

Programme of study for Geometry

statutory requirements in bold, suggested steps in faint, **adult curriculum in green**

Properties of shapes, position and direction

Step 2

- Pupils should be provided with opportunities and support to:
- **Attempt to fit shapes into spaces on inset boards and jigsaw boards**
- *Choose to play with inset puzzles and jigsaws*
- *Watch how an adult manipulates the pieces to complete the puzzles*
- *Tries to place the pieces into the form board*
- **Use blocks to create their own simple structures and arrangements**
- *Choose to play with construction toys*
- *Make simple structures based on their prior learning and experiences*
- **Enjoy filling and emptying containers**

MSS2/M4.1 Demonstrate an awareness of object permanence such as by intentionally searching for objects which have gone out of sight, hearing or touch

Step 3

Pupils should be provided with opportunities and support to:

- **Notice simple shapes and patterns in pictures**
- *Observe shapes being put into a form board*
- *Handle shapes*
- *Roll a cylinder*
- **Begin to categorise objects by shape**
- *Sort objects by their shape*
- *Match 2d shapes*

MSS2/M5.1 Intentionally search for familiar objects in their usual place

Step 4

Pupils should be provided with opportunities and support to:

- **Show an interest in shape and space by playing with shapes and making arrangements with objects**

- *Choose to play with construction toys*
- *Make simple structures based on their prior learning and experiences*
- *Choose specific shapes for a specific purpose*
- *Make pictures by arranging 2d shapes*
- *Use shapes on a drawing package to make a picture/pattern*
- **Talk about the arrangements and models they have made**
- **Show an interest in shapes in the environment and an awareness of similarities of shapes**
- *Point out shapes they see in their environment*
- *Talk about everyday objects having the same shape e.g. the clock and the plate*
- *Use gesture and some simple mathematical language to show properties of shapes*
- **Use shapes appropriately for tasks**
- *Choose specific shapes for a specific purpose*
- **Use familiar objects and common shapes to create and recreate patterns and build 3D shapes**
- *Choose to work with a variety of materials to make 3D shapes*
- *Choose specific shapes for a specific purpose e.g. squares to make a 3D shape*

- **Begin to talk about the shapes of everyday objects e.g. it's round**

Step 5

Pupils should be encouraged to:

- **Begin to use mathematical names for solid 3D shapes and flat 2D shapes, and the mathematical language to describe them.**
 - *Circle, triangle, square, rectangle*
 - *semi-circle, oval*
 - *curved side, straight side*
 - *Begin to count the number of sides*
 - *Begin to identify the corners*
- **Select a particular named shape**
- **Use familiar objects and common shapes to create and recreate patterns and build models**
 - *Choose to play with construction toys*
 - *Make simple structures based on their prior learning and experiences*

- *Choose specific shapes for a specific purpose*

MSS2/M6.1 Search for objects not found in their usual place, demonstrating an understanding of object permanence

MSS2/M6.2 With some inconsistencies, demonstrate an increasing understanding that objects have names related to their shape or dimensions, using a simple descriptive vocabulary, including

1. *Square, circle, round*
2. *Big, small*

MSS2/M7.1 With some inconsistencies, recognise and select 2-D shapes, using their named outline from a collection, including

Circle, square, triangle, rectangle

MSS2/M7.2 Recognise and select 3-D shapes, using their familiar names, including

1. *ball* (for a sphere)
2. *box* (for a cube)

MSS2/M7.3 Demonstrate a developing understanding that 3-D shapes can be represented in 2-D formats

Step 6

Pupils should be taught to:

- **Recognise and name common 2D shapes:**
 - circle, triangle, square, rectangle
 - semi-circle, oval, pentagon, other 2D shapes

MSS2/M8.1 Recognise some common 2-D shapes, using a familiar and simple vocabulary to describe their shape, size and attributes, including

1. *straight, curved, flat,*
 2. *larger, smaller*
 3. *circle, square, rectangle, triangle*
- **Recognise and name common 3D shapes**
 - cone, sphere, cube
 - cuboids, pyramids, prisms

MSS2/M8.2 Recognise some common 3-D shapes, using a familiar and simple vocabulary to describe their shape, size and attributes, including

1. *straight, curved, flat,*
2. *larger, smaller*
3. *ball, box*

MSS2/E1.1 Recognise and name common 2-D and 3-D shapes

- understand that shape is independent of size
- understand the difference between 2-D (e.g. flat) and 3-D (e.g. solid, or a container) shapes

- **Recognise position, directions and movements;**
using vocabulary such as forwards, backwards, turn, top, middle bottom, up, down, inside, outside

MSS2/E1.1 understand everyday positional vocabulary (e.g. between, inside or near to)

Step 7

- **Pupils should be taught to:**

- Find shapes on the face of objects
- Find similar shapes on a group of objects
- Describe a shape in terms of sides, corners and straightness of sides

Sort shapes according to properties e.g. number of corners

MSS2/E2.1 Recognise and name common 2-D and 3-D shapes

- **Describe and undertake positional directions and movements,** using vocabulary such as forwards, backwards, turn, top, middle bottom, up, down, inside, outside
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Step 8

Pupils should be taught to:

- **draw 2-D shapes and make 3-D shapes using modelling materials;**
- **recognise 3-D shapes in different orientations**

– understand that shape is independent of orientation, and recognise shapes in different orientations

- **recognise angles as a property of shape or a description of a turn**
- **identify horizontal and vertical lines**

Describe and demonstrate position, directions and movements, including turns, half turns, left, right, behind, etc.

MSS2/E2.3 use positional vocabulary

– understand and use positional vocabulary, e.g. on the left, on the right, above, below,

Step 9

Pupils should be taught to:

- identify and describe the properties of 2-D shapes, including the number of sides and line 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 [eg, a circle on a cylinder, a triangle on a pyramid]
- compare and sort common 2-D and 3-D shapes and everyday objects.
- recognise 3-D shapes in different orientations and describe them

MSS2/E2.2 Describe the properties of common 2-D and 3-D shapes

- such as the number of sides and corners
- such as the shape of faces, and the number of faces, edges and corners
- order and arrange combinations of mathematical objects in patterns and sequences
- use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn.
- Recognise right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).
- identify pairs of perpendicular and parallel lines.

Step 10

- identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn;
- identify whether angles are greater than or less than a right angle

- **identify horizontal and vertical lines and pairs of perpendicular and parallel lines.**

MSS2/E3.1 Sort 2-D and 3-D shapes to solve practical problems using properties e.g. lines of symmetry, side, length, angles

- understand and use vocabulary related to shape, e.g. side length, angle, line of symmetry
 - identify right angles in 2-D shapes and in the environment
 - recognise that a straight line is equivalent to two right angles
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Step 11

Pupils should be taught to:

compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes

identify acute and obtuse angles and compare and order angles up to two right angles by size

identify lines of symmetry in 2-D shapes presented in different orientations

complete a simple symmetric figure with respect to a specific line of symmetry

describe positions on a 2-D grid as coordinates in the first quadrant

describe movements between positions as translations of a given unit to the left/right and up/down

plot specified points and draw sides to complete a given polygon.