

Hobart High School Key Stage 3 Curriculum Map – Year 7

Department: Mathematics

	Unit, Topic or Summary of work covered	Knowledge & Skills Developed	Assessment	Personal Development
Autumn 1	NUMBERS AND THE NUMBER SYSTEM	Primes, factors, multiples, HCF and LCM. Indices, square, cube and triangular numbers.	Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.	
	COUNTING AND COMPARING	Ordering negative numbers, fractions (inc. mixed numbers) and decimals. Using the inequality symbols to compare numbers.		
	CALCULATING	Methods for addition, subtraction, multiplication and division of integers and decimals. Apply BIDMAS		
Autumn 2	VISUALISING AND CONSTRUCTING	Identify faces, edges and vertices. Use and interpret the correct geometric notation for parallel, perpendicular and equal length lines. Know the meaning of 'regular' polygons, identify line and rotational symmetry. Construct triangles.	Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Autumn term. One will be a non-calculator paper the other a calculator.	
	PROPERTIES OF SHAPES	Recall the names and properties of special triangles and quadrilaterals and apply these in context.		
	ALGEBRAIC PROFICIENCY	Know the meaning of expression, term, formula, equation and function. Collect like terms, expand a bracket and substitute into expressions/formulae.		
Spring 1	EXPLORING FRACTIONS, DECIMALS AND PERCENTAGES	Express one quantity as a fraction of another. Simplify fractions, convert improper fractions to mixed numbers and vice versa. Express percentages as fractions and decimals, calculate percentages of amounts.	Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.	
	PROPORTIONAL REASONING	Interpret ratio notation, simplify a ratio, divide a quantity into a given ratio		
	SEQUENCES	Use a term to term rule and describe a number sequence		

Spring 2	<p>MEASURING SPACE</p> <p>INVESTIGATING ANGLES</p> <p>FRACTIONS, DECIMALS AND PERCENTAGES</p>	<p>Use a ruler and protractor accurately, convert between metric and imperial units of length, mass and volume. Use the different units of time and money.</p> <p>Use angle facts relating to those around a point, on a straight line and inside triangles and quadrilaterals.</p> <p>Add, subtract, multiply and divide fractions (inc. improper fractions and mixed numbers). Increase and decrease amounts by a given percentage. Use a percentage multiplier (and calc.) to increase and decrease amounts.</p>	<p>Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Spring term. One will be a non-calculator paper the other a calculator.</p>	
Summer 1	<p>SOLVING EQUATIONS AND INEQUALITIES</p> <p>CALCULATING SPACE</p> <p>CHECKING, APPROXIMATING AND ESTIMATING</p>	<p>Solve equations using the 'balancing' method when a maximum of three steps are required, these equations could include brackets.</p> <p>Calculate the perimeter and area of triangles, squares, rectangles, parallelograms and trapeziums. Find a missing length when the area is given. Work out the surface area or volume of cubes and cuboids. Find the missing lengths when surface area or volume is known.</p> <p>Rounding to a given number of decimal places or significant figures. Estimation.</p>	<p>Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.</p>	
Summer 2	<p>MATHEMATICAL MOVEMENT</p> <p>PRESENTATION OF DATA</p> <p>MEASURING DATA</p>	<p>Write and interpret the equation of a line parallel to either the x or y axis, $y = x$ or $y = -x$. Reflect in a diagonal mirror line, use a vector to describe/complete a translation, describe/complete a rotation.</p> <p>Understand different data types, interpret and construct a frequency tables, pictograms, bar charts, line graphs and pie charts.</p> <p>Mode, median, mean and range of a data set including frequency tables. Analyse and compare data sets.</p>	<p>Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Summer term. One will be a non-calculator paper the other a calculator.</p>	

Hobart High School Key Stage 3 Curriculum Map – Year 8

Department: Mathematics

	Unit, Topic or Summary of work covered	Knowledge & Skills Developed	Assessment	Personal Development
Autumn 1	NUMBERS AND THE NUMBER SYSTEM	Prime numbers, prime factors, Venn diagrams, Highest Common Factor, Lowest Common Multiple, Significant Figures, Standard Form.	Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.	
	CALCULATING	Negative number, Square & Cube numbers, using a calculator correctly with fractions, powers and roots.		
	VISUALISING AND CONSTRUCTING	Shape enlargement, centre of enlargement, plans and elevations, bearings.		
Autumn 2	UNDERSTANDING RISK	Probability, the probability scale, outcomes and equally likely outcomes, theoretical probabilities and probability sums.	Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Autumn term. One will be a non-calculator paper the other a calculator.	
	ALGEBRAIC PROFICIENCY	Write products algebraically, use fractions & algebra, factorise an expression, simplify algebra, law of indices, formulae & subject of a formula, change the subject of a formula.		
	EXPLORING FRACTIONS, DECIMALS AND PERCENTAGES	Terminating & recurring fractions, equivalent fractions, decimals as fractions, cancelling fractions, using a calculator with fractions, write a decimal as a percentage, write a fraction as a percentage.		
Spring 1	PROPORTIONAL REASONING	Identify ratios, write ratios, identify proportions, find multipliers, use fractions with ratio and proportion, compound units, speed, distance and time, unit of measure conversion.	Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.	
	SEQUENCES	Generate sequences, term-to-term rules, position-to-term rules, nth term. Alternate & corresponding angles, angles in a triangle, angles in polygons, interior angles in regular polygons and exterior angles in regular polygons.		
	INVESTIGATING ANGLES			

