

Year 10 Autumn T1 - Topic: Percentages and Ratio

Prior learning:

Be able to add, subtract, multiply and divide with integers

Recognising factors and common factors

Understand and apply powers

Find a fraction and percentage of an amount

Learning sequences							Endpoints
Main learning Steps	Grade 2	MW	Grade 3	MW	Grade 5	MW	
	<ul style="list-style-type: none">• Represent ratios• Simplify ratios• Solve recipe problems involving ratio	38	<ul style="list-style-type: none">• Express one quantity as a percentage of another using a calculator	88	<ul style="list-style-type: none">• Work out compound interest and depreciation	164	<ul style="list-style-type: none">• Use fractions and percentages to describe a proportion• Divide a quantity in a given ratio and reduce a ratio to its simplest form.• Solve problems involving percentage change.• Calculate percentage increases and decreases using multiplication.• Find the original value of a quantity that has undergone a percentage increase or decrease (H)
		38	<ul style="list-style-type: none">• Express one quantity as a percentage of another using non-calculator methods	89	<ul style="list-style-type: none">• Understand how to use successive percentages in other situations		
		39	<ul style="list-style-type: none">• Increase or decrease a quantity by a given percentage	108	<ul style="list-style-type: none">• Convert a ratio into an equation	106/165c	
			<ul style="list-style-type: none">• Calculate simple interest & depreciation	111	Grade 7+		
			<ul style="list-style-type: none">• Calculate a percentage increase or decrease using a multiplier	108			
			<ul style="list-style-type: none">• Work out reverse percentage problems	110	<ul style="list-style-type: none">• Harder ratio and equations• Harder worded questions with ratios	200bc 200a	
			<ul style="list-style-type: none">• Work out the percentage change	109			
			<ul style="list-style-type: none">• Share a quantity into a given ratio	106			
			<ul style="list-style-type: none">• Calculate parts of a ratio given one quantity	106			
			<ul style="list-style-type: none">• Write a fraction or percentage from a given ratio and vice versa	38			
			<ul style="list-style-type: none">• Recognise the relationships derived from equivalent ratios	107			
Assessments		<ul style="list-style-type: none">○ End of Block Test○ In class exit tickets and Homework○ Mid and End of year tests					

Where will we use these ideas again:

This topic will be revisited again throughout the course as fractions, ratio and percentages will be incorporated into all other topics such as probability, solving equations, areas and volumes.

Higher: Fractions, ratio and percentages will be incorporated into all other topics such as probability, solving equations, areas and volumes.

Year 10 Autumn T1 – Topic: Simultaneous Equations and Graphs

Prior learning:

- Use coordinates in all four quadrants, such as plot the points (3,-2), (-2,1) and (-4,-3)
 - Perform addition, subtraction, multiplication and division calculations involving negatives
 - Solve two step equations such as $3x - 1 = 9$ and $3(x+4) = 15$
 - Rearrange linear formulae such as $p = 3q + 5$
 - Substitute positive and negative numbers into a formula such as $P = 2l + 2w$
- Find the HCF of two numbers using appropriate methods

Learning sequences							Endpoints
Main learning Steps	Grade 3	MW	Grade 4	MW	Grade 8	MW	
	<ul style="list-style-type: none"> Plot the graphs of horizontal lines such as $y=4$ and vertical lines such as $x=3$ Draw the graph for equations such as $y = 2x + 3$ and recognise these are linear Solve problems involving graphs, such as finding where the line $y = x + 2$ crosses the line $y = 1$ Draw graphs of quadratic functions such as $y = 3x^2$ and $y = x^2 + 4$ using a table of values Use graphs to find the approximate solutions of quadratic equations Sketch a simple quadratic function such as $y = x^2 + 4$ 	96	<ul style="list-style-type: none"> Solve simultaneous equations graphically 	140	<ul style="list-style-type: none"> Solve a pair of simultaneous equations where one is linear and one is quadratic, algebraically 	211	<ul style="list-style-type: none"> Solve two linear simultaneous equations Find approximate solutions to two linear simultaneous equations using a graph Plot linear graphs Plot quadratic graphs and identify turning points and roots Solving non-linear simultaneous equations (H)
		96	Grade 5				
		96	<ul style="list-style-type: none"> Solve a pair of simultaneous linear equations algebraically 	162			
		98	<ul style="list-style-type: none"> Set up and solve (algebraically) two linear simultaneous equations in two variables, interpreting the solution in context 	162			
		98	<ul style="list-style-type: none"> Identify the turning points of a quadratic graph 	160			
		99	<ul style="list-style-type: none"> Identify the roots and intercepts from a quadratic graph Using symmetry, identify the turning points of a quadratic graph 	160			
Assessments		<ul style="list-style-type: none"> End of Block Test In class exit tickets and Homework Mid and End of year tests 					

