

Numeracy

Reception

Key Objectives

- Say and use the number names in order in familiar contexts.
- Count reliably up to 10 everyday objects.
- Recognise numerals 1 to 9.
- Use language such as more or less, greater or smaller, heavier or lighter, to compare two numbers or quantities.
- In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting.
- Find one more or one less than a number from 1 to 10.
- Begin to relate addition to combining two groups of objects, and subtraction to 'taking away'.
- Talk about, recognise and recreate simple patterns.
- Use language such as circle or bigger to describe the shape and size of solids and flat shapes.
- Use everyday words to describe position.
- Use developing mathematical ideas and methods to solve practical problems.

Cross Curricular Links

- Finding "one less" when the wolf blows down a house in Three Little Pigs in our Fun and Fantasy topic.
- Solving practical problems at the snack table - how many people do we have? Do we have enough fruit?
- Measuring dinosaur tails in our Ice Age topic.
- Numbers displayed on the bikes throughout our Journey's topic.
- Task cards in the role play area - asking children to count out three chairs etc when looking at Goldilocks, as part of our Fun and Fantasy topic.
- Comparing giant's clothes and Jack's clothes and using language of comparisons in our Growing topic.
- Counting the arms on the monster during Super Hero Week in our Fun and Fantasy topic.

Year One

Key Objectives

- Count reliably at least 20 objects.
- Count on and back in ones from any small number, and in tens from and back to zero.

- Read, write and order numbers from 0 to at least 20; understand and use the vocabulary of comparing and ordering these numbers.
- Within the range 0 to 30, say the number that is 1 or 10 more or less than any given number.
- Understand the operation of addition, and of subtraction (as 'take away' or 'difference'), and use the related vocabulary.
- Know by heart all pairs of numbers with a total of 10.
- Use mental strategies to solve simple problems using counting, addition, subtraction, doubling and halving, explaining methods and reasoning orally.
- Compare two lengths, masses or capacities by direct comparison.
- Suggest suitable standard or uniform non-standard units and measuring equipment to estimate, then measure, a length, mass or capacity.
- Use everyday language to describe features of familiar 3-D and 2-D shapes.

Cross Curricular Links

- Sorting animals as part of Rumble in the Jungle topic.
- Weighing as part of our Let's Party topic.
- 3d modelling as part of our rocket building in Out of this World .
- Measuring plants as part of Ready, Steady, Grow.
- Size and numbers as part of Once upon a Time.
- Directions and movements as part of What and Adventure.

Year Two

Key Objectives

- Count, read, write and order whole numbers to at least 100; know what each digit represents (including 0 as a place holder).
- Describe and extend simple number sequences (including odd/even numbers, counting on or back in ones or tens from any two-digit number, and so on).
- Understand that subtraction is the inverse of addition; state the subtraction corresponding to a given addition and vice versa.
- Know by heart all addition and subtraction facts for each number to at least 10.
- Use knowledge that addition can be done in any order to do mental calculations more efficiently.
- Understand the operation of multiplication as repeated addition or as describing an array.
- Know and use halving as the inverse of doubling.
- Know by heart facts for the 2 and 10 multiplication tables.
- Estimate, measure and compare lengths, masses and capacities, using standard units; suggest suitable units and equipment for such measurements.
- Read a simple scale to the nearest labelled division, including using a ruler to draw and measure lines to the nearest centimetre.
- Use the mathematical names for common 2-D and 3-D shapes; sort shapes and describe some of their features.

- Use mathematical vocabulary to describe position, direction and movement.
- Choose and use appropriate operations and efficient calculation strategies to solve problems, explaining how the problem was solved.

Cross Curricular Links

- Measures- Weighing ingredients to make food from around the world for our discovery day in our Come Dine With Me topic.
- Shape- Exploring and measuring to make 17th century houses in our Fire Fire topic.
- Money- to buy items from the time travel shop in Time Travel.
- Shape- Explore 3D shapes to make a model of Weston Super Mere Oh I Do Like to be Beside the Seaside.
- Measure- Measure 2D shapes to create a fox mask Animal Discovery
- Role play- shop- buying items, health centre- measuring different parts of the body, fire station- tally chart of item
- This domain includes numeracy and wider aspects of mathematics, including real life applications and problem solving.
- In addition, each year group will study one of the three problem types each term (logic puzzles, finding all the possibilities and finding rules and describing patterns).

Year 3

- Read, write and order whole numbers to at least 1000; know what each digit represents.
- Count on or back in tens or hundreds from any two- or three-digit number.
- Recognise unit fractions such as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, and use them to find fractions of shapes and numbers.
- Know by heart all addition and subtraction facts for each number to 20.
- Add and subtract mentally a 'near multiple of 10' to or from a two-digit number.
- Know by heart facts for the 2, 5 and 10 multiplication tables.
- Understand division and recognise that division is the inverse of multiplication.
- Use units of time and know the relationships between them (second, minute, hour, day, week, month, year).
- Understand and use £.p notation.
- Choose and use appropriate operations (including multiplication and division) to solve word problems, explaining methods and reasoning.
- Identify right angles.
- Identify lines of symmetry in simple shapes and recognise shapes with no lines of symmetry.
- Solve a given problem by organising and interpreting numerical data in simple lists, tables and graphs.

