

Geometry Progress Ladder

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Maths Makes Sense Foundation End-of-year objectives

| Counting | Number | Writing |
|--|---|--|
| <ul style="list-style-type: none"> Participate in stories, songs and rhymes involving number, repetition and actions Count forwards starting at any number (0–1000) Count backwards starting at any number (0–1000) Count up to 10 objects when asked How many...?, and reply with the correct number Count objects when asked ‘How much is there here?’ and reply with, for example, [number] cups | <ul style="list-style-type: none"> Read, say and match numbers 0–9 Read, say and match numbers 10–20 Sequence numbers in order Match the number of objects to the numeral Recognise and say numbers greater than 20 in an everyday context Play simple games that involve use of number | <ul style="list-style-type: none"> Recognise and write numbers from 0–9 Recognise and write numbers from 10–20 Recognise and write fractions: $\frac{1}{2}$ $\frac{1}{4}$ Copy and write Maths Stories, e.g. $2 + 3 - 4 = 1$ |
| Calculating | Shape | Position |
| <ul style="list-style-type: none"> Read what an addition or subtraction Maths Story with 1-digit whole numbers including $\frac{1}{2}$ and $\frac{1}{4}$ (with a whole-number answer) says Read what an addition or subtraction Maths Story with 1-digit whole numbers including $\frac{1}{2}$ and $\frac{1}{4}$ (with a whole-number answer) means Act the Real Story for an addition or subtraction Maths Story with 1-digit whole numbers including $\frac{1}{2}$ and $\frac{1}{4}$ with cups Act out a Real-Life Story an addition or subtraction Maths Story with 1-digit whole numbers including $\frac{1}{2}$ and $\frac{1}{4}$ using, e.g. pennies Share objects into equal groups and count how many in each group Participate in role play prompted by a Maths Story | <ul style="list-style-type: none"> Recognise, name and describe 2D shapes Play simple games that involve use of number, pattern, shape and language | <ul style="list-style-type: none"> Follow instructions that involve positional language Give directions that include positional language |
| Sorting and data | Measure | Problem-solving |
| <ul style="list-style-type: none"> Sort objects such as playing cards, number cards, coloured objects, 2D and 3D shapes according to criteria Read information from a simple block graph Make a simple block graph using blocks or bricks | <ul style="list-style-type: none"> Use comparative language, such as bigger/smaller, shorter/ longer, heavier/lighter to compare quantities. Tell the time using o'clock Use sand timers to measure minutes | <ul style="list-style-type: none"> Use knowledge and skills of counting to solve simple problems, e.g. counting pairs of socks Use knowledge and skills of songs and rhymes to join in with a modified song or rhyme, e.g. Three Little Dickie Birds Use knowledge and skills of number and calculating to solve simple problems, e.g. sharing nine cakes between three friends Use knowledge and skills of shape, position, sorting and measure to solve simple problems, e.g. building a room with construction bricks |

