

Curriculum Catch-up Statement

Mathematics

Years 7 and 8

Years 7 and 8 classes are taught one of four stages. Most Year 7 groups are taught Stage 7 and most of Year 8 groups are taught Stage 8.

For Years 7 and 8, we are teaching the usual stage for the group but for each unit, the starting point will be the corresponding unit from the previous stage. For example, a class being taught Stage 7 begin with the unit “Numbers and the Number System” and the start is a recap of what they should know from the Stage 6 unit of the same name.

Short question and answer sessions are used at the start of each lesson to gauge the starting point for each student and then work is differentiated, based on the outcomes. Testing occurs at the end of each unit. Students who have not caught up are discussed in subject team meetings and interventions will be put in place. The effect of these is checked each half term.

The units that were covered during lockdown are a particular focus, and will be covered when these units are taught in the Spring and Summer terms. These units and the relevant learning objectives are listed below.

Stage 5

Measuring Space	Convert $\text{cm} \leftrightarrow \text{m}$, $\text{g} \leftrightarrow \text{kg}$
	Estimate lengths, areas and volumes (metric and Imperial)
	Understand the concepts of area and volume/capacity
Investigating Angles	Measure and draw angles
	Angles at a point and on a straight line
	Language of (acute etc.) and estimation of angles
Check, Approx & Estimate	Round to the nearest power of ten or one decimal place
	Estimate the answers to calculations
	Reverse calculations to check answers
Calculating Space	Perimeters of rectilinear shapes (including unknown sides)
	Areas of rectangles
Mathematical Movement	Simple translations and reflections (words only)
	“Congruence”, “Object”, “Image”
Presentation of Data	Draw and use line graphs

Stage 6

Investigating Angles	Angles at a point, on a straight line and vertically opposite
	Explain reasoning when finding unknown angles
Solving Equations & Ineqs	Solve missing number word problems
	Also with two unknowns and multiple answers
	Start using algebra for number problems
Calculating Space	Calculate areas of rectangles, triangles and parallelograms
	Calculate volumes of cuboids
	Units of area and volume
Check, Approx & Estimate	Round to the nearest power or decimal place
	Estimate answers to integer multiplication and division problems

Mathematical Movement	Coordinates in all four quadrants
Presentation of Data	Construct and interpret pie charts
Measuring Data	Calculate the mean and solve problems involving the mean

Stage 7

Calculating Space	Use standard formulae for area including the trapezium
	Calculate surface areas of cuboids
Check, Approx & Estimate	Round number to any number of decimal places and 1 sig fig
	Estimate calculations by rounding to 1 sig fig (including decimals)
Mathematical Movement	Recognise and use $x=a$, $y=a$, $y=x$ and $y=-x$
	Reflect shapes in these lines
	Use column vectors for translations
	Simple rotations
Presentation of Data	Interpret/construct frequency tables, pictograms, bar and pie charts
Measuring Data	Find the mean, median, mode and range from frequency tables

Stage 8

Calculating Space	Language associated with circles
	Calculate the areas and circumferences of circles
Algebraic Proficiency	$y=mx+c$
	Plot quadratic graphs using a table or the calculator table function
Presentation of Data	Grouped frequency tables and histograms with equal widths
	Scatter diagrams and correlation
Measuring Data	Estimate the mean from a grouped frequency table

Year 9

The first four weeks in September 2020 are being used to recap the work they covered during lockdown. This will vary depending on the group. See above. A middle ability group, for example, is covering the objectives from Stage 8 as listed above.

Short question and answer sessions are used at the start of each lesson to gauge the starting point for each student and then work is differentiated, based on the outcomes. A selection of questions from the relevant CAT test is used to gauge the progress students have made. Students who have not caught up are discussed in subject team meetings and interventions put in place. The effect of these is checked each half term.

