MATHEMATICS

Number and Place Value

- read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- 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
- round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- solve number problems and practical problems that involve all of the above
- read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

Addition and Subtraction

- add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- add and subtract numbers mentally with increasingly large numbers
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Multiplication and Division

- identify multiples and factors:
- identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 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
- 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
- multiply and divide numbers mentally, drawing upon known facts
- 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 1,000
- recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
- 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

Fractions (including decimals and percentages)

- compare and order fractions whose denominators are all multiples of the same number
- identify, name and write equivalent fractions of a given fraction, represented visually,including tenths and bundredths
- 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]
- add and subtract fractions with the same denominator and denominators that are multiples of the same number
- multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- 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
- round decimals with two decimal places to the nearest whole number and to one decimal place
- read, write, order and compare numbers with up to three decimal places
- solve problems involving number up to three decimal places
- 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
- solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4,1/5, 2/5 and those fractions with a denominator of a multiple of 10 or 25.

Measurement

- convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- 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
- estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
- solve problems involving converting between units of time

 use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

Geometry - properties of space

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees (°)
- identify:
- angles at a point and one whole turn (total 360°)
- angles at a point on a straight line and ½ a turn (total 180°)
- other multiples of 90°
- 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.

Geometry - position and direction

 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.

Statistics

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables.

Reasoning and Problem Solving

- Solve multi-step problems; choosing and using appropriate calculation strategies at each stage.
- Explore patterns, properties and relationships, and propose a general statement involving numbers or shapes; identify examples for which the statement is true or false.

READING

- Discuss and evaluate how authors use language, including figurative language, considering the impact on the reader. (Comprehension)
- Distinguish between statements of fact and opinion. (Comprehension)
- Maintain positive attitudes to reading and understanding of what he/she reads by continuing to read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks. (Comprehension)
- Maintain positive attitudes to reading and understanding of what he/she reads by identifying and discussing themes and conventions in writing. (Comprehension)
- Maintain positive attitudes to reading and understanding of what he/she reads by 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. (Comprehension)
- Maintain positive attitudes to reading and understanding of what he/she reads by making comparisons within a book. (Comprehension)
- Maintain positive attitudes to reading and understanding of what he/she reads by 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. (Comprehension)
- Maintain positive attitudes to reading and understanding of what he/she reads by recommending books that he/she has read to his/her peers, giving reasons for their choices. (Comprehension)
- Participate in discussions about books that are read to him/her and those that can be read for himself/herself, building on his/her own and others' ideas and challenging views courteously. (Comprehension)
- Read aloud and understand the meaning of new words that he/she meets linked to the expectations of year spelling. (Word Reading)
- Retrieve, record and present information from non-fiction. (Comprehension)
- Understand what he/she reads by asking questions to improve his/her understanding of complex texts. (Comprehension)
- Understand what he/she reads by checking that the book makes sense to him/her, discussing his/her
 understanding and exploring the meaning of words in context. (Comprehension)
- Understand what he/she reads by drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence. (Comprehension)
- Understand what he/she reads in increasingly complex texts by predicting what might happen from details stated and implied. (Comprehension)

WRITING

- Convert nouns or adjectives into verbs using suffixes e.g. -ate; -ise; -ify. (Vocabulary, Grammar and Punctuation)
- Draft and write by linking ideas across paragraphs using adverbials of time e.g. later, place e.g. nearby and number e.g. secondly or tense choices e.g. he had seen her before. (Composition)
- Draft and write by précising longer passages. (Composition)
- Draft and write by selecting appropriate grammar and vocabulary, including that within (English Appendix). (Composition)
- Draft and write by using devices to build cohesion within and across sentences and paragraphs e.g. then, after that, this, firstly. (Composition)



