



**Maths**

**2022-2023**

<b>Birth to 3</b>
<p>Combine objects like stacking blocks and cups. Put objects inside others and take them out again.</p> <p>Take part in finger rhymes with numbers.</p> <p>React to changes of amount in a group of up to three items.</p> <p>Compare amounts, saying 'lots', 'more' or 'same'.</p> <p>Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence.</p> <p>Count in everyday contexts, sometimes skipping numbers - '1-2-3-5.'</p> <p>Climb and squeezing themselves into different types of spaces.</p> <p>Build with a range of resources.</p> <p>Complete inset puzzles.</p> <p>Compare sizes, weights etc. using gesture and language - 'bigger/little/smaller', 'high/low', 'tall', 'heavy'.</p> <p>Notice patterns and arrange things in patterns.</p>
<b>Aged 3 - 4</b>
<p>Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</p> <p>Recite numbers past 5.</p> <p>Say one number for each item in order: 1,2,3,4,5.</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').</p> <p>Show 'finger numbers' up to 5.</p> <p>Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</p> <p>Experiment with their own symbols and marks as well as numerals.</p> <p>Solve real world mathematical problems with numbers up to 5.</p> <p>Compare quantities using language: 'more than', 'fewer than'.</p> <p>Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.</p> <p>Understand position through words alone – for example, "The bag is under the table," – with no pointing.</p> <p>Describe a familiar route.</p> <p>Discuss routes and locations, using words like 'in front of' and 'behind'.</p> <p>Make comparisons between objects relating to size, length, weight and capacity.</p> <p>Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc.</p> <p>Combine shapes to make new ones – an arch, a bigger triangle, etc.</p> <p>Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.</p> <p>Extend and create ABAB patterns – stick, leaf, stick, leaf.</p> <p>Notice and correct an error in a repeating pattern.</p> <p>Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'</p>
<b>Children In Reception</b>
<p>Count objects, actions and sounds.</p> <p>Subitise.</p> <p>Link the number symbol (numeral) with its cardinal number value.</p> <p>Count beyond ten.</p> <p>Compare numbers.</p> <p>Understand the 'one more than/one less than' relationship between consecutive numbers.</p> <p>Explore the composition of numbers to 10.</p> <p>Automatically recall number bonds for numbers 0–5 and some to 10.</p> <p>Select, rotate and manipulate shapes to develop spatial reasoning skills.</p>

Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.  
Continue, copy and create repeating patterns.  
Compare length, weight and capacity.

### Early Learning Goal

Have a deep understanding of number to 10, including the composition of each number.  
Subitise (recognise quantities without counting) up to 5.  
Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Verbally count beyond 20, recognising the pattern of the counting system.  
Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.  
Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

### Year 1

#### Place Value

Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.  
Count, read and write numbers to 100 in numerals.  
Count in multiples of twos, fives and tens.  
Given a number, identify one more and one less.  
Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.  
Read and write numbers from 1 to 20 in numerals and words.

#### Add / Subtraction

Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.  
Represent and use number bonds and related subtraction facts within 20.  
Add and subtract one-digit and two-digit numbers to 20, including zero.  
Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as  $7 = \_ - 9$ .

#### Multiplication

Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

#### Fractions

Recognise, find and name a half as one of two equal parts of an object, shape or quantity.  
Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

#### Measure

Compare, describe & solve practical problems for: lengths/heights (long/short/tall, half/double); mass/weight (heavier/lighter); capacity/volume (full/empty, more/less); time (quicker/slower/later).  
Measure and begin to record the following: lengths/heights; mass/weight; capacity/volume; time (hours, minutes, seconds).  
Recognise and know the value of different denominations of coins and notes.  
Sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.

Recognise and use language relating to dates, including days of the week, weeks, months and years.

Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

### **Shape /Direction**

Recognise and name common 2-D shapes (e.g. rectangles, circles and triangles) and 3-D shapes (e.g. cuboids (including cubes), pyramids and spheres).

Describe position, directions and movements, including whole, half, quarter and three-quarter turns.

## **Year 2**

### **Place Value**

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

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

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

Compare and order numbers from 0 up to 100; use <, > and = signs.

Read and write numbers to at least 100 in numerals and in words.

### **Add/Subtraction**

Solve problems with addition and subtraction: using concrete objects and pictorial representations; applying their increasing knowledge of mental and written methods.

Recall and use add and subtract facts to 20 fluently, and derive and use related facts up to 100.

Add and sub nos using concrete objects, pictorial representations, and mentally, including: a 2-digit no and 1s or 10s; two 2-digit numbers; adding three 1-digit numbers.

Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.

### **Multiplication / Division**

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( $\times$ ), division ( $\div$ ) and equals (=) signs.

Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

### **Fractions**

Recognise, find, name & write fractions  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$  of a length, shape, set of objects or quantity.

Write simple fractions e.g.  $\frac{1}{2}$  of 6 = 3 and recognise the equivalence of  $\frac{2}{4}$  and  $\frac{1}{2}$

### **Measure**

Choose/use appropriate standard units to estimate/measure length/height (m/cm); mass (kg/g); temp ( $^{\circ}\text{C}$ ); cap (litres/ml) to nearest unit, using rulers, scales, thermometers and measuring vessels.

Compare and order lengths, mass, volume/capacity and record the results using >, < and = .

Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. Find different combinations of coins that equal the same amounts of money.

Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.

Compare and sequence intervals of time.

Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.

### **Shape / Direction**

Identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line.

Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.

Identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder and a triangle on a pyramid.

Compare and sort common 2-D and 3-D shapes and everyday objects.

Order & arrange combinations of mathematical objects in patterns & sequences.

Use math vocab to describe position, direction & movement inc movement in a straight line and distinguishing rotation as a turn & in terms of right angles for  $\frac{1}{4}$ ,  $\frac{1}{2}$ , &  $\frac{3}{4}$  turns (clock/anti-clockwise).

### **Graphs and Charts**

Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.

Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity; ask and answer questions about totalling and comparing categorical data.