Cross Curricular links – Year 3

- Data handling – Rainbow fabrics. (Children collect survey data to help them choose the fabric for their cushion.)

- Money – Role play.
- Receptionist at museum (Before man/Night at museum)
- Rainbow fabric clothes shop. (Buying items using money, adding, subtracting and finding the right change).
- Reflection and symmetry – Hooray for Bollywood (creating rangoli patterns).
- 3D Shapes and nets – View from my window (creating models of buildings for a better Bearwood).

Year 4

- Use symbols correctly, including less than (<), greater than (>), equals (=).
- Round any positive integer less than 1000 to the nearest 10 or 100.
- Recognise simple fractions that are several parts of a whole, and mixed numbers; recognise the equivalence of simple fractions.
- Use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers.
- Carry out column addition and subtraction of two integers less than 1000, and column addition of more than two such integers.
- Know by heart facts for the 2, 3, 4, 5 and 10 multiplication tables.
- Derive quickly division facts corresponding to the 2, 3, 4, 5 and 10 multiplication tables.
- Find remainders after division.
- Know and use the relationships between familiar units of length, mass and capacity.
- Classify polygons, using criteria such as number of right angles, whether or not they are regular, symmetry properties.
- Choose and use appropriate number operations and ways of calculating (mental, mental with jottings, pencil and paper) to solve problems.

Cross Curricular links – Year 4

- Splash-: development of capacity measuring skills and applying to the real life context of steps to save water. Measuring water in evaporation investigations.

Going Wild: Context of populations in rounding, place value work and recording results in science investigations.

Chocolate: Data handling to support the design of a new chocolate product. 3D shape links when children design the nets for packaging.

Survival- ordering events in chronological order.

Year 5

- Multiply and divide any positive integer up to 10 000 by 10 or 100 and understand the effect.
- Order a given set of positive and negative integers.
- Use decimal notation for tenths and hundredths.
- Round a number with one or two decimal places to the nearest integer.
- Relate fractions to division and to their decimal representations.
- Calculate mentally a difference such as $8006 - 2993$.
- Carry out column addition and subtraction of positive integers less than 10000.
- Know by heart all multiplication facts up to 10×10 .
- Carry out short multiplication and division of a three-digit by a single-digit integer.
- Carry out long multiplication of a two-digit by a two-digit integer.
- Understand area measured in square centimetres (cm^2); understand and use the formula in words 'length \times breadth' for the area of a rectangle.
- Recognise parallel and perpendicular lines, and properties of rectangles.
- Use all four operations to solve simple word problems involving numbers and quantities, including time, explaining methods and reasoning.

Cross Curricular links – Year 5

- Shake Rattle & Roll -Number lines/data handling.
Oh what a Performance - Worded Problems associated with the theatre
It's Not Fair- Money - Fundraising - Data Handling
Emergency Shape - Designing a new logo for the Emergency Services – rotation, translation, symmetry and reflection.
The Dig – co-ordinate plotting/geocaching and compass directions.

Year 6

- Multiply and divide decimals mentally by 10 or 100, and integers by 1000, and explain the effect.
- Order a mixed set of numbers with up to three decimal places.
- Reduce a fraction to its simplest form by cancelling common factors.
- Use a fraction as an operator to find fractions of numbers or quantities (e.g. $\frac{5}{8}$ of 32, $\frac{7}{10}$ of 40, $\frac{9}{100}$ of 400 centimetres).
- Understand percentage as the number of parts in every 100, and find simple percentages of small whole-number quantities.
- Solve simple problems involving ratio and proportion.
- Carry out column addition and subtraction of numbers involving decimals.
- Derive quickly division facts corresponding to multiplication tables up to 10×10 .
- Carry out short multiplication and division of numbers involving decimals.
- Carry out long multiplication of a three-digit by a two-digit integer.
- Use a protractor to measure acute and obtuse angles to the nearest degree.

- Calculate the perimeter and area of simple compound shapes that can be split into rectangles.
- Read and plot co-ordinates in all four quadrants.
- Identify and use the appropriate operations (including combinations of operations) to solve word problems involving numbers and quantities, and explain methods and reasoning.
- Solve a problem by extracting and interpreting information presented in tables, graphs and charts.

Cross Curricular links – Year 6

- Oh what a picture: Measuring length linked to making frames for artwork.
- Vile Victorians: Percentage and fraction work linked to facts and statistics from this period of history. Worded problems linked to the Victorians.
- SOAP: Collecting of data to help choose the packaging design for the children's cleaning product.
- Who lives in a house like this: Ratio and proportion / scale linked to making model houses from different periods of history. Children also apply their measuring skills to construct their model buildings.
- Data handling linked to science investigations throughout the year. In particular collecting data, finding averages of observations, constructing line graphs and pie charts and interpreting data.
- Higher ability pupils will also study the level 6 mathematics curriculum if appropriate.