{1}{2} + \frac{1}{8} = \frac{5}{8}$) and progress to varied and increasingly complex problems.</i></p> <p><i>Pupils should use a variety of images to support their understanding of multiplication with fractions. This follows earlier work about fractions as operators (fractions of), as numbers, and as equal parts of objects, for example as parts of a rectangle.</i></p> <p><i>Pupils use their understanding of the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity (for example, if $\frac{1}{4}$ of a length is 36cm, then the whole length is $36 \times 4 = 144$cm).</i></p> <p><i>They practise calculations with simple fractions and decimal fraction equivalents to aid fluency, including listing equivalent fractions to identify fractions with common denominators.</i></p> <p><i>Pupils can explore and make conjectures about converting a simple fraction to a decimal fraction (for example, $3 \div 8 = 0.375$). For simple fractions with recurring decimal equivalents, pupils learn about rounding the decimal to three decimal places, or other appropriate approximations depending on the context.</i></p> <p><i>Pupils multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers. Pupils multiply decimals by whole numbers, starting with the simplest cases, such as $0.4 \times 2 = 0.8$, and in practical contexts, such as measures and money.</i></p> <p><i>Pupils are introduced to the division of decimal numbers by one-digit whole number, initially, in practical contexts involving measures and money. They recognise division calculations as the inverse of multiplication.</i></p> <p><i>Pupils also develop their skills of rounding and estimating as a means of predicting and checking the order of magnitude of their answers to decimal calculations. This includes rounding answers to a specified degree of accuracy and checking the reasonableness of their answers.</i></p>	<p><i>Pupils recognise proportionality in contexts when the relations between quantities are in the same ratio (for example, similar shapes, recipes).</i></p> <p><i>Pupils link percentages or 360° to calculating angles of pie charts.</i></p> <p><i>Pupils should consolidate their understanding of ratio when comparing quantities, sizes and scale drawings by solving a variety of problems. They might use the notation $a:b$ to record their work.</i></p> <p><i>Pupils solve problems involving unequal quantities for example, 'for every egg you need three spoonfuls of flour', '3/5 of the class are boys'. These problems are the foundation for later formal approaches to ratio and proportion.</i></p>	<p><i>Pupils should be introduced to the use of symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as:</i></p> <ul style="list-style-type: none"> ▪ <i>missing numbers, lengths, coordinates and angles</i> ▪ <i>formulae in mathematics and science</i> ▪ <i>equivalent expressions (for example, $a + b = b + a$)</i> ▪ <i>generalisations of number patterns</i> ▪ <i>number puzzles (for example, what two numbers can add up to).</i> 	<p><i>Pupils connect conversion (for example, from kilometres to miles) to a graphical representation as preparation for understanding linear/proportional graphs.</i></p> <p><i>They know approximate conversions and are able to tell if an answer is sensible.</i></p> <p><i>Using the number line, pupils use, add and subtract positive and negative integers for measures such as temperature.</i></p> <p><i>They relate the area of rectangles to parallelograms and triangles, for example, by dissection, and calculate their areas, understanding and using the formulae (in words or symbols) to do this.</i></p> <p><i>Pupils could be introduced to compound units for speed, such as miles per hour, and apply their knowledge in science or other subjects as appropriate.</i></p>	<p><i>Pupils draw shapes and nets accurately, using measuring tools and conventional markings and labels for lines and angles.</i></p> <p><i>Pupils describe the properties of shapes and explain how unknown angles and lengths can be derived from known measurements.</i></p> <p><i>These relationships might be expressed algebraically for example, $d = 2 \times r$; $a = 180 - (b + c)$.</i></p>	<p><i>Pupils draw and label a pair of axes in all four quadrants with equal scaling. This extends their knowledge of one quadrant to all four quadrants, including the use of negative numbers.</i></p> <p><i>Pupils draw and label rectangles (including squares), parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes. These might be expressed algebraically for example, translating vertex (a, b) to $(a-2, b+3)$; (a, b) and $(a+d, b+d)$ being opposite vertices of a square of side d.</i></p>	<p><i>Pupils connect their work on angles, fractions and percentages to the interpretation of pie charts.</i></p> <p><i>Pupils both encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects.</i></p> <p><i>They should connect conversion from kilometres to miles in measurement to its graphical representation.</i></p> <p><i>Pupils know when it is appropriate to find the mean of a data set</i></p>	

