



Knowledge Organiser Focus:

The Cartesian plane

I should already know:

How to plot a coordinate

The names of different 2D shapes

I will learn:

Work with Cartesian coordinates

Find missing coordinates

Calculate and use area of different shapes

Compete individual transformations of shapes

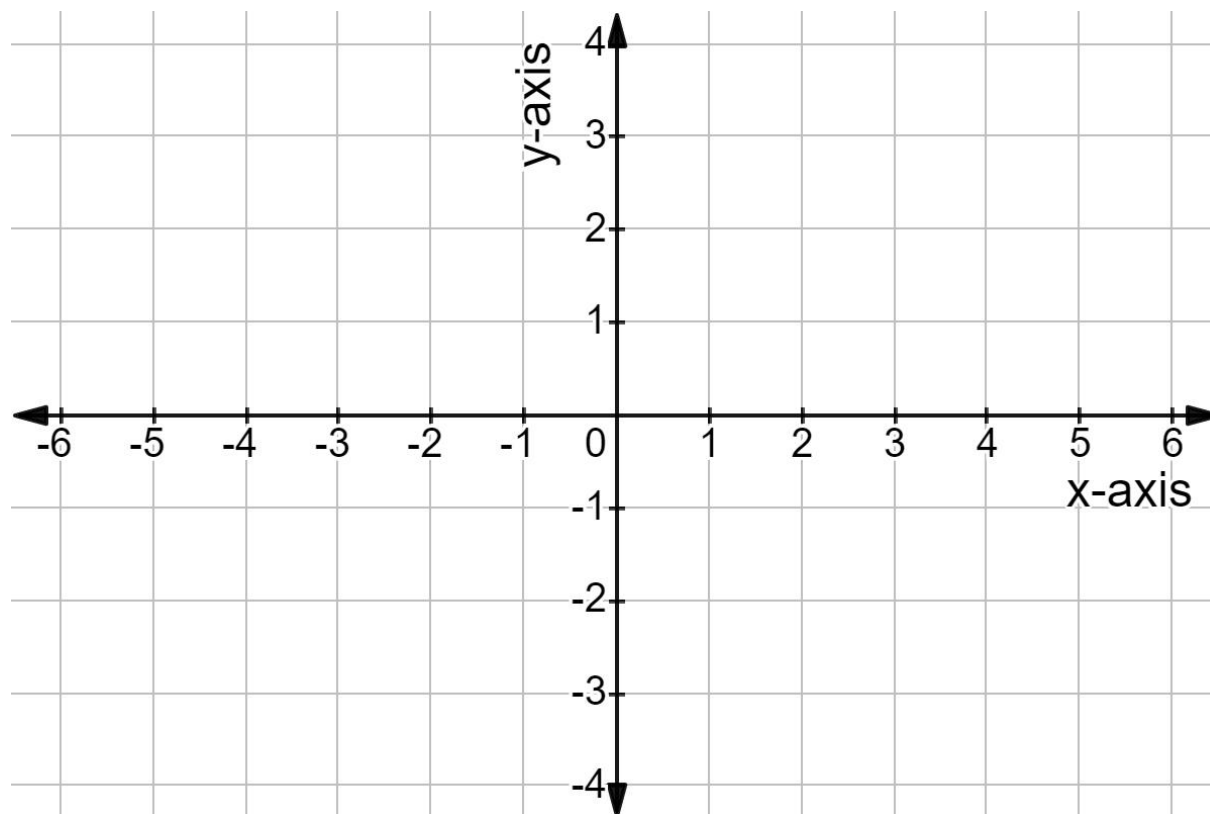
Combine transformations of shapes

This will help in the future:

Working in the Cartesian plane will allow you to represent different areas of maths in a pictorial form, which can improve understanding





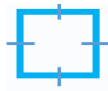

Key Words

Polygon	A closed shape made of only straight sides
Parallel	Straight lines that go in the same direction and staying the same distance apart
Perpendicular	Lines that are at 90° to each other
Property (shape)	Something that can be used to describe a shape
Quadrilateral	Any shape made of 4, straight sides



Greater Depth Challenge
Can you work out how coordinates will work in 3 dimensions?







Further Reading
Hegarty Maths

Unit 10 - coordinates		
No.	Question	Answer
10.1	What does the x coordinate describe?	The horizontal location
10.2	What does the y coordinate describe?	The vertical location
10.3	What coordinate is the origin?	(0, 0)
10.4	What does equidistant mean?	At equal distances from a point
10.5	What is a line segment?	A portion of a line that connects two points
10.6	What is a midpoint?	A point that divides a line segment into two equal parts
10.7	What is a vertex?	The point where two edges meet
10.8	What is the name of this shape? 	Rectangle <ul style="list-style-type: none"> - 2 pairs of equal sides - 2 pairs of parallel sides - 4 right angles
10.9	What is the name of this shape? 	Rhombus <ul style="list-style-type: none"> - 4 equal sides - 2 pairs of parallel sides - Opposite angles are equal
10.10	What is the name of this shape? 	Parallelogram <ul style="list-style-type: none"> - 2 pairs of equal sides - 2 pairs of parallel sides - Opposite angles are equal
10.11	What is the name of this shape? 	Kite <ul style="list-style-type: none"> - 2 pairs of equal, adjacent sides - No parallel sides - 1 pair of equal angles
10.12	What is the name of this shape? 	Square <ul style="list-style-type: none"> - 4 equal sides - 2 pairs of parallel sides - 4 right angles
10.12	What is the name of this shape? 	Triangle <ul style="list-style-type: none"> - Equilateral triangle – 3 equal sides - Isosceles triangle – 2 equal sides - Scalene triangle – No equal sides
10.13	What is a horizontal line?	A line that is parallel to the x axis
10.14	What is a vertical line?	A line that is parallel to the y axis
10.15	What is a line of symmetry?	A line of reflection where there is equal distance on either side of the line between the original and the image

Unit 11 – area of 2D shapes		
No.	Question	Answer
11.1	What is perimeter?	The total distance around the outside of a shape
11.2	What is area?	the space inside the boundary of a shape
11.3	What is a compound shape?	Combining two or more 2D shapes to form a new shape
11.4	What is a rectilinear shape?	Combining two or more rectangles to form a new shape. All sides meet at a right angle
11.5	How do you find the area of a compound shape?	The sum of the areas of the original shapes
11.6	How do you calculate the area of a rectangle?	$A \times B$, where A and B are the sides of the shape
11.7	How do you calculate the area of a parallelogram?	$A \times B$, where A is one side of the shape and B is the perpendicular measurement
11.8	How do you calculate the area of a triangle?	$\frac{A \times B}{2}$, where A and B are two perpendicular measurements of the triangle
11.9	What does congruent mean?	Identical in shape and size

Unit 12 – transformations		
No.	Question	Answer
12.1	What is translation?	When every point in the shape moves by the same distance in the same direction
12.2	What is a column vector?	Used to describe translations
12.3	What is rotation?	When a shape moves about a point of rotation
12.4	What three pieces of information do you need to rotate a shape?	<ol style="list-style-type: none"> 1. A centre of rotation 2. Amount of rotation 3. Direction (clockwise or anticlockwise)
12.5	What is a centre of rotation?	A fixed point around which a shape is rotated
12.6	What is reflection?	When a point and its reflection are equidistant from a line of reflection (as it would be seen in a mirror)
12.7	What is a single transformation?	A combination of more than one transformation
12.8	What is enlargement?	Changes the size of the shape by a scale factor from a centre point
12.9	What is the scale factor?	What all the sides are multiplied by to get the enlargement

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