

Mathematics: Year 1 Geometry: Properties of Shape

Previously, I have learnt...

- To talk about size and distance when comparing objects
- To explore and describe the characteristics of everyday objects and shapes

In Year 1, I am learning...

- Identifying shapes and their properties
- To recognise and name common 2D and 3D shapes including:
 - 2D shapes (for example rectangles (including squares), circles and triangles)
 - 3D shapes (for example cuboids (including cubes), pyramids and spheres)

In Year 2, I will learn...

- Identifying shapes and their properties
- To identify and describe the properties of 2D shapes, including the number of sides and lines of symmetry in a vertical line
 - To identify and describe the properties of 3D shapes, including the number of edges, vertices and faces
 - To identify 2D shapes on the surface of 3D shapes

- Comparing and classifying
- To compare and sort common 2D and 3D shapes and everyday objects

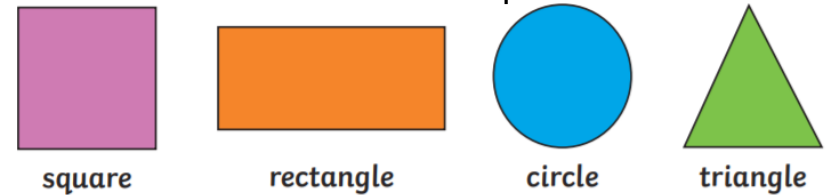
My future...

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

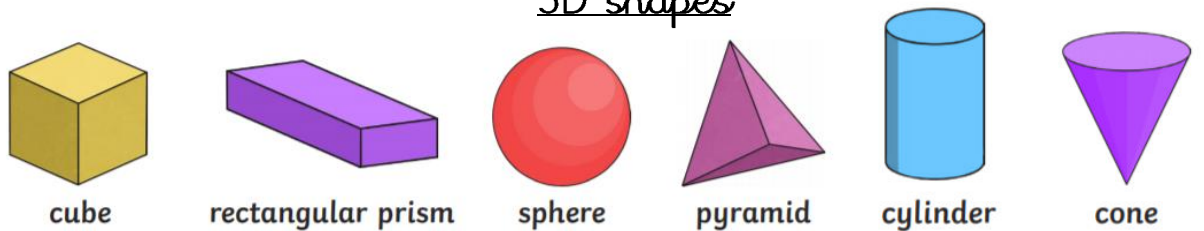
Life Skills
 Shopping and budgeting
 Critical thinking
 Playing sport
 Map reading
 Interpreting statistics
 Working with computers

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

2D shapes

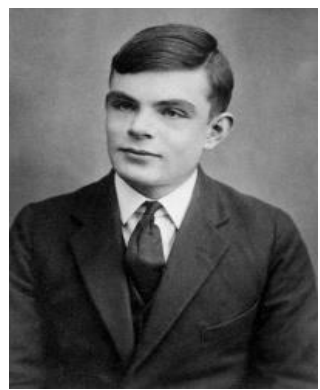


3D shapes



Vocabulary

- | | | | |
|-----------|----------|------------------|----------|
| group | cube | face | straight |
| sort | cuboid | side | round |
| circle | pyramid | edge | hollow |
| triangle | sphere | vertex, vertices | solid |
| rectangle | cone | flat | |
| square | cylinder | curved | |



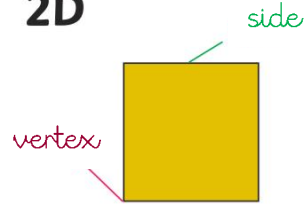
Alan Turing

In Year 1, I learnt...

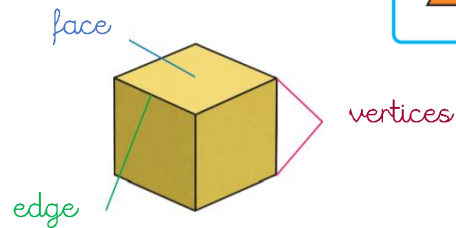
Identifying shapes and their properties

- To recognise and name common 2D and 3D shapes including:
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 - 3D shapes (for example cuboids (including cubes), pyramids and spheres)

2D



3D



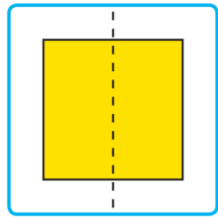
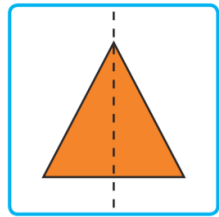
In Year 2, I am learning...

Identifying shapes and their properties

- To identify and describe the properties of 2D shapes, including the number of sides and lines of symmetry in a vertical line
- To identify and describe the properties of 3D shapes, including the number of edges, vertices and faces
- To identify 2D shapes on the surface of 3D shapes

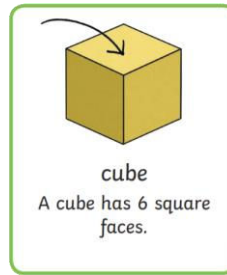
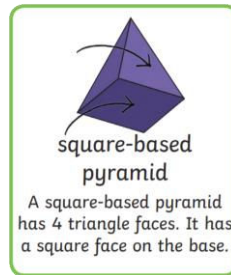
Comparing and classifying

- To compare and sort common 2D and 3D shapes and everyday objects



Lines of symmetry

Identifying 2D shapes on the surface of 3D shapes



In Year 3, I will learn...