Key stage 2: Modern Foreign Language; French

Year 3	Year 4	Year 5	Year 6
<i>France and its culture</i> <i>Greetings and Names</i> <i>Classroom instructions</i> <i>The French alphabet</i> <i>Numbers 0 – 20 & Age</i> <i>Colours</i> <i>Numbers 20 – 50</i> <i>The date & birthdays</i> <i>The very hungry Caterpillar</i> <i>My Family</i> <i>At the Farm</i>	<i>Review Y3</i> <i>Pets</i> <i>At Home</i> <i>Going to School</i> <i>In the Classroom</i> <i>Lunch at School</i> <i>School Subjects</i> <i>Sports & Hobbies</i> <i>Play an instrument</i> <i>The weather and seasons</i> <i>Fruits and at the market</i>	<i>Review Y3 & Y4</i> <i>Emotions</i> <i>Body parts</i> <i>At the doctors</i> <i>Countries & cities</i> <i>Travel around the world</i> <i>French speaking countries</i> <i>Nationality</i> <i>Numbers 50 – 100</i> <i>Euros</i> <i>At the supermarket</i>	<i>Review Y3 – Y5</i> <i>The time</i> <i>Daily routine</i> <i>Physical description</i> <i>Personality</i> <i>Clothes and colours</i> <i>Going shopping for clothes</i> <i>In the city and directions</i> <i>Snacks and drinks at the café</i> <i>Occupations/professions</i> <i>A letter from France</i>

Key stage 2: Music

Year 3			Year 4			Year 5			Year 6		
Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
<p><i>Study of the Baroque Period. Understand the period of history and the main features of this time. Focus on Vivaldi 'The Four Seasons'. Listen and reflect on the music, noting why it was composed and the effects and instruments that were used. Develop an understanding of the history of music</i></p>	<p><i>Scottish and Bengali folksongs - Identify that songs are from different places in the world, use different instruments, have a different beat and are different speeds. Compare and contrast songs using musical vocabulary. Listen to and recall sounds Appreciate and understand music from different traditions and composers.</i></p>	<p><i>Chilled out clap rap –Learn the rap and notice the dynamic contrasts. Learn the musical notation for the duration of crochets, quavers and their rests. Create and clap a series of 4 beat rhythms and record this using musical notation. Play and perform Improvise and compose Use and understand musical notation</i></p>	<p><i>Musical storytelling – explore the sounds of untuned percussion instruments and talk about their effects. Recap rhythmic notation and introduce melodic notation, identifying the notes in the treble clef. In groups, compose a sound picture and perform it to the rest of the class. Play and perform Improvise and compose Use and understand musical notation</i></p>	<p><i>Study of the Classical Period. Understand the period of history and the main features of this time. Focus on Mozart 'Horn Concerto' and Beethoven 'Symphony no. 5'. Listen and reflect on the music and discuss how these composers still have an influence today. Develop an understanding of the history of music</i></p>	<p><i>Fanfares – Listen to 'Fanfare for the common man' and identify characteristics of a fanfare and the inspiration behind them. Compose a fanfare melody for a special occasion using a set of notes combined with short, repeated rhythms. Perform to the rest of the class. Play and perform Improvise and compose Appreciate and understand music from different traditions and composers.</i></p>	<p><i>Sea shanties – explore the history of sea shanties, sing them and then compose body percussion patterns to accompany a sea shanty. Use graphic scores to notate the body percussion patterns. Appreciate and understand music from different traditions and composers. Listen to and recall sounds Improvise and compose Use and understand musical notation</i></p>	<p><i>Music technology – Study how the development of technology has influenced music composition. Use technology to explore how sounds can be layered to create texture. Using music lab on the chromebooks, compose ostinatos, which can be overlaid to create a sound picture. Listen to and recall sounds Improvise and compose</i></p>	<p><i>Study of the Romantic Period. Understand the period of history and the main features of this time. Focus on Brahms 'Hungarian Dance No. 5'. Listen and reflect on the music then create their own piece, focusing on rhythmic patterns, using instruments and voice. Perform as an ensemble. Develop an understanding of the history of music Play and perform Improvise and compose</i></p>	<p><i>Fusion – explore the influences on an artist by composing pieces of music from different genres. Use musical vocabulary and knowledge to discuss similarities and differences in pieces of music. Appreciate and understand music from different traditions and composers. Listen to and recall sounds</i></p>	<p><i>Study of 20th Century music. Understand the period of history and the main features of this time. Focus on Gershwin 'Rhapsody in Blue' and reflect on the music and how it was written to reflect the sounds of the composer's home town of New York. In groups, create own city sounds motifs and then put these together to perform a city soundscape. Develop an understanding of the history of music Play and perform Improvise and compose</i></p>	<p><i>Swing music – Listen to historical recordings of big band swing. Learn the 3 part song 'Hey Mr Miller'. Recap on melodic notation, identifying the notes of a C major scale. Improvise riffs using these notes and then invite children to play their riffs along with the song for a final performance. Use and understand musical notation Play and perform Improvise and compose Listen to and recall sounds</i></p>

