

Subject: Maths

Year group: 8

Age-related Criteria for KS3 reporting



### 3H: Fractions, Percentages & Ratios

Learning objectives	Sparx Topic Code	ARC
Understanding Fractions	M158	-
Comparing & Manipulating Fractions	M410, M335, M671, M939	-
Mixed & Improper Fractions	M601	=
Adding, Subtracting, Multiplying & Dividing Fractions	M835, M931, M157, M197, M110	=
Using Fractions to problem solve	M695, M684	+
Converting between fractions, decimals & percentages	M958, M264, M922, U689	=
Using percentages of amounts to solve problems with and without a calculator	M437, M905	=
To answer real life problems involving Percentages	U332, U533, U988	+
Comparing quantities with ratios	M885	=
Learn how to share in a given ratio	M525, M801	=
Learn what direct and inverse proportion is and how to use them to solve problems	M478, M681, U721	+
Learn how to calculate ingredients needed from a recipe using direct proportion	M478, U721	=
Learn how to solve more complex ratio problems	U753, U921, U577, U865	++

### 4H: Interpreting & Representing Data

Learning objectives	Sparx Topic Code	ARC
Types of data	U322	+
Data collection sheets (tally charts)	M597, M945	-
Grouped frequency tables	M945, U120	=
Averages	M841, M940, M934, M328	=
Averages from frequency tables	M127, M287	+
Two-way tables	M899	+
Bar charts	M460, M738	-
Pictograms	M644	-
Pie charts	M196, M574	=
Stem & Leaf Diagrams	M648, M210	=
Cumulative Frequency diagrams	-	+
Frequency Polygons	U840	=

Histograms	-	+
Time Series Charts	M140	+
Scatter Graphs	M769, M596	=

### 5H: Angles & Trigonometry

Learning objectives	Sparx Topic Code	ARC
Estimate the size of angles, using their appropriate name and labelling	M541, M502	-
Measure acute, obtuse and reflex angles using a protractor	M780, U477	=
Measure angles in shapes and draw angles using a protractor.	M331	=
Identify types of triangles	M276	-
Identify types of quadrilaterals	M276, M618	-
Identify lines of symmetry and rotational symmetry	M523	-
Find missing angles using properties of angles on a straight line	M818	=
Find missing angles around a point (using algebra)	M818	=
Learn how to find missing angles in triangles	M351	=
Using rules to find angles in parallel lines	M606	+
Apply angle rules to advanced scenarios	M319	+
Find missing angles in quadrilaterals	M679	=
Find interior and exterior angles in polygons	M653	=
Use Pythagoras' Theorem to find the side lengths of a right-angled triangle	M677	=
Prove Pythagoras' Theorem	M677	++
Apply Pythagoras' Theorem to problems	M677	+
Apply Pythagoras' Theorem to 3D shapes	M147	++
Using trigonometry to find missing sides and angles	U605, U283, U545	+
Applying trigonometry to multi-step problems	U545, U627	++
Evaluate trigonometric ratios	U627	+

### 6H: Graphs

Learning objectives	Sparx Topic Code	ARC
Identify and plot points on cartesian axes	M618, M797	-
Calculate the mid-point of a line segment	M622	=
Calculate the gradient of a line segment	M544, U315	=
Plot straight lines from coordinates and tables of values	M932	=
Identify the gradient and y-axis intercept from the equation of a line	M888	+
Draw straight lines given their equation in the form $y = mx + c$	M932	+
Identify the equation of a line in the form $y = mx + c$ from a graph	M932	+
Identify the equations of parallel and perpendicular lines in the form $y = mx + c$	U377, U898	+
Interpret and draw distance-time graphs	M581, M551	=
Calculate speed from distance-time graphs	M247	+
Complete distance-time graphs given information about speed, time and/or distance	M247	+
Interpret and draw speed-time graphs	M221	+
Calculate acceleration and distance travelled from speed-time graphs	U562	+
Interpret and draw real-life graphs	M771, M205	=
Identify sketch graphs involving rate of change	M843	+
Draw sketch graphs involving rate of change	U896	+
Plot graphs of quadratic equations from tables of values	U989	+
Identify key points on a quadratic graph from its equation	U667	+
Plot graphs of cubic equations from tables of values	U980	+
Recognise and sketch graphs of cubic equations	U980	+
Plot graphs of reciprocal functions from tables of values	U593	+
Recognise and sketch graphs of reciprocal functions	U593	+

KEY	
Developing	-
Meeting	=
Exceeding	+ and ++