Maths Makes Sense 1 – 2 End-of-block objectives

| | Maths Makes Sense 1 | Maths Makes Sense 2 |
|----------------|---|--|
| BLOCK 1 | <ul style="list-style-type: none"> • Draw straight lines by joining named dots using a ruler, e.g. draw line AB • Draw open or closed shapes by joining named dots using a ruler, e.g. draw closed shape ABCD. | <ul style="list-style-type: none"> • Read information from grids to find the number of and the length of sides of shapes, the number of sticks needed to make them and the perimeter of closed shapes • Identify a line of symmetry in 2D shapes • Use the vocabulary 'line of symmetry' and 'not a line of symmetry'. |
| BLOCK 2 | <ul style="list-style-type: none"> • Read instructions for making a shape from a grid, e.g. five sticks, five sides, open, and use dm sticks to make the correct open or closed shape • Find and record the perimeter of closed shapes made with dm sticks, e.g. 5 dm • Measure a named straight lines, e.g. line AB, in centimetres with a ruler • Record the length of a named straight line, e.g. line AB in centimetres, e.g. 4 cm. | <ul style="list-style-type: none"> • Measure the lengths of sides of 2D shapes in millimetres, e.g. AB = 45 mm • Draw and name diagonals of 2D shapes and measure them in millimetres, e.g. 'miss-one-corner' diagonal AB = 49 mm • Draw the symbol for a turn • Recognise quarter turns in 2D shapes as right angles and draw the symbol for a right angle. |
| BLOCK 3 | <ul style="list-style-type: none"> • Using a labelled diagram of a 2D shape, select the correct number of dm sticks and make the shape • Turn through one full turn, a quarter, a half and three-quarters of one full turn, two full turns and three full turns. | <ul style="list-style-type: none"> • Recognise and name 2D faces in 3D shapes • Recognise and name 2D faces in pictures of 3D shapes • Use the vocabulary <i>side</i> and <i>corner</i> for 2D faces • Use the vocabulary <i>edge</i> and <i>vertex</i> for 3D shapes. |
| BLOCK 4 | <ul style="list-style-type: none"> • Name 2D shapes (triangle, quadrilateral, pentagon, hexagon, circle, ellipse) and for each polygon identify the number of sides • Use a dm stick to represent a <i>turn through</i> a half, a quarter or three-quarters of a full turn, from one direction to another, e.g. from direction SB to direction SC. | <ul style="list-style-type: none"> • Judge whether there is a line of symmetry or not on a 2D shape • Draw an arc to show turning through an angle and draw a right angle symbol to show turning through a right angle • Name and label faces in 3D shapes. |
| BLOCK 5 | <ul style="list-style-type: none"> • Recognise the difference between, and use actions for, 1D, 2D and 3D shapes • Identify 2D faces on 3D shapes, and name them as triangles, quadrilaterals, pentagons or hexagons. | <ul style="list-style-type: none"> • Recognise 2D shapes and polygons and name individual polygons • Recognise and copy the names of 'special' triangles and quadrilaterals, e.g. equilateral, isosceles and right-angled triangles, squares and rectangles. |
| BLOCK 6 | <ul style="list-style-type: none"> • Identify the 2D shapes that make up the faces of 3D shapes (no curved faces). | <ul style="list-style-type: none"> • Recognise squares, rectangles, isosceles triangles and equilateral triangles in different orientations • Recognise 3D shapes as 'polyhedra' or 'not polyhedra' • Recognise prisms and pyramids • Use nets to make 3D shapes, and identify which nets make cubes. |

Maths Makes Sense 3 – 4 End-of-block objectives

| | Maths Makes Sense 3 | Maths Makes Sense 4 |
|----------------|---|---|
| BLOCK 1 | <ul style="list-style-type: none"> Distinguish between a line through two points A and B and a line segment AB and know that the length of a line is 'infinity' and that a line segment has a length that can be measured Use a ruler to draw named straight line segments, e.g. AB and measure and write the length using cm and mm Name triangles, quadrilaterals (rectangles and squares), pentagons, hexagons, heptagons and octagons Recognise, name and use clockwise and anti-clockwise turns and draw an arc to show those turns. | <ul style="list-style-type: none"> On a pair of axes, draw the image of an object in a vertical, horizontal or oblique mirror line and label the image accurately, e.g. A in the object is labelled A' in the image. |
| BLOCK 2 | <ul style="list-style-type: none"> Draw a pair of axes (one quadrant) and label the axes 'x axis' and 'y axis' Plot points specified by their names and their coordinates, e.g. A (3, 5) Plot and label specified points, to draw polygons and measure sides and diagonals. | <ul style="list-style-type: none"> Use a protractor to draw acute angles Say whether a drawn angle is acute, obtuse or reflex. |
| BLOCK 3 | <ul style="list-style-type: none"> Know the measure in degrees (360°, 270°, 180°, 90°) of a full turn, a half turn, a three-quarter turn, a quarter turn Use angle templates to draw specified angles (multiples of 10°) using a named centre of rotation Use a set square as the angle template for a right angle. | <ul style="list-style-type: none"> Use the vocabulary <i>arc</i>, <i>chord</i>, <i>circumference</i>, <i>radius</i> and <i>diameter</i> correctly Follow instructions to use compasses to draw a circle, together with a hexagon and triangle within the circle, e.g. draw a circle with centre C and a radius of 3 cm. |
| BLOCK 4 | <ul style="list-style-type: none"> Recognise parallel lines and not parallel lines Draw a line segment specified by, e.g. AB with coordinates for A and B, and draw a line segment parallel to AB Draw a line segment specified by, e.g. AB with coordinates for A and B, and draw a line segment perpendicular to AB For two drawn lines described as being parallel, draw the arrow symbols and know that the arrows 'speak to us' to indicate they are parallel Recognise the shape and say the name <i>parallelogram</i>. | <ul style="list-style-type: none"> Draw a pair of axes and label them with positive and negative numbers Follow instructions to draw circles and polygons on a pair of axes (four quadrants) Name lines of symmetry. |
| BLOCK 5 | <ul style="list-style-type: none"> Use compasses and a ruler to copy triangles Compare triangles to say whether or not they are congruent Draw a triangle specified by coordinates On axes, draw a triangle congruent to another triangle. | <ul style="list-style-type: none"> Use compasses and a ruler to draw triangles with given lengths of sides, e.g. Draw triangle ABC, AB = 5 cm, BC = 5 cm, CA = 5 cm. |
| BLOCK 6 | <ul style="list-style-type: none"> Recognise and identify a pyramid or prism from its net For a 2D drawing, identify which 3D shape it represents Draw a triangle specified by coordinates and describe it as scalene, equilateral or isosceles. | <ul style="list-style-type: none"> Use a protractor to measure acute and obtuse angles in degrees Use the inside and outside protractors to draw specified acute and obtuse angles with centre of rotation C. |

