

Academic Year 2023-2024

Stage 8

Ratio

two to three

2 : 3



-Representing and simplifying ratios

Dividing Quantities into ratios

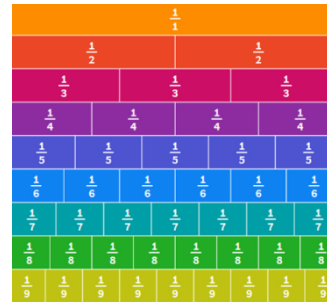
Share £300 in the ratio 8 : 5 : 2

$$8 + 5 + 2 = 15$$

$$300 \div 15 = 20$$

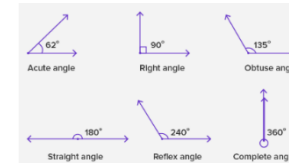
- Dividing quantities into ratios

Arithmetic with fractions



- Arithmetic with mixed numbers (including negatives)

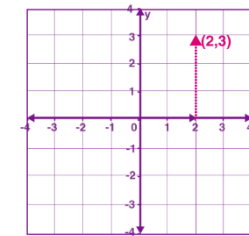
Lines and Angles



-Using correct conventions for drawing (including points, lines, parallel lines, perpendicular lines and right angles)

-Using the properties of angles at a point, on a straight line and vertically opposite

Graphs of linear functions



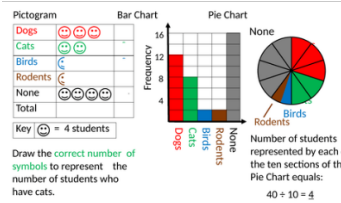
-Working with co-ordinates

-Graphing linear functions in one variable

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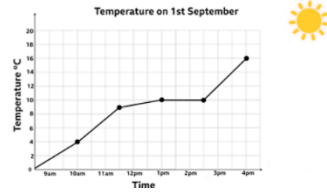
Stage 8

Interpreting and presenting data



- Reading or showing simple data in tables, pictograms and bar charts
- Solving problems involving simple data in tables, pictograms and bar charts

Using information from graphs, tables and timetables



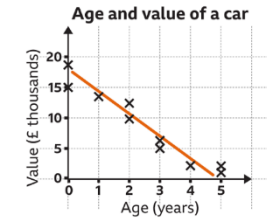
- Solving problems with data given from line graphs
- Working with information in tables (including timetables)

Representing and interpreting data

Age of Customer	Frequency
$0 \leq a < 10$	3
$10 \leq a < 20$	6
$20 \leq a < 30$	7
$30 \leq a < 40$	2
$40 \leq a < 50$	10
$50 \leq a < 60$	15
$60 \leq a < 70$	8
$70 \leq a < 80$	0
$80 \leq a < 90$	2
$90 \leq a < 100$	2

- Constructing and interpreting tables and charts for grouped and ungrouped data

Using averages, range, and relationships to describe data

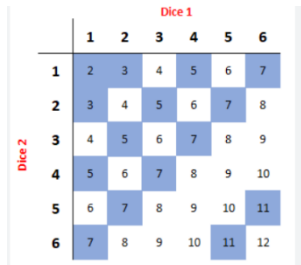


- Understanding measures of central tendency and spread
- Using scatter graphs

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Stage 8

Sample spaces to calculate theoretical probabilities



- Using sample spaces for single and combined events (equally likely, mutually exclusive outcomes)

Linear equations

$$ax + b = 0$$

↑ Coefficient
↓ Variable
↓ Constant

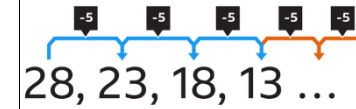
- Solving linear equations in one variable (unknowns on one side)

Linear equations with unknowns on both sides

$$2x + 5 = x + 8$$

- Solving linear equations in one variable (unknown on both sides)

Sequences and relationships



- Finding the nth term of an arithmetic sequence

- Interpreting linear relationships algebraically and graphically

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Stage 8

Powers, roots and rounding

$$4^3 = 4 \times 4 \times 4$$

- Using powers and roots
- Rounding to and appropriate degree of accuracy (including significant figures)

Fractions, decimals and percentages

Fraction	Decimal	Percentage
		10%
$\frac{4}{5}$		
	0.17	
$\frac{3}{20}$		

- Working with equivalences between simple fractions, decimals and percentages
- Calculating decimal fraction equivalents for a simple fraction by considering fractions as divisions
- Multiplying simple pairs of proper fractions
- Divide proper fractions by whole numbers

Percentages



- Considering fractions and percentages as operators
- Working with percentages and percentage change using fractions or decimals

Standard form and the number system

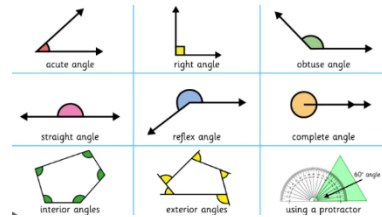
$$2 \times 10^{-1} - 9 \times 10^{-3}$$

- Comparing numbers in standard form
- Understanding the nature of the sets of integers, real and rational numbers

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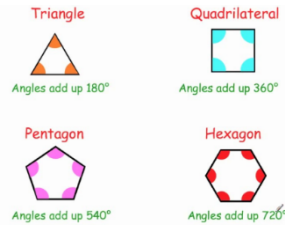
Stage 8

Angles, shapes and solids



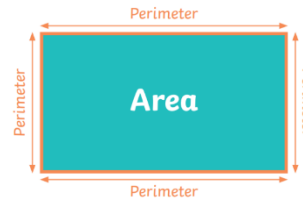
- Working with angles at a point, on a straight line or vertically opposite
- Working with properties of polygons
- Knowing the correct terminology for circles parts
- Representing and building 3d shapes
-

Angles and polygons



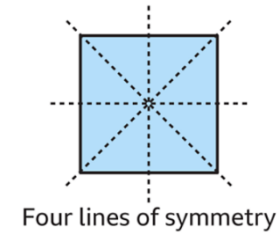
- Deriving angle sum of triangle and regular polygons

Accuracy with perimeter, area and volume



- Calculating with approximations and finding the possible range of errors
- Solving problems involving circumference and area of circles and shapes that include circular parts
- Deriving and using formula to find surface area and volume of prisms and cylinders

Symmetries and constructions



- Drawing polygons
- Working with standard ruler and compass constructions

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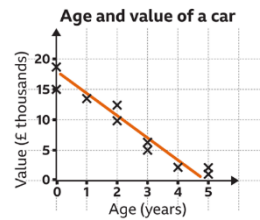
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