Year 10 Autumn T2 – Topic: Circles

Prior learning:

- Find the perimeter of a shape on squared paper or with all sides given
- Work out the perimeter of a rectangle
- Know and use the formula for the area of a rectangle
- Substitute positive and negative numbers into a formula such as $P = 2l + 2w$
- Substitute numbers into more complicated formulae such as $C = (A+1)D/9$
- Find fraction of an amount
- Rearrange formulae that include brackets, fractions and square roots
- Round decimals to the nearest decimal place
- Round numbers to a given number of significant figures

Learning sequences							Endpoints
Main learning Steps	Grade 3	MW	Grade 4	MW	Grade 5	MW	
	• Know the definition of a circle and identify the, centre, radius, diameter and circumference	116	• Recognise complex parts of circle such as tangents, arcs, sectors, chords and segments	149	• Find the lengths of arcs and perimeters of sectors of a circle	167	• Identify and apply circle definitions and properties • Find the area and circumference of a circle and composite shapes involving circles • Calculate arc lengths, angles and areas of sectors (H)
	• Calculate the circumference of a circle to an appropriate degree of accuracy	118			• Find the area of a sector of a circle • Compound shapes with areas – perimeter and area • Find the area of segments of circles	167	
	• Find the perimeter of a semicircle and quarter circle	118					
	• Calculate the area of a circle to an appropriate degree of accuracy	117					
	• Find the area of a semicircle or quarter circle						
	• Know the definition of a circle and identify the, centre, radius, diameter and circumference	116					
Assessments		○ End of Block Test ○ In class exit tickets and Homework ○ Mid and End of year tests					

Where will we use these ideas again:

All if of these objectives will be revisited when studying 3D shapes – surface areas and volumes

Higher:

Students will revisit properties of circles when learning about circle theorems and equations of circles

Year 10 Autumn T2 – Topic: Handling Data 1

Prior learning:

- Use probabilities given to calculate expected values (capture/recapture)
- Use stratified sampling methods
- Product rule for counting