Year 10

The first four weeks are focussed upon the objectives taught during lockdown. These vary, depending on whether the group is working towards a Foundation or Higher GCSE level of entry. See below:

Foundation

Fractions and percentages	Compare and order fractions
	Four rules of fractions including mixed numbers
	Use fractions to solve problems

	Convert between fractions, decimals and percentages
	Use percentages to solve problems in real-life situations (e.g. VAT)
	Calculate percentage increases and decreases
Equations, inequalities and sequences	Solve linear equations including with unknowns on two sides and with brackets
	Solve linear inequalities
	Represent inequalities on a number line
	Substitute into a formula
	Change the subject of a formula
	Extend sequences and find and use the n^{th} term
Angles	Identify congruent shapes
	Use the angle properties of triangles, quadrilaterals and parallel lines to solve problems
	Calculate and use the interior and exterior angles of polygons

Higher

Angles and trigonometry	Use the angle properties of triangles and quadrilaterals to solve problems
	Calculate and use the interior and exterior angles of polygons
	Use Pythagoras' theorem to solve problems
	Use trigonometry to solve problems
	Know the exact trigonometric values
Graphs	Plot linear graphs and use $y=mx+c$
	Find the equation of a straight line through two points
	Use graphs of rates of change including distance-time and velocity-time
	Recognise direct proportion
	Find the midpoint, gradient and length of a line segment
	Draw quadratic graphs and use them to solve equations
	Recognise the equation of a circle and sketch its graph
Area and volume	Find the area and perimeter of compound shapes
	Recall and use the formula for the area of a trapezium
	Convert between metric units including those of area and volume
	Calculate volumes and surface areas of prisms
	Calculate the area and circumference of circles
	Solve length, area and angle problems involving sectors
	Calculate the volume and surface area of cylinders and spheres
	Calculate the volume and surface area of pyramids and cones

Short question and answer sessions are used at the start of each lesson to gauge the starting point for each student and then work differentiated based on the outcomes. A selection of questions from the relevant unit test are used to gauge progress. Students who have not caught up are discussed in subject team meetings and interventions put in place. The effect of these is checked each half term.

Year 11

The first four weeks are focussed upon the objectives taught during lockdown. These vary depending on whether the group is working towards a Foundation or Higher GCSE level of entry. See below:

Foundation

Right-angled triangles	Use Pythagoras' theorem to solve problems
	Use trigonometry to solve problems
	Know the exact trigonometric values
Probability	Calculate probabilities from equally likely outcomes
	Understand mutually exclusive and exhaustive outcomes
	Use sample space diagrams to calculate probabilities
	Estimate probabilities using experimental data
	Use Venn diagrams to calculate probabilities and use set notation
	Use tree diagrams to calculate probabilities when events are independent and when they are not
Multiplicative reasoning	Calculate percentage profit or loss
	Solve reverse percentage problems
	Find an amount after repeated percentage change
	Solve problems involving compound measures (e.g. density)
	Solve problems involving distance, speed, acceleration and time
	Calculate average speed
	Convert between metric units of speed
	Use direct and inverse proportion and derive their formulas

Higher

More trigonometry	Use upper and lower bounds in trigonometry problems
	Find the sine, cosine and tangent of any angle
	Know the graphs of sine, cosine and tangent and use them to solve problems
	Calculate the area of a triangle and a segment of a circle
	Use the sine and cosine rules
	Use Pythagoras' theorem and trigonometry in 3D problems
	Recognise how changes in a function transform trigonometric graphs
Further statistics	Understand how to take random and stratified samples
	Draw and interpret cumulative frequency tables and graphs
	Find the median, quartiles and interquartile range from a cumulative frequency graph and a stem and leaf diagram
	Draw, interpret and compare box plots
	Draw and interpret histograms
	Use statistics to compare two sets of data

Short question and answer sessions are used at the start of each lesson to gauge the starting point for each student and then work differentiated based on the outcomes. A selection of questions from the relevant unit test are used to gauge progress. Students who have not caught up are discussed in subject team meetings and interventions put in place. The effect of these is checked each half term.