- Draft and write by using further organisational and presentational devices to structure text and to guide the reader e.g. headings, bullet points, underlining. (Composition)
- Draft and write narratives, describing settings, characters and atmosphere and integrating dialogue to convey character. (Composition)
- Evaluate and edit by assessing the effectiveness of his/her own and others' writing. (Composition)
- Evaluate and edit by ensuring correct subject and verb agreement when using singular and plural, distinguishing between the language of speech and writing. (Composition)
- Evaluate and edit by ensuring mostly consistent and correct use of tense throughout a piece of writing.
 (Composition)
- Evaluate and edit by proposing changes to vocabulary, grammar and punctuation to enhance effects and clarify meaning (English Appendix). (Composition)
- Indicate degrees of possibility using adverbs e.g. perhaps, surely or modal verbs e.g. might, should, will, must. (Vocabulary, Grammar and Punctuation)
- Link ideas across paragraphs using adverbials of time e.g. later, place e.g. nearby and number e.g. secondly or tense choices e.g. he had seen her before. (Vocabulary, Grammar and Punctuation)
- Perform his/her own compositions, using appropriate intonation, volume, and movement so that meaning is clear. (Composition)
- Plan his/her writing by identifying the audience for and purpose of the writing, using other similar writing as models for his/her own. (Composition)
- Plan his/her writing by noting and developing initial ideas, drawing on reading where necessary. (Composition)
- Plan his/her writing of narratives by considering how authors have developed characters and settings in what the class have read, listened to or seen performed. (Composition)
- Proof-read for punctuation errors, including use of brackets, dashes or commas to indicate parenthesis; use of commas to clarify meaning or avoid ambiguity. (Composition)
- Proof-read for spelling errors linked to spelling statements for year. (Composition)
- Spell some of the year and words correctly (English Appendix). (Spelling)
- Spell some words with 'silent' letters e.g. knight, psalm, solemn. (Spelling)
- Spell word endings which sound like 'shil' spelt -cial or -tial e.g. official, partial. (Spelling)
- Spell word endings which sound like 'shush' spelt -cious or -tious e.g. vicious, delicious, ambitious, cautious. (Spelling)
- Spell words containing the letter-string 'ough' e.g. bought, rough, through, bough. (Spelling)
- Spell words ending in -able and -ible also -ably and -ibly e.g. adorable, possible, adorably, possibly.
 (Spelling)
- Spell words ending in -ant, -ance/-ancy, -ent, -ence/-ency e.g. transparent/transparency, tolerant/tolerance. (Spelling)
- Understand the following terminology: modal verb, relative pronoun; relative clause; parenthesis, bracket, dash; and cohesion, ambiguity. (Vocabulary, Grammar and Punctuation)
- Understand verb prefixes e.g. dis-, de-, mis-, over- and re-. (Vocabulary, Grammar and Punctuation)
- Use a thesaurus. (Spelling)
- Use brackets, dashes or commas to indicate parenthesis. (Vocabulary, Grammar and Punctuation)
- Use commas to clarify meaning or avoid ambiguity. (Vocabulary, Grammar and Punctuation)
- Use devices to build cohesion within a paragraph e.g. then, after that, this, firstly. (Vocabulary, Grammar and Punctuation)
- Use different verb forms mostly accurately with consideration for audience and purpose. (Composition)
- Use knowledge of morphology and etymology in spelling and understand that the spelling of some words needs to be learnt specifically (English Appendix). (Spelling)
- Use relative clauses beginning with who, which, where, when, whose, that, or an omitted relative pronoun. (Vocabulary, Grammar and Punctuation)
- Use the first three or four letters of a word to check spelling, meaning or both of these in a dictionary. (Spelling)
- Write increasingly legibly. (Handwriting)
- Write increasingly legibly, fluently and with increasing speed through improving choices of which shape
 of a letter to use when given choices and deciding whether or not to join specific letters. (Handwriting)

SPOKEN LANGUAGE

- Listen to, read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks.
- Prepare poems and plays to read aloud and to perform, showing understanding through intonation, tone and volume.
- Discuss and evaluate how authors use language, including figurative language, considering the impact on the reader.
- Ask questions to improve his/her understanding.
- Identify and discuss themes and conventions in and across a wide range of writing.
- Participate in discussions about books that are read to him/her and those that can be read for himself/herself, building on his/her own and others' ideas and challenging views courteously.
- Explain and discuss his/her understanding of what he/she has read, including through formal

- presentations and debates, maintaining a focus on the topic and using notes where necessary.
- Perform his/her own compositions, using appropriate intonation, volume, and movement so that the meaning is clear.
- Pronounce mathematical vocabulary correctly.
- Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- Use and understand the terms factor, multiple and prime, square and cube numbers.
- 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.
- Report and present findings from enquiries, including conclusions, causal relationships and explanations
 of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Use relevant scientific language and illustrations to discuss, communicate and justify his/her scientific
 ideas and should talk about how scientific ideas have developed over time.

