

Francis Patton Primary School



**Primary Six
Cambridge
Curriculum**

English Language Arts

Phonics, spelling & vocabulary

- Learn word endings with different spellings but the same pronunciation, e.g. *-tion, -cian, -sion, -ssion; -ance, -ence*.
- Confirm correct choices when representing consonants, e.g. 'ck'/'k'/'ke'/'que'/'ch'; 'ch'/'tch'; 'j'/'dj'/'dje'.
- Continue to learn words, apply patterns and improve accuracy in spelling.
- Further investigate spelling rules and exceptions, including representing unstressed vowels.
- Develop knowledge of word roots, prefixes and suffixes, including recognising variations, e.g. *im, in, ir, il; ad, ap, af, al* and knowing when to use double consonants.
- Know how to transform meaning with prefixes and suffixes.
- Investigate meanings and spellings of connectives.
- Explore definitions and shades of meaning and use new words in context.
- Explore word origins and derivations and the use of words from other languages.

- Understand changes over time in words and expressions and their use.
- Explore proverbs, sayings and figurative expressions.

Grammar and punctuation

Reading

- Identify uses of the colon, semi-colon, parenthetical commas, dashes and brackets.
- Revise different word classes.
- Investigate the use of conditionals, e.g. to express possibility.
- Begin to show awareness of the impact of writers' choices of sentence length and structure.
- Revise language conventions and grammatical features of different types of text.
- Explore use of active and passive verbs within a sentence.
- Understand the conventions of standard English usage in different forms of writing.
- Distinguish the main clause and other clauses in a complex sentence.

Writing

- Punctuate speech and use apostrophes accurately.
- Use a wider range of connectives to clarify relationships between ideas, e.g. *however, therefore, although*.
- Use connectives to structure an argument or discussion.

- Develop grammatical control of complex sentences, manipulating them for effect.
- Develop increasing accuracy in using punctuation effectively to mark out the meaning in complex sentences.

Reading

Fiction and poetry

- Develop familiarity with the work of established authors and poets, identifying features which are common to more than one text.
- Consider how the author manipulates the reaction of the reader, e.g. how characters and settings are presented.
- Look for implicit meanings, and make plausible inferences based on more than one point in the text.
- Understand aspects of narrative structure, e.g. the handling of time.
- Analyse the success of writing in evoking particular moods, e.g. suspense.
- Paraphrase explicit meanings based on information at more than one point in the text.
- Comment on writer's use of language, demonstrating awareness of its impact on the reader.
- Begin to develop awareness that the context for which the writer is writing and the context in which the reader is reading can

impact on how the text is understood.

- Take account of viewpoint in a novel, and distinguish voice of author from that of narrator.
- Discuss and express preferences in terms of language, style and themes.
- Articulate personal responses to reading, with close reference to the text.
- Explore how poets manipulate and play with words and their sounds.
- Read and interpret poems in which meanings are implied or multilayered.

Non-fiction

- Analyse how paragraphs and chapters are structured and linked.
- Recognise key characteristics of a range of non-fiction text types.
- Explore autobiography, and first and third person narration.
- Identify features of balanced written arguments.
- Compare the language, style and impact of a range of non-fiction writing.
- Distinguish between fact and opinion in a range of texts and other media.

• **Writing** **Fiction**

- Plan plot, characters and structure effectively in writing an extended story.
- Manage the development of an idea throughout a piece of writing, e.g. link the end to the beginning.
- Establish and maintain a clear viewpoint, with some elaboration of personal voice.
- Use different genres as models for writing.
- Use paragraphs, sequencing and linking them appropriately to support overall development of the text.
- Use a range of devices to support cohesion within paragraphs.
- Develop some imaginative detail through careful use of vocabulary and style.

Non-fiction

- Use the styles and conventions of journalism to write reports on events.
- Adapt the conventions of the text type for a particular purpose.
- Select appropriate non-fiction style and form to suit specific purposes.
- Write non-chronological reports linked to work in other subjects.
- Develop skills of writing biography and autobiography in role.

- Argue a case in writing, developing points logically and convincingly.
- Write a balanced report of a controversial issue.
- Summarise a passage, chapter or text in a given number of words.

Presentation

- Use ICT effectively to prepare and present writing for publication.



