

Mathematics: Year 1

Geometry: Position and direction

Previously, I have learnt...

- To talk about size, weight, capacity, time and money to compare quantities and objects
- To explore and describe the characteristics of everyday objects and shapes

In Year 1, I am learning...

- To describe position, direction and movement, including half, quarter and three-quarter turns.

In Year 2, I will learn...

- To use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for a quarter, half and three-quarter turns (clockwise and anti-clockwise)

My future...

In other subjects
 Science - understanding data
 DT - taking measurements, understanding shape
 PE - keeping score, measuring, angles
 Geography - coordinates, maps
 Computing - databases, coding

Life Skills
 Shopping and budgeting
 Critical thinking
 Playing sport
 Map reading
 Interpreting statistics
 Working with computers

Jobs
 Shop worker
 Bank cashier
 Architect
 Doctor
 Nurse
 Teacher
 Computer programmer
 and many more!

Quarter Turn

$\frac{1}{4}$ turn 1 right angle
quarter-turn clockwise 90°

$\frac{1}{4}$ turn 1 right angle
quarter-turn anticlockwise 90°

Half Turn

$\frac{1}{2}$ turn 2 right angles
half-turn clockwise 180°

$\frac{1}{2}$ turn 2 right angles
half-turn anticlockwise 180°

Vocabulary

position
 over, under
 above, below
 outside, inside
 in front, behind
 before
 after

beside, next to
 opposite
 between
 middle
 edge
 centre
 corner
 direction

journey
 left
 right
 up
 down
 backwards
 sideways
 across

to
 from
 towards
 away from
 movement
 slide
 roll

turn
 whole turn
 half turn
 quarter turn

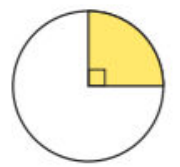


Alan Turing

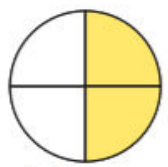
Mathematics: Year 2
Geometry: Position and direction

In Year 1, I learnt...

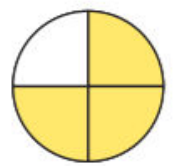
- To describe position, direction and movement, including half, quarter and three-quarter turns.



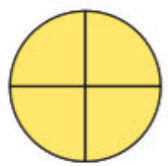
quarter turn



half turn



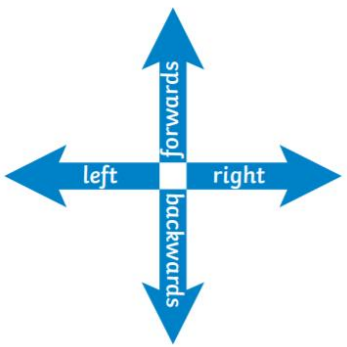
three-quarter turn



full turn

In Year 2, I am learning...

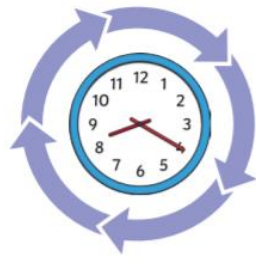
- To use mathematical vocabulary to describe position, direction and movement including movement in a straight line
- To understand rotation as a turn and in terms of right angles for a quarter, half and three-quarter turns (clockwise and anti-clockwise)



In Year 4, I will learn...

- To describe positions on a 2D grid as coordinates in the first quadrant
- To describe movements between positions as translations of a given unit to the left/right and up/down
- To plot specified points and draw sides to complete a given polygon

clockwise



anticlockwise



My future...

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and many more!

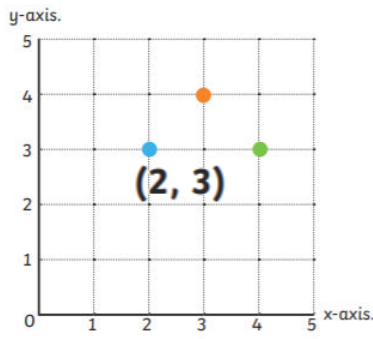
Vocabulary				
position	between	up	movement	rotation
over, under	middle	down	slide	clockwise
above, below	edge	backwards	roll	anti-clockwise
outside, inside	centre	sideways	turn	straight line
in front, behind	corner	across	whole turn	ninety degree turn
before	direction	to	half turn	right angle
after	journey	from	quarter turn	route
beside, next to	left	towards		
opposite	right	away from		



Ada Lovelace

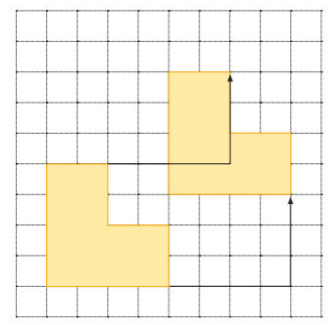
In Year 2, I learnt...

- To use mathematical vocabulary to describe position, direction and movement including movement in a straight line
- To understand rotation as a turn and in terms of right angles for a quarter, half and three-quarter turns (clockwise and anti-clockwise)



In Year 4, I am learning...

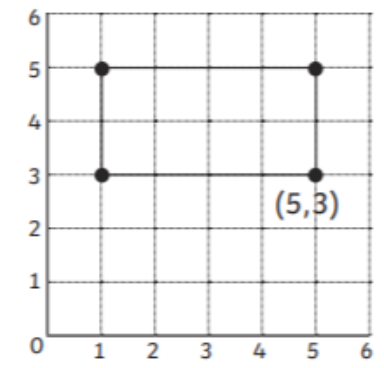
- To describe positions on a 2D grid as coordinates in the first quadrant
- To describe movements between positions as translations of a given unit to the left/right and up/down
- To plot specified points and draw sides to complete a given polygon



This shape has been translated 4 units right and 3 units up.