Learning sequences							Endpoints
Main learning Steps	Grade 1-2	MW	Grade 3	MW	Grade 4	MW	<ul style="list-style-type: none"> ▪ Construct and interpret frequency tables and two-way tables ▪ Construct and interpret pictograms, bar-line charts and bar charts ▪ Interpret and construct pie charts and know their appropriate use. ▪ Compare distributions using median, mean, mode and range and identify outliers. ▪ Calculate the inter-quartile range of a data set and use this to compare data sets. (H) ▪ Interpret and construct tables, graphs and charts for discrete, continuous and grouped data. ▪ Use median, mean, modal class and range to interpret and compare distributions. ▪ Use correlation to describe scatter graphs but know that it does not imply causation. ▪ Draw estimated lines of best fit and make predictions but understand their limitations. ▪ Interpret and construct line graphs for time series data.
	<ul style="list-style-type: none"> • Design and use tally charts • Construct and interpret a pictogram • Construct and interpret a bar chart • Group data in equal class intervals • Extract and interpret information presented in simple tables • Find the mode for a set of numbers • Write down the mode from a graph • Find the median for an odd set of numbers • Find the median for an even set of numbers • Calculate the mean for a set of numbers • Solve complex mean problems • Work out the range for a set of numbers • Find the Interquartile range of a set of numbers • Compare the averages and range of two sets of data • Find the total from a frequency table • Design and use a frequency diagram (bar chart for grouped data) • Construct and interpret a composite or dual bar chart • Construct and interpret a vertical line chart • Complete and use two-way tables for discrete and grouped data • Design two-way tables to solve multi-step problems • Construct and interpret a stem-and-leaf diagram 	15 16 15 65 62 62 62 62 62 62 62 62 62 65 64 61 61 128b	<ul style="list-style-type: none"> • Find the modal value from a discrete frequency table • Find the modal class for grouped data • Find the median and quartiles from a discrete or grouped frequency table • Find the mean from a frequency table • Find an estimate of the mean for grouped data • How to construct and interpret step graphs. • Construct a pie chart • Interpret a pie chart • Draw a scatter graph by plotting points on a graph • Identify the type and strength of correlations • Draw a line of best fit on the scatter graph • Interpret scatter graphs (excluding correlation) 	130a 130a 130a 130a 130b 128 128 129 129 129 129	<ul style="list-style-type: none"> • Complete a time series graph • Interpret a time series graph using trend lines • Recognising when and why graphs can be misleading. 	153 153 65b	
					Grade 6	MW	
					<ul style="list-style-type: none"> • Construct a frequency polygon 		
Assessments		<ul style="list-style-type: none"> ○ End of Block Test ○ In class exit tickets and Homework ○ Mid and End of year tests 					

Year 10 Autumn T2 – Topic: Probability

Prior learning:

- Know and use correct algebraic conventions (e.g. $4 \times x = 4x$, $m/2$)
- Understand and use the vocabulary of probability
- Understand and use a probability scale
- Add decimals
- Subtract decimals
- Add and subtract vulgar (non-mixed) fractions with the same denominator
- Add and subtract vulgar (non-mixed) fractions with different denominators
- Identify and find equivalent fractions
- Represent fractions, decimals and Percentages on a number line

Learning sequences							Endpoints
Main learning Steps	Grade 2	MW	Grade 3	MW	Grade 7+	MW	<ul style="list-style-type: none"> ▪ Use experimental data to estimate probabilities and expected frequencies ▪ Use tables to represent the outcomes of probability experiments ▪ Calculate theoretical probabilities and expected frequencies using the idea of equally likely events. ▪ Recognise mutually exclusive events and exhaustive events and know that the probabilities of mutually exclusive exhaustive events sum to 1. ▪ Compare theoretical probabilities with experimental probabilities. ▪ Introduction to tree diagrams
	• Express a probability as a fraction, decimal or percentage	59	• Write all the combinations from a list	69	• Find probabilities of successive independent events without a tree diagram	204	
	• Use the fact that the probabilities of mutually exclusive outcomes add up to 1 and complete a probability table	60	• Identify permutations from a list	69	• Find the probability of a combination of mutually exclusive events from a tree diagram (the OR rule)	204	
	• Use the fact that the probabilities of mutually exclusive outcomes add up to calculate other probabilities (the OR rule)	60	• Draw a sample space	126	• Form and solve equations from probability tables, frequency trees		
	• Solve equations from probability problems		• Understand and use relative frequency / experimental probability	125	• More complex problems with frequency trees and two way tables		
	• List outcomes systematically	58	Grade 4				
	• Use a sample space or a list to find probability of two events happening	59	• Complete a probability tree diagram involving independent events	151			
	• Use a two-way table to find a probability	61					
	• Design and use frequency trees	57					
Assessments		<ul style="list-style-type: none"> ○ End of Block Test ○ In class exit tickets and Homework ○ Mid and End of year tests 					

Year 10 Spring T1 – Topic: Linear Sequences & Graphs

Prior learning:

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> Understand the terms 'perpendicular lines' and 'parallel lines' Use coordinates in the first quadrant, such as plot the point (3,2) Use coordinates in all four quadrants, such as plot the points (3,-2), (-2,1) and (-4,-3) | <ul style="list-style-type: none"> Add, subtract, multiply and divide integers Find multiples of a number Substitute positive and negative numbers into a formula such as $P = 2l + 2w$ Recognise and describe arithmetic and geometric sequences | <ul style="list-style-type: none"> Generate a sequence of numbers or diagrams from a term-to-term rule Write the term-to-term rule of a simple sequence |
|---|--|---|