• **Speaking and listening**

- Express and explain ideas clearly, making meaning explicit.
- Use spoken language well to persuade, instruct or make a case, e.g. in a debate.
- Vary vocabulary, expression and tone of voice to engage the listener and suit the audience, purpose and context.
- Structure talk to aid a listener's understanding and engagement.
- Speak confidently in formal and informal contexts.
- Pay close attention in discussion to what others say, asking and answering questions to introduce new ideas.
- Help to move group discussion forward, e.g. by clarifying, summarizing.
- Prepare, practise and improve a spoken presentation of performance.

- Convey ideas about characters in drama in different roles and scenarios through deliberate choice of speech, gesture and movement.
- Reflect on variations in speech, and appropriate use of standard English.

Mathematics

Numbers and the number system

- Count on and back in fractions and decimals, e.g. $\frac{1}{3}$ s, 0.1s, and repeated steps of whole numbers (and through zero).
- Know what each digit represents in whole numbers up to a million.
- Know what each digit represents in one- and two-place decimal numbers.
- Multiply and divide any whole number from 1 to 10 000 by 10, 100 or 1000 and explain the effect.
- Multiply and divide decimals by 10 or 100 (answers up to two decimal places for division).
- Find factors of two-digit numbers.
- Find some common multiples, e.g. for 4 and 5.
- Round whole numbers to the nearest 10, 100 or 1000.
- Round a number with two decimal places to the nearest tenth or to the nearest whole number.
- Make and justify estimates and approximations of large numbers.
- Order and compare positive numbers to one million, and

negative integers to an appropriate level.

- Use the $>$, $<$ and $=$ signs correctly.
- Estimate where four-digit numbers lie on an empty 0-10 000 line.
- Order numbers with up to two decimal places (including different numbers of places).
- Recognise and extend number sequences.
- Recognise and use decimals with up to three places in the context of measurement.
- Recognise odd and even numbers and multiples of 5, 10, 25, 50 and 100 up to 1000.
- Make general statements about sums, differences and multiples of odd and even numbers.
- Recognise prime numbers up to 20 and find all prime numbers less than 100.
- Recognise the historical origins of our number system and begin to understand how it developed.
- Compare fractions with the same denominator and related denominators, e.g. $\frac{3}{4}$ with $\frac{7}{8}$.
- Recognise equivalence between fractions, e.g. between $\frac{1}{100}$ s, $\frac{1}{10}$ s and $\frac{1}{2}$ s.
- Recognise and use the equivalence between decimal and fraction forms.
- Order mixed numbers and place between whole numbers on a number line.

- Change an improper fraction to a mixed number, e.g. $\frac{17}{8}$ to $2\frac{1}{8}$.
- Reduce fractions to their simplest form, where this is $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ or a number of fifths or tenths.
- Begin to convert a vulgar fraction to a decimal fraction using division.
- Understand percentage as parts in every 100 and express $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, $\frac{1}{100}$ as percentages.
- Find simple percentages of shapes and whole numbers.
- Solve simple problems involving ratio and direct proportion.

Calculation

Mental strategies

- Recall addition and subtract facts for numbers to 20 and pairs of one-place decimals with a total of 1, e.g. $0.4 + 0.6$.
- Derive quickly pairs of one-place decimals totalling 10, e.g. 7.8 and 2.2, and two-place decimals totalling 1, e.g. $0.78 + 0.22$.
- Know and apply tests of divisibility by 2, 4, 5, 10, 25 and 100.
- Use place value and number facts to add or subtract two-digit whole numbers and to add or subtract three-digit multiples of 10 and pairs of decimals, e.g. $560 + 270$; $2.6 + 2.7$; $0.78 + 0.23$.
- Add/subtract near multiples of one when adding numbers with

one decimal place, e.g. $5.6 + 2.9$;
 $13.5 - 2.1$.

- Add/subtract a near multiple of 10, 100 or 1000, or a near whole unit of money, and adjust, e.g. $3127 + 4998$; $5678 - 1996$.
- Use place value and multiplication facts to multiply/divide mentally, e.g. 0.8×7 ; $4.8 \div 6$.
- Multiply pairs of multiples of 10, e.g. 30×40 , or multiples of 10 and 100, e.g. 600×40 .
- Double quickly any two-digit number, e.g. 78, 7.8, 0.78 and derive the corresponding halves.
- Divide two-digit numbers by single-digit numbers, including leaving a remainder.