Key stage 2: Physical Education

Year 3			Year 4			Year 5			Year 6		
Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
<i>Team building games</i> <i>Orienteering</i> <i>Adventurous outdoor activities</i> <i>Football</i> <i>Pilates.</i>	<i>Hockey</i> <i>Ball skills</i> <i>Gymnastics</i> <i>Dance.</i>	<i>Cricket</i> <i>Athletics</i> <i>Swimming</i> <i>Yoga.</i>	<i>Orienteering</i> <i>Playground games</i> <i>Fitness</i> <i>Gymnastics</i>	<i>Multi-sports</i> <i>Tag-Rugby</i> <i>Dance</i> <i>Speed</i> <i>Stacking</i>	<i>Athletics</i> <i>Rapid Fire</i> <i>Cricket</i> <i>Team games</i> <i>Tri-golf</i> <i>Swimming</i>	<i>Orienteering</i> <i>Cricket</i> <i>Dance</i> <i>Gymnastics</i>	<i>Orienteering</i> <i>Rounders</i> <i>Badminton</i> <i>Dodgeball</i>	<i>Athletics</i> <i>Rounders</i> <i>Orienteering</i> <i>Swimming</i>	<i>Hockey</i> <i>Orienteering</i> <i>Fitness</i> <i>Pilates</i>	<i>Football</i> <i>Tennis</i> <i>Dance</i> <i>Indoor</i> <i>Athletics</i> <i>Yoga</i>	<i>Athletics</i> <i>Cricket</i> <i>Rounders</i> <i>Swimming</i>

Key stage 2: PSHE (including RSE)

Year 3			Year 4			Year 5			Year 6		
Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
<i>Being Me in My World Celebrating Differences (including anti-bullying) Mindfulness</i>	<i>Dreams and Goals Healthy Me Mindfulness</i>	<i>Relationships Changing Me (including Sex Education) Mindfulness</i>	<i>Being Me in My World Celebrating Differences (including anti-bullying) Mindfulness</i>	<i>Dreams and Goals Healthy Me Mindfulness</i>	<i>Relationships Changing Me (including Sex Education) Mindfulness</i>	<i>Being Me in My World Celebrating Differences (including anti-bullying) Mindfulness</i>	<i>Dreams and Goals Healthy Me Mindful-ness</i>	<i>Relationships Changing Me (including Sex Education) Mindfulness</i>	<i>Being Me in My World Celebrating Differences (including anti-bullying) Mindfulness</i>	<i>Dreams and Goals Healthy Me Mindfulness</i>	<i>Relationships Changing Me (including Sex Education) Mindfulness</i>

It is suggested that these units are taught in a spiral curriculum that revisits each theme every year. This enables children to recall and build upon previous learning, exploring the underlying principles of PSHE education regularly at a depth that is appropriate for the age and stage of the child.