SCIENCE

- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. (Materials)
- Demonstrate that dissolving, mixing and changes of state are reversible changes. (Materials)
- Describe the changes as humans develop to old age. (Animals, including humans)
- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Living things and their habitats)
- Describe the life process of reproduction in some plants and animals. (Living things and their habitats)
- Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. (Earth and space)
- Describe the movement of the Moon relative to the Earth. (Earth and space)
- Describe the Sun, Earth and Moon as approximately spherical bodies. (Earth and space)
- Explain that some changes result in the formation of new materials, and that this kind of change is not
 usually reversible, including changes associated with burning and the action of acid on bicarbonate of
 soda. (Materials)
- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. (Forces and magnets)
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. (Materials)
- Identify scientific evidence that has been used to support or refute ideas or arguments (Year 4 focus).
 (Working Scientifically)
- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
 (Forces and magnets)
- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (Year 4 focus). (Working Scientifically)
- Recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. (Materials)
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (Forces and magnets)
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (Year focus). (Working Scientifically)
- Report and present findings from enquiries, including conclusions, causal relationships and explanations
 of and degree of trust in results, in oral and written forms such as displays and other presentations (Year
 4 focus). (Working Scientifically)
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Year 4 focus). (Working Scientifically)
- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. (Materials)
- Use test results to make predictions to set up further comparative and fair tests (Year 4 focus). (Working Scientifically)
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. (Earth and space)

COMPUTING

- Begin to use internet services to share and transfer data to a third party. (Networks)
- Design write and test simple programs with opportunities for selection, where a particular result will happen based on actions or situations controlled by the user. (Coding)
- Design, input and test an increasingly complex set of instructions to a program or device. (Coding)
- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. (Coding)
- Design, write and test simple programs that follow a sequence of instructions or allow a set of instructions to be repeated. (Coding)
- Independently select and use appropriate software for a task. (Using Computer)
- Independently select, use and combine a variety of software to design and create content for a given

- audience. (Using Computer)
- Understand the need to only select age appropriate content. (E-Safety)
- Use filters in search technologies effectively. (Net Searching)
- Use filters in search technologies effectively and appreciates how results are selected and ranked. (Net Searching)
- Use logical reasoning to explain how increasingly complex algorithms work to ensure a program's efficiency. (Coding)

HISTORY

- Compare sources of information available for the study of different times in the past. (Historical enquiry)
- Evaluate the usefulness of a variety of sources. (Historical interpretations)
- Give some reasons for some important historical events. (Understanding of events, people and changes)
- Make comparisons between aspects of periods of history and the present day. (Historical interpretations)
- Present findings and communicate knowledge and understanding in different ways. (Organisation and communication)
- Provide an account of a historical event based on more than one source. (Organisation and communication)
- Understand that the type of information available depends on the period of time studied. (Historical interpretations)
- Use dates to order and place events on a timeline. (Chronological understanding)

GEOGRAPHY

- Compare the physical and human features of a region of the UK and a region in North America, identifying similarities and differences. (Place knowledge)
- Identify and describe the significance of the Prime/Greenwich Meridian and time zones including day and night. (Locational knowledge)
- Identify the physical characteristics and key topographical features of the countries within North America. (Locational knowledge)
- Know about changes to world environments over time. (Human and physical geography)
- Know about the physical features of coasts and begin to understand erosion and deposition. (Human and physical geography)
- Know about the wider context of places e.g. county, region and country. (Locational knowledge)
- Know and describe where a variety of places are in relation to physical and human features. (Locational knowledge)
- Know how rivers erode, transport and deposit materials. (Human and physical geography)
- Know location of: capital cities of countries of British Isles and U.K., seas around U.K., European Union
 countries with high populations and large areas and the largest cities in each continent. (Locational
 knowledge)
- Recognise the different shapes of countries. (Locational knowledge)
- Understand about weather patterns around the world and relate these to climate zones. (Human and physical geography)
- Understand and use a widening range of geographical terms e.g. specific topic vocabulary climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle. (Geographical skills and fieldwork)
- Understand how humans affect the environment over time. (Human and physical geography)
- Understand why people seek to manage and sustain their environment. (Human and physical geography)

ART

- Add collage to a painted, drawn or printed background using a range of media, different techniques, colours and textures. (Techniques)
- Confidently and systematically investigate the potential of new and unfamiliar materials and use these learnt techniques within his/her work. (Learning)
- Develop different ideas which can be used and explain his/her choices for the materials and techniques used. (Learning)
- Develop skills in using clay including slabs, coils and slips. (Techniques)
- Evaluate his/her work against their intended outcome. (Learning)
- Experiment with using layers and overlays to create new colours/textures. (Techniques)
- Mix colours to express mood, divide foreground from background or demonstrate tones. (Techniques)
- Research and discuss various artists, architects and designers and discuss their processes and explain how these were used in the finished product. (Learning)
- Return to work over longer periods of time and use a wider range of materials. (Techniques)
- Use line, tone and shading to represent things seen, remembered or imagined in three dimensions. (Techniques)