Addition and subtraction

- Add two- and three-digit numbers with the same or different numbers of digits/decimal places.
- Add or subtract numbers with the same and different numbers of decimal places, including amounts of money.
- Find the difference between a positive and negative integer, and between two negative integers in a context such as temperature or on a number line.

Multiplication and division

- Multiply pairs of multiples of 10, e.g. 30×40 , or multiples of 10 and 100, e.g. 600×40 .

- Multiply near multiples of 10 by multiplying the multiple of 10 and adjusting.
- Multiply by halving one number and doubling the other, e.g. calculate 35×16 with 70×8 .
- Use number facts to generate new multiplication facts, e.g. the 17x table from 10x + 7x tables.
- Multiply two-, three- or four-digit numbers (including sums of money) by a single-digit number and two- or three-digit numbers by two-digit numbers.
- Divide three-digit numbers by single-digit numbers, including those leaving a remainder and divide three-digit numbers by two-digit numbers (no remainder) including sums of money.
- Give an answer to division as a mixed number, and a decimal (with divisors of 2, 4, 5, 10 or 100).
- Relate finding fractions to division and use them as operators to find fractions including several tenths and hundredths of quantities.
- Know and apply the arithmetic laws as they apply to multiplication (without necessarily using the terms commutative, associative or distributive).



• Geometry

Shapes and geometric reasoning

- Classify different polygons and understand whether a 2D shape is a polygon or not.
- Visualise and describe the properties of 3D shapes, e.g. faces, edges and vertices.
- Identify and describe properties of quadrilaterals (including the parallelogram, rhombus and trapezium), and classify using parallel sides, equal sides, equal angles.
- Recognise and make 2D representations of 3D shapes including nets.
- Estimate, recognise and draw acute and obtuse angles and use a protractor to measure to the nearest degree.
- Check that the sum of the angles in a triangle is 180° , for example, by measuring or paper folding; calculate angles in a triangle or around a point.

Position and movement

- Read and plot co-ordinates in all four quadrants.
 - Predict where a polygon will be after one reflection, where the sides of the shape are not parallel or perpendicular to the mirror line, after one translation or after a rotation through 90° about one of its vertices.
- Measure

Length, mass and capacity

- Select and use standard units of measure. Read and write to two or three decimal places.
- Convert between units of measurement (kg and g, l and ml, km, m, cm, and mm), using decimals to three places, e.g. recognising that 1.245m is 1 m 24.5 cm.
- Interpret readings on different scales, using a range of measuring instruments.
- Draw and measure lines to the nearest centimetre and millimetre.
- Know imperial units still in common use, e.g. the mile, and approximate metric equivalents.



Time

- Recognise and understand the units for measuring time (seconds, minutes, hours, days, weeks, months, years, decades and centuries); convert one unit of time into another.
- Tell the time using digital and analogue clocks using the 24-hour clock.
- Compare times on digital and analogue clocks, e.g. realise

quarter to four is later than 3:40.

- Read and use timetables using the 24-hour clock.
- Calculate time intervals using digital and analogue times.
- Use a calendar to calculate time intervals in days, weeks or months.
- Calculate time intervals in days, months or years.
- Appreciate how the time is different in different time zones around the world.

Area and perimeter

- Measure and calculate the perimeter and area of rectilinear shapes.
- Estimate the area of an irregular shape by counting squares.
- Calculate perimeter and area of simple compound shapes that can be split into rectangles.

Handling data

Organising, categorising and representing data

- Solve a problem by representing, extracting and interpreting data in tables, graphs, charts and diagrams, e.g. line graphs for distance and time; a price 'ready-reckoner' for currency conversion; frequency tables and bar charts with grouped discrete data.

- Find the mode and range of a set of data from relevant situations, e.g. scientific experiments.
- Begin to find the median and mean of a set of data.
- Explore how statistics are used in everyday life.

Probability

- Use the language associated with probability to discuss events, to assess likelihood and risk, including those with equally likely outcomes.