Key stage 2: Religious Education

Year 3			Year 4			Year 5			Year 6		
Christianity and Islam			Hinduism and Sikhism			Christianity and Judaism			Buddhism		
Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
<p><i>Beliefs and practices; Symbols and actions</i> <i>Marking festivals, traditions and key events in life</i> <i>Symbolic expression in prayer and worship</i> <i>Advent and Christmas traditions around the world</i></p>	<p><i>Identity and belonging; Prayer, worship and reflection</i> <i>Ultimate questions (Beliefs and practices - Easter)</i> <i>Belonging to a family, a community, challenges and religious leadership</i> <i>Different ideas about God and gods, creation and ultimate questions</i> <i>Communicating through sacred spaces and prayer</i> <i>Exploring Lent, Holy Week and Salvation</i></p>	<p><i>Sources of wisdom; Human responsibility and values; Justice and fairness</i> <i>Sacred texts and stories, their guidance and impact</i> <i>Taking responsibility for living together, values and respect</i> <i>Right and wrong, just and fair</i></p>	<p><i>Beliefs and practices; Symbols and actions</i> <i>Sources of wisdom</i> <i>Marking festivals, pilgrimage, traditions and key events in life</i> <i>Symbolic expression in prayer and worship</i> <i>Exploring the Trinity at Christmas - Incarnation</i></p>	<p><i>Identity and belonging; Prayer, worship and reflection; Ultimate questions (Beliefs and practices - Easter)</i> <i>Belonging to a community, individual commitment and religious leadership</i> <i>Different ideas about God and gods, creation and ultimate questions</i> <i>Communicating through sacred spaces and prayer</i> <i>Exploring Good Friday – Jesus’ death and resurrection</i></p>	<p><i>Sources of wisdom; Human responsibility and values; Justice and fairness</i> <i>Sacred texts and stories, their guidance and impact</i> <i>Taking responsibility for living together, values and respect</i> <i>Right and wrong, just and fair</i></p>	<p><i>Beliefs and practices; Symbols and actions (Identity and belonging)</i> <i>Celebrations, key events in life and pilgrimage</i> <i>Symbolic ways of expressing meaning</i> <i>Exploring the incarnation through the Christmas story</i></p>	<p><i>Identity and belonging; Prayer worship and reflection</i> <i>Ultimate questions (Symbols and actions)</i> <i>Belonging to a community, individual commitment and religious leadership</i> <i>Communicating beyond prayer and sacred spaces</i> <i>Different ideas about God and gods, creation and ultimate questions</i> <i>Exploring themes in The Last Supper</i></p>	<p><i>Sources of wisdom; Human responsibility and values; Justice and fairness</i> <i>Sacred texts and stories, their guidance and impact</i> <i>Taking responsibility for living together, the world, values and respect</i> <i>Reflecting on ethics, what is right and wrong, just and fair</i></p>	<p><i>Beliefs and practices; Symbols and actions (Identity and belonging)</i> <i>Celebrations and key events in life</i> <i>Symbolic ways of expressing meaning</i> <i>Exploring the annunciation in a sacred and secular Christmas</i></p>	<p><i>Identity and belonging; Prayer, worship and reflection; (Sources of Wisdom)</i> <i>Belonging to a community, individual commitment and religious leadership</i> <i>Communicating beyond prayer and sacred spaces</i> <i>The significance of Salvation</i></p>	<p><i>Sources of wisdom; Human responsibility and values; Ultimate questions</i> <i>Justice and fairness</i> <i>Sacred texts and stories, their guidance and impact</i> <i>Taking responsibility for living together, the world, values and respect</i> <i>Different ideas about God and gods, creation and ultimate questions</i> <i>Reflecting on ethics, what is right and wrong, just and fair</i></p>

Key stage 2: Science

Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">▪Plants▪Animals including humans▪Light▪Forces and magnets▪Rocks	<ul style="list-style-type: none">▪Animals including humans▪Living things and their habitats▪Solids, liquids and gases▪Sound▪Electricity	<ul style="list-style-type: none">▪Combined topics: Living things and their habitats including statement from animals including humans▪Materials-Properties of materials▪Earth and Space▪Forces	<ul style="list-style-type: none">▪Animals including humans▪Living things and their habitats▪Evolution and Inheritance▪Light▪Electricity