DESIGN & TECHNOLOGY

- Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable. (Processes)
- Create prototypes to show his/her ideas. (Processes)

- Make careful and precise measurements so that joins, holes and openings are in exactly the right place. (Processes)
- Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work. (Processes)
- Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques. (Processes)
- Select appropriate ingredients and use a wide range of techniques to combine them. (Cooking and Nutrition)
- Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable / tasty to eat. (Cooking and Nutrition)
- Understand how to use more complex mechanical and electrical systems. (Processes)
- Understand the main food groups and the different nutrients that are important for health. (Cooking and Nutrition)
- Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product. (Processes)

LANGUAGES

- Adapt known complex sentences to reflect a variation in meaning. (Speaking)
- Adapt sentences to form negative sentences and begin to form questions. (Grammar)
- Begin to use intonation to differentiate between sentence types. (Speaking)
- Create a short piece for presentation to an audience. (Speaking)
- Gain an overall understanding of an extended spoken text which includes some familiar language, for example summarising in English the key points of what he/she has heard in the target language. (Listening)
- Identify different ways to spell key sounds, and select the correct spelling of a familiar word. (Listening)
- Know how to conjugate some high frequency verbs. (Grammar)
- Learn a song or poem using the written text for support. (Reading)
- Read aloud and understand a short text containing mostly familiar language, using fairly accurate pronunciation. (Reading)
- Take part in conversations and express simple opinions giving reasons. (Speaking)
- Understand how to make changes to an adjective in order for it to 'agree' with the relevant noun.
 (Grammar)
- Use a wide range of adjectives to describe people and things, and use different verbs to describe actions. (Writing)
- Use dictionaries to extend vocabulary on a given topic and develop his/her ability to use different strategies to work out the meaning of unfamiliar words. (Reading)
- Write phrases and some simple sentences from memory and write a short text such as an email with support from a word/phrase bank. (Writing)

MUSIC

- Compose complex rhythms from an increasing aural memory.
- Understand how pulse, rhythm and pitch work together.
- Improvise with increasing confidence using own voice, rhythms and varied pitch.
- Sing as part of an ensemble with increasing confidence and precision.
- Play and perform in solo or ensemble contexts with some accuracy, control, fluency and expression.
- Use and develop an understanding of formal, written notation which includes staff, semibreves and dotted crotchets.
- Develop an increasing understanding of the history and context of music.
- Listen with attention to detail and recall sounds with increasing aural memory.

PE

- Begin to reflect on mistakes and see them as an opportunity to learn from. (Personal and social)
- Begin to work out the amount of exercise needed to burn off food (by using up calories). (Diet and hygiene)
- Describe the basic functions of a red and white blood cell. (Healthy bodies)
- Develop interest in participating in sports activities and events at a competitive level. (Applying skills and using tactics)
- Dribble a football between cones. (Acquiring and developing skills)
- Explain how confidence can affect performance. (Personal and social)
- Explain how our body systems change during exercise. (Healthy bodies)
- Explain the effects of saturated fats on our hearts and the types of nutrients needed to have a healthy diet. (Diet and hygiene)
- Explain the functions of the internal organs. (Healthy bodies)
- Explain the importance of joints and describe different types of joints. (Healthy bodies)
- Gallop with a fluid motion. (Acquiring and developing skills)
- Identify different levels of performance and use subject specific vocabulary. (Evaluating and improving performance)
- Identify situations where people may need support with their mental health. (Healthy mind)

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Hurst Park Primary School - Year Five Curriculum Map

- Identify something he/she is confident in. (Personal and social)
- Identify stress and stressful situations and think of ways of dealing with them. (Healthy mind)
- Identify the difference between healthy and unhealthy fats. (Diet and hygiene)
- Identify the main functions of the circulatory system. (Healthy bodies)
- Identify the value of sleep for our health and explain the possible side effects of lack of sleep. (Healthy mind)
- Make links between a balanced lifestyle and being happy. (Personal and social)
- Participate in recognised activities and games with skill and precision showing creativity with tactics and strategy. (Applying skills and using tactics)
- Perform a sequence of one footed leaps. (Acquiring and developing skills)
- Recommend suitable lifestyles for different age ranges. (Healthy mind)
- Understand how our bodies change as we get older and how this effects sporting performance. (Healthy bodies)
- Understand that muscles work in pairs to protect, support and move the body and how we can build and repair them through exercise. (Healthy bodies)
- Use scientific language to explain the importance of different minerals and vitamins. (Diet and hygiene)
- When performing in an activity, draw upon previous knowledge and experiences of tactics, strategies and composition. (Applying skills and using tactics)