Learning sequences							Endpoints
Main learning Steps	Grade 3	MW	Grade 4- 5	MW	Grade 8	MW	
	<ul style="list-style-type: none"> Find coordinates of points determined by geometrical information Understand the equation of a straight line, interpreting the gradient and intercept Using ratio to find the gradient base:height Find the gradient of a straight-line graph Find the gradient of a line given two coordinates Find the nth term of a sequence or a series of diagrams Generate a sequence of a series of diagrams given the nth term Find a particular term in a sequence Justify whether a number is a term of a sequence 	113	<ul style="list-style-type: none"> Find midpoints of two coordinates (2D and 3D) Sketch a linear function from its equation Find the equation of a straight line from a graph Find the equation of a straight line given two coordinates Find the equation of a straight line given a parallel line and a point Interpret a straight line graph in a real life context Interpret the gradient of a graph in the context of a question Interpret the intercept of a graph in the context of a question Draw and interpret distance-time graphs Work out an average speed from a distance-time graph 	133	<ul style="list-style-type: none"> Introduce $f(x)$ notation Find the gradients of perpendicular straight-line graphs Prove two lines are parallel or perpendicular Find the equation of a straight line given a perpendicular line and a point 	208	<ul style="list-style-type: none"> Find terms of a linear sequence using term-to-term or position-to-term rule. Work with coordinates in all four quadrants Identify gradients and intercepts of straight line graphically and algebraically Use the form $y=mx+c$ to identify parallel lines Use the form $y=mx+c$ to identify perpendicular lines (H) Find the equation of a straight line give coordinates Identify the gradient of a straight line graph as a rate of change. Use graphs to solve problems involving distance, speed and acceleration.
		3		159a		208	
				159b			
		3		159b			
		3					
		103					
		102					
		103		143			
				143			
Assessments	<ul style="list-style-type: none"> End of Block Test In class exit tickets and Homework Mid and End of year tests 						

Year 10 Spring T2 – Topic: Trigonometry

Prior learning:

- Rearrange linear formulae such as $p = 3q + 5$
- Substitute positive and negative numbers into a formula such as $P = 2l + 2w$
- Convert between fractions, decimals and percentages
- Represent ratios
- Use the fact that the angles of a triangle add up to 180° to find angles
- Use Pythagoras' theorem to find missing sides
- Solve one step equations such as $3x = 12$ or $x + 5 = 9$
- Solve two step equations such as $3x - 1 = 9$ and $3(x+4) = 15$ Understand the terms

Learning sequences				Endpoints
Main learning Steps	Grade 5	MW	Grade 7+	MW
	<ul style="list-style-type: none"> Label the vertices and sides of a triangle Understand that sine, cosine and tangent are ratios Know the exact trigonometric values for (30°, 45°, 60°, 90°) Use trigonometry to find missing side lengths in right angled triangles Use trigonometry to find missing angles in right angled triangles Use trigonometry to calculate angles of elevation 		<ul style="list-style-type: none"> 3D Trigonometry Pythagoras and Trigonometry 	218
		173		
		168		
		168		
Assessments		<ul style="list-style-type: none"> End of Block Test In class exit tickets and Homework Mid and End of year tests 		

Where will we use these ideas again:

This is often linked to areas and perimeters of shapes

Higher:

Will be revisiting trigonometry when looking at cosine and sine rules. These topics will also be linked to bearings, linear and circle graphs, circle theorems

Year 10 Spring T2 – Topic: Transformations

Prior learning:

Be able to add, subtract, multiply and divide with negative integers

Learning sequences							Endpoints
Main learning Steps	Grade 1	MW	Grade 2	MW	Grade 4	MW	<ul style="list-style-type: none"> Describe and transform shapes using reflections, rotations, translations, and enlargements Enlargements with fractional and negative scale factors (H) Identify what changes and what is invariant under a combination of transformations. (H)
	<ul style="list-style-type: none"> Recognise when a shape is symmetrical 	11	<ul style="list-style-type: none"> Reflect shapes in the axes of a graph 	48	<ul style="list-style-type: none"> Draw the enlargement of a shape by a positive scale factor 	144	
	<ul style="list-style-type: none"> Draw all the lines of symmetry on a 2-D shape 	11	<ul style="list-style-type: none"> Reflect shapes in the lines parallel to the axes such as $x=2$ and $y=-1$ 	48	<ul style="list-style-type: none"> Find the scale factor of an enlarged shape 	144	
	<ul style="list-style-type: none"> Draw the reflection of a shape in a mirror line 	11	<ul style="list-style-type: none"> Reflect shapes in lines such as $y=x$ and $y=-x$ 	48	<ul style="list-style-type: none"> Enlarge a shape by a positive scale factor from a given centre 	148	
	<ul style="list-style-type: none"> Identify reflection symmetry in 3-D solids 	11	<ul style="list-style-type: none"> Describe fully reflections in a horizontal or vertical line 	48	<ul style="list-style-type: none"> Enlarge a shape by a fractional scale factor from a given centre 	148	
	<ul style="list-style-type: none"> Draw the plane of symmetry in a 3-D solid 	11	<ul style="list-style-type: none"> Describe fully reflections in diagonal lines 	48	<ul style="list-style-type: none"> Find the centre of enlargement given a shape and its image 	148	
	<ul style="list-style-type: none"> Give the order of rotational symmetry of a 2-D shape 	11	<ul style="list-style-type: none"> Rotate shapes by 90° and 180° 	48	<ul style="list-style-type: none"> Describe fully an enlargement from a given point 	148	
	<ul style="list-style-type: none"> Complete a shape so that it is rotationally symmetrical 	11	<ul style="list-style-type: none"> Rotate shapes about the origin Rotate shapes about any point Describe fully rotations about any point 	49 49 49			
	Grade 2	MW	Grade 3	MW	Grade 6	MW	
	<ul style="list-style-type: none"> Translate a shape using a description such as 4 units right and 3 units down 		<ul style="list-style-type: none"> Describe a single transformation using correct mathematical language 		<ul style="list-style-type: none"> Enlarge a shape by a negative scale factor from a given centre 	181	
Assessments	<ul style="list-style-type: none"> Translate a shape by a vector 	50			<ul style="list-style-type: none"> Draw a sequence of transformations Describe a series of transformations as one single transformation 	182 182	
	<ul style="list-style-type: none"> Describe a translation by a vector 	50			Grade 7	MW	
					<ul style="list-style-type: none"> Describe points which are invariant 		

Where will we use these ideas again:

Introducing vector notation in translation will lead to the unit on vectors
Then concept of enlargement and scale factors links to previous topics of scales and to future topics of similar shapes

Higher: the understanding of transformations will be revisited when transforming graphs

Year 10 Summer T1 – Units and Proportionality

Prior learning:

- Solve questions involving best value for money
- Solve simple direct proportion (e.g. given the cost of 5 items, find the cost of 3)
- Be familiar with the unitary method
- Understand and use compound measures (SDT, DMV, FPA etc) in simple questions
- Understand and use compound measures (SDT, DMV, FPA) in more complex questions involving more than one part
- Know the conversions for metric units and money
- Decide which metric to use for everyday measurements

Learning sequences							Endpoints
Main learning Steps	Grade 3	MW	Grades 4 & 5	MW	Grade 7+	MW	<ul style="list-style-type: none"> • Solve direct and inverse proportion problems. • Describe direct and inverse proportion relationships using an equation. • Recognise graphs showing direct and inverse proportion
	<ul style="list-style-type: none"> • Solve proportion problems involving exchanging money • Draw and/or use conversion graphs, including for temperature and currency conversion • Convert between imperial and metric units such as cm to inches, kg to lbs, litres to pints given the conversions 	105	<ul style="list-style-type: none"> • Convert between different units of compound measures • Solve indirect proportion questions involving work rate (e.g. how many man-hours) • Recognise graphs showing direct and inverse proportion 	199	<ul style="list-style-type: none"> • Understand and solve simple problems involving direct proportion ($y \propto x$) • Understand and solve simple problems involving indirect proportion ($y \propto 1/x$) • Recognise the graphs showing direct and inverse proportion • Understand and solve more complex problems involving direct and indirect proportion ($y \propto x^2$) 	199	
		107				199	
						199	
Assessments		<ul style="list-style-type: none"> ○ End of Block Test ○ In class exit tickets and Homework ○ Mid and End of year tests 					