Problem solving

Using techniques and skills in solving mathematical problems

- Choose appropriate and efficient mental or written strategies to carry out a calculation involving addition, subtraction, multiplication or division.
- Understand everyday systems of measurement in length, weight, capacity, temperature and time and use these to perform simple calculations.
- Check addition with a different order when adding a long list of numbers; check when subtracting by using the inverse.
- Recognise 2D and 3D shapes and their relationships, e.g. a cuboid has a rectangular cross-section.

- Estimate and approximate when calculating, e.g. use rounding, and check working.



Using understanding and strategies in solving problems

- Explain why they chose a particular method to perform a calculation and show working.
- Deduce new information from existing information and realise the effect that one piece of information has on another.
- Use logical reasoning to explore and solve number problems and mathematical puzzles.
- Use ordered lists or tables to help solve problems systematically.
- Identify relationships between numbers and make generalised statements using words, then symbols and letters, e.g. the second number is twice the first number plus 5 ($n, 2n, + 5$); all

the numbers are multiples of 3 minus 1 ($3n - 1$); the sum of angles in a triangle is 180° .

- Make sense of and solve word problems, single and multi-step (all four operations), and represent them, e.g. with diagrams or on a number line; use brackets to show the series of calculations necessary.
- Solve simple word problems involving ratio and direct proportion.
- Solve simple word problems involving percentages, e.g. find discounted prices.
- Make, test and refine hypotheses, explain and justify methods, reasoning, strategies, results or conclusions orally.

Science

Ideas and evidence

- Consider how scientists have combined evidence from observation and measurement with creative thinking to suggest new ideas and explanations for phenomena.
- Collect evidence and data to test ideas including predictions.

Plan investigative work

- Discuss how to turn ideas into a form that can be tested.
- Make predictions using scientific knowledge and understanding.
- Choose what evidence to collect to investigate a question, ensuring that the evidence is sufficient.

- Identify factors that are relevant to a particular situation.
- Choose which equipment to use.

Obtain and present evidence

- Make a variety of relevant observations and measurements using simple apparatus correctly.
- Decide when observations and measurements need to be checked by repeating to give more reliable data.
- Use tables, bar charts and line graphs to present results.

Consider evidence and approach

- Make comparisons.
- Evaluate repeated results.
- Identify patterns in results and results that do not appear to fit the pattern.
- Use results to draw conclusions and to make further predictions.
- Suggest and evaluate explanations for predictions using scientific knowledge and understanding and communicate these clearly to others.
- Say if and how evidence supports any prediction made.

- **Biology**

Humans and animals

- Use scientific name for some major organs of body systems.
- Identify the position of major organs in the body.
- Describe the main functions of the major organs of the body.
- Explain how the functions of the major organs are essential.

Living things in their environment

- Explore how humans have positive and negative effects on the environment, e.g. loss of species, protection of habitats.
- Explore a number of ways of caring for the environment, e.g. recycling, reducing waste, reducing energy consumption, not littering, encouraging others to care for the environment.
- Know how food chains can be used to represent feeding relationships in a habitat and present these in text and diagrams.
- Know that food chains begin with a plant (the producer), which uses energy from the sun.
- Understand the terms *producer*, *consumer*, *predator* and *prey*.
- Explore and construct food chains in a particular habitat.

- **Chemistry**

Material changes

- Distinguish between reversible and irreversible changes.

- Explore how solids can be mixed and how it is often possible to separate them again.
- Observe, describe, record and begin to explain changes that occur when some solids are added to water.
- Explore how, when solids do not dissolve or react with water, they can be separated by filtering, which is similar to sieving.
- Explore how some solids dissolve in water to form solutions and, although the solid cannot be seen, the substance is still present.

- **Physics**

Forces and motion

- Distinguish between mass measured in kilograms (kg) and weight measured in Newtons, noting that kilograms are used in everyday life.
- Recognise and use units of force, mass and weight and identify the direction in which forces act.
- Understand the notion of energy in movement.
- Recognise friction (including air resistance) as a force which can affect the speed at which objects move and which sometimes stops things moving.

Electricity and magnetism

- Investigate how some materials are better conductors of electricity than others.
- Investigate how some metals are good conductors of electricity while most other materials are not.
- Know why metals are used for cables and wires and why plastics are used to cover wires and as covers for plugs and switches.
- Predict and test the effects of making changes to circuits, including length or thickness of wire and the number and type of components.
- Represent series circuits with drawings and conventional symbols.