<p>Spring 2</p>	<p>CALCULATING FRACTIONS, DECIMALS & PERCENTAGES</p> <p>SOLVING EQUATIONS AND INEQUALITIES</p>	<p>Fractions and percentages, identify multipliers for percentages, percentage change, reverse percentages, simple interest, problems involving fractions.</p> <p>BIDMAS in equations, solve linear equations with one unknown, unknowns on both sides, solutions with fractions and solutions involving negatives, unknowns involving brackets, checking solutions using substitution.</p>	<p>Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Spring term. One will be a non-calculator paper the other a calculator.</p>	
<p>Summer 1</p>	<p>CALCULATING SPACE</p> <p>ALGEBRAIC PROFICIENCY</p>	<p>Circles, using π (π), formula for the circumference, radius and diameter, perimeter of composite shapes, area of a circle, volume of a cylinder.</p> <p>Straight line graphs and $y = mx + c$, gradients of straight lines, y-intercept, sketching linear graphs, simple quadratic graphs, distance-time graphs.</p>	<p>Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.</p>	
<p>Summer 2</p>	<p>UNDERSTANDING RISK</p> <p>PRESENTATION OF DATA</p> <p>MEASURING DATA</p>	<p>Venn diagrams, event outcomes, two-way tables, frequency trees, probabilities, theoretical possibility spaces, expected outcome and experimental probability.</p> <p>Continuous data, grouped frequency table, histograms, scatter graphs, correlation, interpretation of diagrams.</p> <p>Modal class of grouped data, median, estimated mean, estimated range, comparison of data sets, limitations of averages.</p>	<p>Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Summer term. One will be a non-calculator paper the other a calculator.</p>	

Hobart High School Key Stage 3 Curriculum Map – Year 9

Department: Mathematics

	Unit, Topic or Summary of work covered	Knowledge & Skills Developed	Assessment	Personal Development
Autumn 1	CALCULATING VISUALIZING AND CONSTRUCTING	Positive, negative and fractional (roots) indices. Standard form numbers including calculations. Use the bounds for rounded quantities to solve problems involving accuracy. Locus (loci) constructions for solving problems and constructing shapes. Look at 2D representations of 3D shapes.	Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.	
Autumn 2	ALGEBRAIC PROFICIENCY PROPORTIONAL REASONING	Create Quadratic expressions by multiplying two linear expressions. Factorise quadratic expressions. Use mathematical argument to solve problems. Identify and use expressions and formulas to model situations that solutions to be found. Recognise direct and inverse proportion in situations, graphically and algebraically. Congruent (similar) shapes Compound measures	Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Autumn term. One will be a non-calculator paper the other a calculator.	

Spring 1	PATTERN SNIFFING	Fibonacci numbers and sequences Quadratic sequences	Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.
	SOLVING EQUATIONS AND INEQUALITIES	Understand and solve inequalities.	
Spring 2	CALCULATING SPACE	Circles and part circles. Surface area of a right prism and cylinders. Pythagoras' theorem	Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Spring term. One will be a non-calculator paper the other a calculator.
	CONJECTURING	Congruent triangles Use known facts to solve geometrical problems and create simple proofs. Pythagorean triples.	
Summer 1	ALGEBRAIC PROFICIENCY	Equations and graphs of lines, quadratics, cubics, and reciprocals. Graphs of non-standard functions and kinematic situations in real contexts.	Throughout the year pupils will complete end of topic tests, this is in addition to the verbal and written feedback they get during lessons. Homework is also set regularly.
	SOLVING EQUATIONS AND INEQUALITIES	Simultaneous equations	
Summer 2	UNDERSTANDING RISK	Tree diagrams and combining probabilities. Understand relative frequency and the link to theoretical probability.	Two 30 minute exam papers will assess a pupils understanding of the topics covered in the Summer term. One will be a non-calculator paper the other a calculator.
	PRESENTATION OF DATA	Time series graphs, compound bar charts, and other non-standard graphs and charts. Scatter diagrams, line of best fit, correlation and what that might mean to causation.	