Drawing and constructing

- To draw 2D shapes and make 3D shapes using modelling materials
- To recognise 3D shapes in different orientations and describe them

Angles

- To recognise angles as a property of shape or a description of a turn
- To identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four make a complete turn.
- To identify whether angles are greater than or less than a right angle
- To identify horizontal and vertical lines and pairs of perpendicular and parallel lines

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!



Ada Lovelace

Vocabulary

- | | | | | |
|-----------|----------|------------------|------------------|----------|
| group | cuboid | edge | solid | circular |
| sort | pyramid | vertex, vertices | size | pentagon |
| circle | sphere | flat | larger, smaller | hexagon |
| triangle | cone | curved | symmetrical | heptagon |
| rectangle | cylinder | straight | line of symmetry | octagon |
| square | face | round | mirror line | |
| cube | side | hollow | rectangular | |

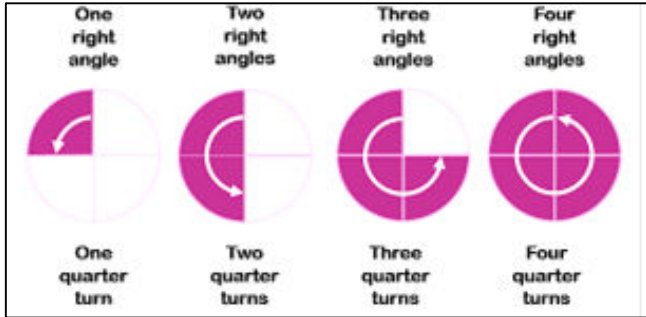
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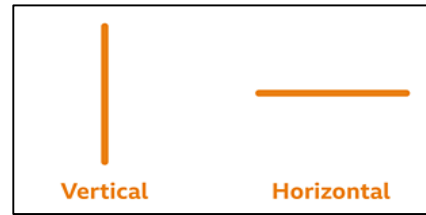
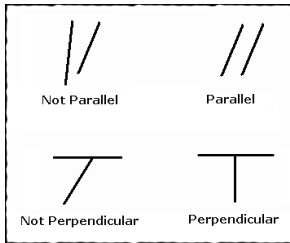
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- To identify whether angles are greater than or less than a right angle
- To identify horizontal and vertical lines and pairs of perpendicular and parallel lines



In Year 4, I will learn...

Identifying shapes and their properties

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

Drawing and constructing

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

Comparing and classifying

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

Angles

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

My future...

In other subjects

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

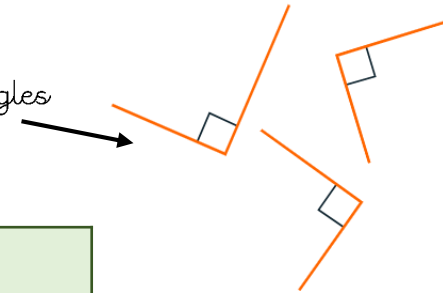
Life Skills

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

Jobs

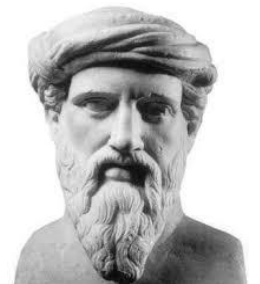
Shop worker
Bank cashier
Architect
Doctor
Nurse
Teacher
Computer programmer
and many more!

Right angles



Vocabulary

group	sphere	round	circular	pentagonal
sort	cone	hollow	pentagon	hexagonal
circle	cylinder	solid	hexagon	heptagonal
triangle	face	size	heptagon	octagonal
rectangle	side	larger, smaller	octagon	right-angled
square	edge	symmetrical	horizontal	prism
cube	vertex, vertices	line of symmetry	vertical	pyramid
cuboid	flat	mirror line	perpendicular	
pyramid	curved	rectangular	parallel	
	straight			



Pythagoras

Mathematics: Year 4
Geometry: Properties of Shape

In Year 3, I learnt...

Drawing and constructing

- To draw 2D shapes and make 3D shapes using modelling materials
- To recognise 3D shapes in different orientations and describe them

Angles

- To recognise angles as a property of shape or a description of a turn
- To identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four make a complete turn.
- To identify whether angles are greater than or less than a right angle
- To identify horizontal and vertical lines and pairs of perpendicular and parallel lines

In Year 4, I am learning...

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Drawing and constructing

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

Comparing and classifying

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

Angles

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

In Year 5, I will learn...

Identifying shapes and their properties

- To identify 3D shapes, including cubes and other cuboids, from 2D representations

Drawing and constructing

- Draw given angles, and measure them in degrees (°)

Comparing and classifying

- To use the properties of rectangles to deduce related facts and find missing lengths and angles
- To distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Angles

- To know angles are measured in degrees
- To identify:
 - angles at a point and one whole turn (total 360°)
 - angles at a point on a straight line and ½ a turn (total 180°)
 - angles at a right angle (total 90°)

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!

