



Topic: Ratio and Scale (Chapter 1 and 2)

Prior learning:

Pie charts
Fractions and fractions of an amount

Perimeter
Algebraic notation
HCF

Learning sequences				Endpoints
	Acquiring	On track	Extending	
Main Learning Steps	<ul style="list-style-type: none"> ■ Understand how a ratio can be used to compare quantities ■ Write values in a ratio ■ Find equivalent ratios 	<ul style="list-style-type: none"> ■ Simplify ratios including decimals ■ Be able to share a ratio when given a value of the shared ratio 	<ul style="list-style-type: none"> ■ Complete complex ratio problem solving question ■ Use ratios to find the circumference of circles ■ find the gradient of a line linking to ratios 	<ul style="list-style-type: none"> ■ To represent ratios in a variety of forms ■ To simplify to unitary ratios ■ To find equivalent and be able to fully simplify fractions ■ To share into a ratio ■ To solve ratio problems ■ To complete direct proportion problems ■ How to apply ratios to other areas of mathematics including circles, gradient and similar shapes (H)
	<ul style="list-style-type: none"> ■ Write ratios in the for 1 : n and n : 1 ■ Fully simplify ratios ■ Divide quantities into a ratio of two or more parts 	<ul style="list-style-type: none"> ■ Complete more complex best buy and recipe questions using ideas of direct proportion. ■ Find missing lengths of similar shapes 	<ul style="list-style-type: none"> ■ Use knowledge of ratio and direct proportion for more complex similar shapes questions 	
Assessments	<ul style="list-style-type: none"> • Check of understanding in class and homework • End of unit test 			

<p>Where will we use these ideas again: Calculators should be used throughout this unit, building on teaching efficient use of calculators and informal estimation Graphs (WRM 4)</p>	<p>Simplifying (WRM10) Number Sense (WRM 12)</p>
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Topic: Fractions and Decimals (Chapter 3)

Prior learning:

Pie charts
Fractions and fractions of an amount

Equivalent and Simplifying

Learning sequences				Endpoints
	Acquiring	On track	Extending	
Main Learning Steps	<ul style="list-style-type: none"> Understand a fraction is part of a 'whole' and how to shade fractions Find equivalent fractions add and subtract fractions with same denominator 	<ul style="list-style-type: none"> Add and subtract fractions change both denominators Divide fractions Convert mixed to improper fractions + and - with decimals 	<ul style="list-style-type: none"> Complete all fraction calculations with mixed Worded fractions questions including fractions and other topics e.g. areas Complete division with decimals Calculations with fractions, decimals and percentages 	<ul style="list-style-type: none"> To be able to find equivalent fractions To simplify fractions To be able to add and subtract vulgar and improper fractions To multiply vulgar and improper fractions To divide vulgar and improper fractions To be able to convert mixed and improper fraction To complete calculations with mixed fractions (H) To complete calculations with decimals
	Working towards	Advancing		
	<ul style="list-style-type: none"> Be able to simplify fractions including more complex/potential multi-step Multiply fractions add and subtract fractions change one denominator 	<ul style="list-style-type: none"> All fraction calculations with integers and fractions Convert improper to mixed fractions Multiplication with decimals 		
Assessments	<ul style="list-style-type: none"> Check of understanding in class and homework End of unit test 			

<p>Where will we use these ideas again: Fractions and Percentages (WRM 10)</p>	<p>Number Sense (WRM 12) Within numeracy and within GCSE fractions and decimal calculations</p>
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Topic: Cartesian Plane (Chapter 4)

Prior learning:

Directed number
Coordinates in four quadrants

Substitution
Order of operations
Sequences

Algebraic notation
Gradients
Mean and median

Learning sequences				Endpoints
	Acquiring	On track	Extending	
Main learning steps	<ul style="list-style-type: none"> ■ Working with coordinates in all four quadrants ■ Substitution into a formula 	<ul style="list-style-type: none"> ■ Draw and recognize lines in the form $y = mx$ ■ Draw and recognize lines in the form $y = x + c$ ■ Recognize lines with a negative gradient 	<ul style="list-style-type: none"> ■ Identify the equation of a line ■ Sketch a graph from the equation of a line ■ Comparing gradients and y-intercepts to match the sketch of a line to its equation. 	<ul style="list-style-type: none"> ■ To be able to plot coordinates ■ To draw and recognize horizontal and vertical lines ■ To draw and recognize lines of the form of $y = mx$ ■ To draw and recognize lines of the form of $y = x + c$ ■ To draw and recognize lines of a negative gradient ■ To draw and recognize lines of the form $y = mx + c$ ■ To draw and recognize non-linear graphs (H) ■ To be able to find mid-points
		<p style="text-align: center;">Working towards</p> <ul style="list-style-type: none"> ■ Complete a table to find coordinates that lie on a line ■ Draw and recognize horizontal and vertical lines 	<p style="text-align: center;">Advancing</p> <ul style="list-style-type: none"> ■ Draw and recognize lines in the form $y = mx + c$ ■ Explaining the relationship between the x and y values on a line. ■ Identify if a coordinate is on a line 	
Assessments	<ul style="list-style-type: none"> • Check of understanding in class and homework • End of unit test 			

<p>Where will we use these ideas again: Drawing quadratics (GCSE) Direct and inverse proportion (WRM2)</p>	
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Topic: Data and Averages (Chapter 5, 16 and 17)

Prior learning:

Working with coordinates
Number lines

Estimation
Tally charts
4 operations

Pie charts
Fractions, percentages, and decimals

Learning sequences				Endpoints
	Acquiring	On track	Extending	
Main learning steps	<ul style="list-style-type: none"> ■ Identifying different types of data. ■ Draw and read basic, compound and comparative bar charts given the scale ■ Interpret pictograms 	<ul style="list-style-type: none"> ■ Find the mode, mean, median and range from data, including decimals ■ Where possible find the mode and range from bar charts 	<ul style="list-style-type: none"> ■ Find the mode, mean and range from grouped data ■ Use graphs to make estimations and predictions. 	<ul style="list-style-type: none"> ■ To read and draw all types of bar charts and line graphs ■ To draw and interpret pie charts and pictograms ■ To find the mode, median, mean and range from data ■ To find the MMMR, where possible, from a bar chart and frequency table for non-grouped data ■ To find the mode, mean and range for grouped data (H) ■ To draw scatter graphs and use a line of best fit to extrapolate date (H)
	<p style="text-align: center;">Working towards</p> <ul style="list-style-type: none"> ■ Draw graphs without scale given ■ Draw and interpret pie charts ■ Draw pictograms given some data 	<p style="text-align: center;">Advancing</p> <ul style="list-style-type: none"> ■ Draw and interpret scatter graphs using a line of best fit. ■ Find the MMMR from charts and non-grouped data 		
Assessments	<ul style="list-style-type: none"> • Check of understanding in class and homework 			

Where will we use these ideas again:

Data analysis
Units of measure



Topic: Data and Averages (Chapter 11)

Prior learning:

Place value
Decimal calculations

Index laws
Powers
Multiplying and dividing by powers of 10

Learning sequences			Endpoints	
	Acquiring	On track		Extending
Main learning steps	<ul style="list-style-type: none"> Confidently multiply and divide by 10, 100 and 1000 	<ul style="list-style-type: none"> Write decimal numbers in and out of standard form 	<ul style="list-style-type: none"> Addition and subtraction with numbers in standard form Multiplication and division with numbers in standard form 	<ul style="list-style-type: none"> To write large numbers into and out of standard form To write decimal numbers into and out of standard form Calculations with standard form
		Working towards		
	<ul style="list-style-type: none"> Write large numbers in and out of standard form 	<ul style="list-style-type: none"> Complete multiplication and division with indices 		
Assessments	<ul style="list-style-type: none"> Check of understanding in class and homework 			

Where will we use these ideas again:

Index laws
Multiplication and division