Year 10 Summer T1 – Working in 3D

Prior learning:

- Know and use the formula for the area of a rectangle
- Know and use the formula for the area of a triangle
- Know and use the formula for the area of a parallelogram
- Know and use the formula for the area of a trapezium
- Find the area of compound shapes
- Calculate the circumference of a circle to an appropriate degree of accuracy
- Find the perimeter of a semicircle and quarter circle
- Calculate the area of a circle to an appropriate degree of accuracy
- Find the area of a semicircle or quarter circle

Learning sequences							Endpoints
Main learning Steps	Grade 1 & 2	MW	Grade 3	MW	Grade 5	MW	
	<ul style="list-style-type: none">• Draw a cuboid on an isometric grid and mark its dimensions• Draw 3-D shapes on isometric paper• Name and state properties of 3D shapes, such as vertices, edges and faces• Identify basic 3-D solids• Sketch 3-D solids• Find the volume of a solid by counting cubes and stating units• Recognise nets of familiar 3-D shapes, e.g. Cube, cuboid, triangular prism, square based pyramid• Draw the net of a cuboid• Draw and interpret plans and elevations of 3-D solids• Construct and recognise the nets of 3-D solids such as pyramids and triangular prisms• Draw a 3-D solid given its plan and elevations	43	<ul style="list-style-type: none">• Find the volume of a cube/cuboid• Find the height of a cuboid, given volume, length and breadth• Calculate volumes of prisms• Convert between square and cubic metric units (mm2 to m2 or cm³ to litres)• Calculate volumes of cylinders• Solve boxing problems involving volume calculations• Calculate the surface area of a cuboid• Calculate the surface areas of cylinders• Calculate the surface areas of a triangular prism	115 115 119 112	<ul style="list-style-type: none">• Calculate the surface area of more complex prisms• Find the surface area of spheres• Find the surface area of cones• Find the surface area of a pyramid• Find the volumes of spheres• Find the volume of a pyramid• Find the volume of cones• Solve algebraic problems involving the surface area/volume of complex shapes• Find the volume of a frustum	169 171 169 170 171	<ul style="list-style-type: none">▪ Identify the number of faces, edges and vertices of 3D shapes▪ Construct and interpret plans and elevations of 3D shapes.▪ Calculate the volume of cuboids, cylinders and other prisms.▪ Apply the formulae for volume and surface area of spheres, pyramids, cones and composite solids.▪ Know and apply the relationship between lengths, areas and volumes of similar shapes (H)
		43		112			
		44		114a			
		44 51		114b			
Assessments		<ul style="list-style-type: none">○ End of Block Test○ In class exit tickets and Homework○ Mid and End of year tests					

Year 10 Summer T1 (Higher only) – Circle Theorems

Prior learning:

- Draw diagrams from written descriptions
- Estimate angles and measure them accurately
- Draw angles accurately
- Construct a circle using a pair of compasses, given a centre and a point on the circumference
- Understand the term equidistant
- Understand and use the perpendicular distance from a point to a line as the shortest distance to the line
- Know the definition of a circle and identify the, centre, radius, diameter and circumference
- Recognise complex parts of circle such as tangents, arcs, sectors, chords and segments
- Use the fact that the angles of a triangle add up to 180° to find angles
- Use angles in a quadrilateral add up to 360