Maths Makes Sense 5 – 6 End-of-block objectives

| | Maths Makes Sense 5 | Maths Makes Sense 6 |
|----------------|---|---|
| BLOCK 1 | <ul style="list-style-type: none"> Name the images of objects that are points, line segments or polygons in a symmetrical shape Know the line of symmetry is the perpendicular bisector in a symmetrical shape Name two congruent shapes in a shape with an axis of symmetry. | <ul style="list-style-type: none"> Find the sum of the exterior angles of a polygon Find the sum of the interior angles of a polygon. |
| BLOCK 2 | <ul style="list-style-type: none"> Name and draw acute angles, obtuse angles, reflex angles and right angles Name and calculate vertically opposite angles and supplementary angles Use a protractor to draw acute angles, obtuse angles and right angles. | <ul style="list-style-type: none"> Recognise reflection, translation, enlargement and rotation as transformations For an object and its image, recognise and name the transformation. |
| BLOCK 3 | <ul style="list-style-type: none"> Use a calculator to calculate the circumference of a circle using $C = \pi \times d$ Use a calculator to calculate the area of a circle using $A = \pi \times r^2$. | <ul style="list-style-type: none"> Use a protractor to measure the size of an angle in degrees; use a ruler to measure the length of a line, in millimetres Draw the image of a polygon in a mirror line Complete the drawing of a named, partially-drawn shape on a pair of axes Calculate the size of the two equal angles in an isosceles triangle Sort quadrilaterals according to their properties Complete the coordinates of the corners of a named shape using knowledge of its properties Find the angle of rotation for an object and image polygon. |
| BLOCK 4 | <ul style="list-style-type: none"> Recognise corresponding angles and know they have the same value Recognise vertically opposite angles and know they have the same value Recognise opposite interior angles in a parallelogram and know they have the same value. | <ul style="list-style-type: none"> Draw the lines of symmetry of any polygon Write the number of lines of symmetry for any polygon Identify and write the order of rotational symmetry for any polygon. |
| BLOCK 5 | <ul style="list-style-type: none"> Draw a convex polygon Draw and mark the exterior angles for a convex polygon Show that the sum of the exterior angles of a polygon is 360°. | <ul style="list-style-type: none"> Calculate an exterior angle of a regular polygon Calculate an interior angle of a regular polygon Calculate the third angle in a triangle. |
| BLOCK 6 | <ul style="list-style-type: none"> Recognise, name and sketch polygons (decagon, heptagon, hexagon, nonagon, octagon, pentagon, quadrilateral, triangle) Recognise, name and sketch a <i>equilateral</i> triangle, <i>isosceles</i> triangle, <i>right-angled</i> triangle, <i>scalene</i> triangle Recognise, name and sketch a parallelogram, rectangle, rhombus, square, trapezium Recognise the various special triangles and quadrilaterals, use the special name and recognise them as the more general polygons. | <ul style="list-style-type: none"> Draw the perpendicular bisector of a line segment Draw the bisector of an angle Draw the circum-circle of a triangle Draw the in-circle of a triangle. |