In Year 5, I will learn...

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



My future...

In other subjects
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Vocabulary

position
 over, under
 above, below
 outside, inside
 in front, behind
 before
 after
 beside, next to
 opposite
 between
 middle

edge
 centre
 corner
 direction
 journey
 left
 right
 up
 down
 backwards
 sideways

across
 to
 from
 towards
 away from
 movement
 slide
 roll
 turn
 whole turn

half turn
 quarter turn
 rotation
 clockwise
 anti-clockwise
 straight line
 ninety degree turn
 right angle
 route

greater/less than
 ninety degrees
 orientation
 compass point
 north, south, east, west
 horizontal
 vertical
 diagonal
 vertex, vertices

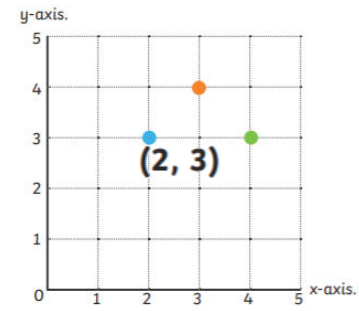
coordinates
 translation, translate
 rotation, rotate
 quadrant
 x axis
 y axis
 north-east, north-west
 south-east, south-west



Rene Descartes

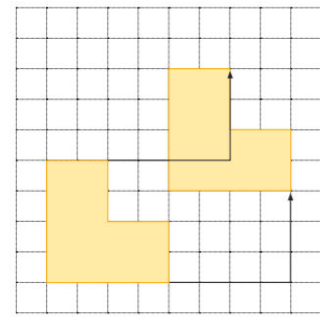
In Year 4, I learnt...

- To describe positions on a 2D grid as coordinates in the first quadrant
- To describe movements between positions as translations of a given unit to the left/right and up/down
- To plot specified points and draw sides to complete a given polygon



In Year 5, I am learning...

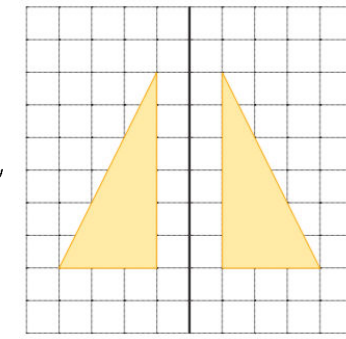
- To identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language
- To know that, when reflected or translated, the shape has not changed



This shape has been translated 4 units right and 3 units up.

In Year 6, I will learn...

- To describe positions on the full coordinate grid (all four quadrants)
- To draw and translate simple shapes on the coordinate plane
- To reflect simple shapes in the axes of the coordinate plane



This shape has been reflected in the mirror line.

My future...

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backwards
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across
to
from
towards
away from
movement
slide
roll
turn
whole turn

half turn
quarter turn
rotation
clockwise
anti-clockwise
straight line
ninety degree turn
right angle
route
greater/less than
ninety degrees

orientation
compass point
north, south, east,
west
horizontal
vertical
diagonal
coordinates
translation, translate
rotation, rotate
reflection, reflect

mirror line
quadrant
x axis
y axis
north-east, north-west
south-east, south-west
reflex angle
dimensions



Katherine Johnson

In Year 5, I learnt...

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

In Year 6, I am learning...

- To describe positions on the full coordinate grid (all four quadrants)
- To draw and translate simple shapes on the coordinate plane
- To reflect simple shapes in the axes of the coordinate plane

At Key Stage 3, I will learn...

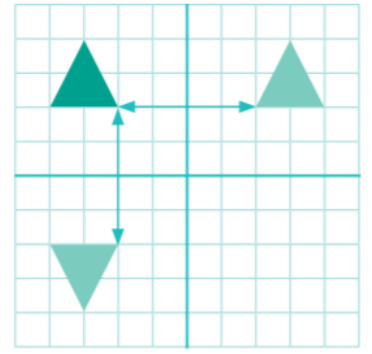
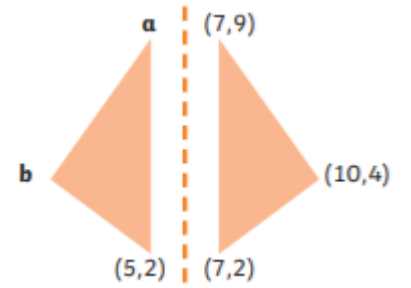
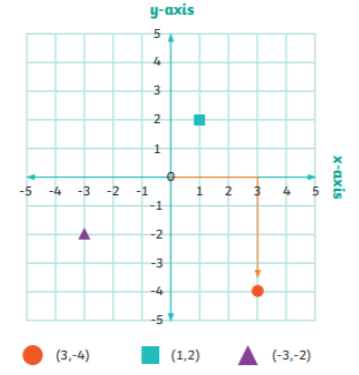
- To describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric
- To identify properties of, and describe the results of, translations, rotations and reflections applied to given figures

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Vocabulary

position	edge	across	half turn	orientation	quadrant
over, under	centre	to	quarter turn	compass point	x axis
above, below	corner	from	rotation	north, south, east, west	y axis
outside, inside	direction	towards	clockwise	horizontal	north-east, north-west
in front, behind	journey	away from	anti-clockwise	vertical	south-east, south-west
before	left	movement	straight line	diagonal	reflex angle
after	right	slide	ninety degree turn	coordinates	dimensions
beside, next to	up	roll	right angle	translation, translate	four quadrants
opposite	down	turn	route	rotation, rotate	full coordinate plane
between	backwards	whole turn	greater/less than ninety degrees	reflection, reflect	
middle	sideways				



Muhammad ibn Musa al-Khwarizmi