Vocabulary

group	sphere	round	circular	pentagonal	quadrilaterals
sort	cone	hollow	pentagon	hexagonal	acute
circle	cylinder	solid	hexagon	heptagonal	obtuse
triangle	face	size	heptagon	octagonal	centre
rectangle	side	larger, smaller	octagon	right angle	base
square	edge	symmetrical	horizontal	right-angled	oblong
cube	vertex, vertices	line of symmetry	vertical	prism	rectilinear
cuboid	flat	mirror line	perpendicular	pyramid	equilateral
pyramid	curved	rectangular	parallel		isosceles
	straight				scalene



Rene Descartes

Mathematics: Year 5
Geometry: Properties of Shape

In Year 4, I learnt...

Identifying shapes and their properties

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

Drawing and constructing

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

Comparing and classifying

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

Angles

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

In Year 5, I am learning...

Identifying shapes and their properties

- To identify 3D shapes, including cubes and other cuboids, from 2D representations

Drawing and constructing

- Draw given angles, and measure them in degrees (°)

Comparing and classifying

- To use the properties of rectangles to deduce related facts and find missing lengths and angles
- To distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Angles

- To know angles are measured in degrees
- To identify:
 - angles at a point and one whole turn (total 360°)
 - angles at a point on a straight line and ½ a turn (total 180°)
 - angles at a right angle (total 90°)

In Year 6, I will learn...

Identifying shapes and their properties

- To recognise and describe simple 3D shapes
- To illustrate and name parts of circles, including radius, diameter and circumference
- To know that the diameter is twice the radius

Drawing and constructing

- To draw 2D shapes using given dimensions and angles
- To build simple 3D shapes including making nets

Comparing and classifying

- To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- To compare and classify geometric shapes based on their properties and sizes
- To find unknown angles in any triangles, quadrilaterals and regular polygons

Angles

- To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

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

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Computer programmer and many more!

Vocabulary						
group	sphere	round	circular	pentagonal	acute	regular
sort	cone	hollow	pentagon	hexagonal	obtuse	irregular
circle	cylinder	solid	hexagon	heptagonal	centre	polygon
triangle	face	size	heptagon	octagonal	base	degrees (°)
rectangle	side	larger, smaller	octagon	right angle	oblong	tetrahedron
square	edge	symmetrical	horizontal	right-angled	rectilinear	octahedron
cube	vertex, vertices	line of symmetry	vertical	prism	equilateral	
cuboid	flat	mirror line	perpendicular	pyramid	isosceles	
pyramid	curved	rectangular	parallel	quadrilaterals	scalene	
	straight					



Katherine Johnson



Identifying shapes and their properties

- To identify 3D shapes, including cubes and other cuboids, from 2D representations

Drawing and constructing

- Draw given angles, and measure them in degrees ($^{\circ}$)

Comparing and classifying

- To use the properties of rectangles to deduce related facts and find missing lengths and angles
- To distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Angles

- To know angles are measured in degrees
- To identify:
 - angles at a point and one whole turn (total 360°)
 - angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°)
 - angles at a right angle (total 90°)

Identifying shapes and their properties

- To recognise and describe simple 3D shapes
- To illustrate and name parts of circles, including radius, diameter and circumference
- To know that the diameter is twice the radius

Drawing and constructing

- To draw 2D shapes using given dimensions and angles
- To build simple 3D shapes including making nets

Comparing and classifying

- To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- To compare and classify geometric shapes based on their properties and sizes
- To find unknown angles in any triangles, quadrilaterals and regular polygons

Angles

- To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

- To draw and measure line segments and angles in geometric figures
- To recognise and use the perpendicular distance from a point to a line as the shortest distance to the line
- To describe, sketch and draw: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons
- To label the sides and angles of triangle ABC, and recognise congruent triangles
- To derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures
- To apply the properties of angles at a point, angles at a point on a straight line, and vertically opposite angles
- To derive and use the sum of angles in a triangle to deduce the angle sum in any polygon
- To use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles
- To use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3D shapes

In other subjects

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Life Skills

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Jobs

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

Vocabulary						
group	cylinder	size	horizontal	prism	isosceles	vertically opposite
sort	face	larger, smaller	vertical	pyramid	scalene	circumference
circle	side	symmetrical	perpendicular	quadrilaterals	regular	radius
triangle	edge	line of symmetry	parallel	acute	irregular	diameter
rectangle	vertex, vertices	mirror line	pentagonal	obtuse	polygon	net, open, closed
square	flat	rectangular	hexagonal	base	degrees ($^{\circ}$)	intersecting
cube	curved	circular	heptagonal	oblong	tetrahedron	intersection
cuboid	straight	pentagon	octagonal	rectilinear	octahedron	kite
pyramid	round	hexagon	right angle	equilateral		dodecahedron
sphere	hollow	heptagon	right-angled			
cone	solid	octagon				



Muhammad ibn Musa al-Khwarizmi