

# Geometric reasoning 5.9

Length of unit:  
**2 weeks**

Week beg:

Year:5

Teacher:

**Success criteria**

Pupils can explain how to reflect and translate shapes on a grid in the first quadrant and use this knowledge and understanding to solve problems.

- Prior Learning:**
- Check that children can already
- 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
  - 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
  - complete a simple symmetric figure with respect to a specific line of symmetry
  - measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
  - find the area of rectilinear shapes by counting squares

**Resources**

Maths vocabulary book

Using and Applying in every maths lesson

Assessment through guided maths

Think Maths!

Pitch and Expectations Y6 and Y7

Mind the Gap (L3 to L4)

Overcoming Barriers to Learning – L3 to 4 and L4 to 5 (available online)

Securing Level 4 and Securing Level 5 documents

Errors and Misconceptions in Maths at KS2

**Guidance**

Pupils recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant. Reflection should be in lines that are parallel to the axes.

See also guidance in sequence 5.14.

## Learning objectives

Pupils should be taught to:

Geometry: properties of shapes

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees ( $^{\circ}$ )
- Identify:
  - angles at a point and one whole turn (total  $360^{\circ}$ )
  - angles at a point on a straight line and  $\frac{1}{2}$  a turn (total  $180^{\circ}$ )
  - other multiples of  $90^{\circ}$
- use the properties of rectangles to deduce related facts and find missing lengths and angles
- distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Geometry: position and direction

- identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

## Pupil outcomes:

*I can draw a right angled triangle on a grid, identify the coordinates of the vertices and explain what happens to the coordinates if the triangle is reflected in a line parallel to the y-axis and how I know that the triangles are congruent.*