Learning sequences					Endpoints
Main learning Steps	Grade 6	MW	Grade 7+	MW	<ul style="list-style-type: none"> Prove and apply circle theorems (H)
	<ul style="list-style-type: none"> Use and apply the six circle theorems Prove that the angle at the centre is twice the angle at the circumference Prove that angles in semi-circle are equal to 90° Prove the same segment theorem Prove the alternate segment theorem Recognising the similar triangles formed when two chords intersect 	183 184 184 184 184	<ul style="list-style-type: none"> Use the intersecting chords theorem to find length Secant Theorem Opposite angles of a cyclic quadrilateral add to 180° Pythagoras' Theorem with circle theorems 	183	
Assessments		<ul style="list-style-type: none"> End of Block Test In class exit tickets and Homework Mid and End of year tests 			

Where will we use these ideas again:

Circle theorems are often included in questions involving circle graphs

Year 10 Summer T1 (Foundation) – Angles Review, Construction, Congruence, Similarity and Loci

Prior learning:

- Understand the word congruent and identify congruent shapes
- Draw diagrams from written descriptions
- Measure a line accurately to the nearest millimetre
- Construct simple shapes on squared paper
- Estimate angles and measure them accurately
- Draw angles accurately
- Construct a circle using a pair of compasses, given a centre and a point on the circumference
- Understand the term equidistant
- Understand and use the perpendicular distance from a point to a line as the shortest distance to the line

Learning sequences					Endpoints
Main learning Steps	Grade 2	MW	Grade 4	MW	<ul style="list-style-type: none">• Measure line segments and angles accurately• Describe and apply the properties of angles at a point, on a line and at intersecting and parallel lines.• Derive and use the sum of angles in a triangle• Derive and apply the properties and definitions of special types of triangles and quadrilaterals• Identify and use congruence and similarity• Deduce and use the angle sum in any polygon• Calculate interior and exterior angles for regular polygons• Construct triangles• Use the standard ruler and compass constructions• Solve loci problems
	<ul style="list-style-type: none">• Draw an SAS triangle with ruler and protractor• Draw an ASA triangle with ruler and protractor	<div>47</div> <div>47</div>	<ul style="list-style-type: none">• Find the lengths in similar shapes• Understand the word “similar” and be able to identify similar shapes• Understand the word “congruent” and be able to identify congruent shapes• Understand and apply mathematical similarity• Draw an SSS triangle with ruler and compasses• Draw a quadrilateral such as a kite or a parallelogram with given measurements with ruler and protractor• Use angle facts to prove triangles are congruent in more complex questions (e.g. bow tie question)• Construct the perpendicular bisector of a line• Construct the angle bisector• Construct the perpendiculars to and from a point• Construct the angles of 60° and 90° with a ruler and compass	<div>144</div> <div>144</div> <div>144</div> <div>147</div> <div>166</div> <div>146a</div> <div>145</div> <div>146b</div> <div>145</div>	
	Review Topics	MW			
	<ul style="list-style-type: none">• Recognise corresponding, alternate and co-interior angles• Recognise vertically opposite angles and know that they are equal• Understand why some shapes tessellate and others do not• Use the fact that the angles of a triangle add up to 180° to find angles• Use angle properties of isosceles, equilateral and right-angled triangles• Calculate interior and exterior angles of a quadrilateral• Calculate the sum of angles in any polygon• Calculate exterior and interior angles of a regular polygon• Prove that the angles of a triangle add up to 180° and use this to find angles• Prove the exterior angle of a triangle is equal to the sum of the two interior angle• Prove that the angles in a quadrilateral add up to 360°	<div>120</div> <div>12a</div> <div>122</div> <div>122</div> <div>123</div> <div>123</div> <div>121</div> <div>123</div> <div>123</div>			
			Grade 5	MW	
			<ul style="list-style-type: none">• Given two triangles are congruent, state the reason (SAS, ASA, SSS, RHS)• Prove that two triangles are congruent	<div>166</div> <div>166</div>	
Assessments		<ul style="list-style-type: none">○ End of Block Test○ In class exit tickets and Homework○ Mid and End of year tests			

Year 10 Summer T2 – Bearings and Scale Drawings

Prior learning:

- Estimate angles and measure them accurately
- Draw angles accurately
- Recognise corresponding, alternate and co-interior angles
- To be able to convert between metric units such as m to cm, kg to g, litres to ml
- Be familiar with the unitary method
- Calculate parts of a ratio given one quantity

Learning sequences							Endpoints
Main learning Steps	Grade 2	MW	Grade 3	MW	Grade 7+	MW	
	<ul style="list-style-type: none"> Estimate angles and measure them accurately Draw angles accurately Be familiar with the unitary method 	46a 46b 42	<ul style="list-style-type: none"> Recognise corresponding, alternate and co-interior angles To be able to convert between metric units such as m to cm, kg to g, litres to ml Calculate parts of a ratio given one quantity Know the three rules of bearings Find the bearing between two points Draw a point on a fixed bearing from another point Given a bearing, find the reverse bearing Use and interpret map scales Draw and interpret scaled diagrams in real-life contexts 	120 112 106 124 124 124 124 124	<ul style="list-style-type: none"> Bearings with Pythagoras and Trigonometry 		
Assessments <ul style="list-style-type: none"> ○ End of Block Test ○ In class exit tickets and Homework ○ Mid and End of year tests 							

Where will we use these ideas again:

Bearings will be revisited again with trigonometry and angles in parallel lines
Scale drawings as a concept is revisited within enlargement

Higher: In addition, bearings with sine rule and cosine rule

Year 11 2024-25 - Work in Progress

End points

Construct histograms (H)

Sequences

Prior learning:

- Understand the terms 'perpendicular lines' and 'parallel lines'
- Use coordinates in the first quadrant, such as plot the point (3,2)
- Use coordinates in all four quadrants, such as plot the points (3,-2), (-2,1) and (-4,-3)
- Add, subtract, multiply and divide integers
- Find multiples of a number
- Substitute positive and negative numbers into a formula such as $P = 2l + 2w$
- Recognise and describe arithmetic and geometric sequences
- Generate a sequence of numbers or diagrams from a term-to-term rule
- Write the term-to-term rule of a simple sequence

Learning sequences							Endpoints
Main learning Steps	Grade 2	MW	Grade 4- 5	MW	Grade 6	MW	
	<ul style="list-style-type: none"> • Recognise and describe arithmetic and geometric sequences • Generate a sequence of numbers or diagrams from a term-to-term rule • Write the term-to-term rule of a simple sequence 	37	<ul style="list-style-type: none"> • Recognise the Fibonacci sequence • Solve problems involving the Fibonacci sequence • Recognise a geometric progression and identify the common ratio • Generate a geometric progression given a and r • Write and use the formula for a geometric progression • Find a given term of a geometric progression 	141	<ul style="list-style-type: none"> • Generate a sequence using an iterative rule • Solve equations such as $x^3 + x = 12$ using trial and improvement • Generate a sequence using an iterative rule 	180	
		37		141		179	
		37		163		180	
				163			
	Grade 3	MW		163	Grade 7+	MW	<ul style="list-style-type: none"> • Find terms of a linear sequence using term-to-term or position-to-term rule. • Recognise special types of sequences and find terms using either term-to-term or position-to-term rule. • Find terms of a quadratic sequence using term-to-term or position-to-term rule. • Solve linear inequalities and represent the solution on a number line
	<ul style="list-style-type: none"> • Find the nth term of a sequence or a series of diagrams • Generate a sequence of a series of diagrams given the nth term • Find a particular term in a sequence • Justify whether a number is a term of a sequence 	103		163	<ul style="list-style-type: none"> • Find the nth term of quadratic sequences • Find the next term of a quadratic sequence • Understand the meaning of iteration and use iterative processes • Solve equations using an iteration formula 	213	
		102				213	
		103				180	
		104				180	

	<ul style="list-style-type: none"> Recognise special sequences such (e.g. $2n$, square numbers, cube numbers) 			<ul style="list-style-type: none"> Solve equations using the interval bisection method - iterations Show a solution lies in an interval using change of signs 	180	
Assessments <ul style="list-style-type: none"> End of Block Test In class exit tickets and Homework Mid and End of year tests 						