Sept 23 – Jul 24	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
			Year 7			
Learning	**Analysing and displaying data** – averages, displaying data. **Number skills** – operations, types of number, factors, multiples, primes.	**Expressions, functions, and formulae** – functions, simplifying, substitution. **Decimals and measures** – calculating with decimals, perimeter, area.	**Fractions** – comparing, simplifying, calculating with fractions. **Probability** – calculating probability, experimental, theoretical.	**Ratio and proportion** – problem solving, ratio calculations, proportion.	**Lines and angles** – measuring angles, accurate drawings, angles in quadrilaterals and triangles. **Sequences and graphs** – sequences, nth term, co-ordinates, straight line graphs.	**Transformations** – enlargements, symmetry, reflection, rotation, translations.
Strands	Statistics Number	Algebra Number Geometry Ratio and proportion	Number Ratio and proportion Probability	Ratio and proportion	Geometry Algebra	Geometry
Prior knowledge	**Analysing and displaying data** – basic number skills, basic drawing skills. **Number skills** - understand place value, add, subtract, multiply, and divide up to two-digit integers	**Expressions, functions, and formulae** – number skills, recognition of using a letter for an unknown. **Decimals and measures** – place value.	**Fractions** – understanding what a fraction represents, knowing the fraction line means to divide, percentage is out of 100, multiply and divide by powers of 10. **Probability** – ordering probability words onto a scale e.g. unlikely, certain, impossible.	**Ratio and proportion** – ratio notation, multiply and divide integers. Divide an amount into equal parts. Find the HCF of two numbers. Use a diagram to write a ratio. Write a ratio in its simplest form.	**Lines and angles** – identify basic shapes, ability to accurately draw lines and angles with a ruler, addition, and subtraction up to three-digit integers. **Sequences and graphs** – order of operations, term-to-term pattern recognition.	**Transformations** – drawing ability, knowledge of coordinates and axes, multiplication, and division of small numbers.

Misconceptions	Not leaving gaps between the bars, different widths for each bar, inconsistent drawings, forgetting a key, mixing up axes. Aligning the correct value digits for addition and subtraction, mixing up multiples and factors, thinking that 1 is prime.	Substituting a value into an expression without completing the operation (is 3m = 37 instead of 3x7), misunderstanding of negative numbers. Not lining up with the decimal point/incorrect columns.	Adding and subtracting numerators and denominators, regardless of the denominator. Times tables not known, or no system to work them out. Confusion about scale and thinking that a probability can be greater than 1.	Not finding the value of one item first when answering a question that requires the use of the unitary method. Writing a ratio in the wrong order. When dividing an amount in a ratio, e.g. £12 in the ratio 2 : 3, working out 12 ÷ 2 and 12 ÷ 3.	Use of equipment. Getting axes the wrong way round / reading coordinates as y then x.	Confusion that enlargement must mean that the shape gets bigger. Not knowing clockwise/anti-clockwise directions, left and right confusion.

Sept 23 – Jul 24	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Year 8						
Learning	**Number** – Calculations, powers, roots, brackets. **Area and volume** – triangles, parallelograms, trapeziums, volume, and surface area.	**Expressions and equations** – expanding, factorising, solving equations. **Real-life graphs** – conversion, distance-time, line.	**Decimals and ratio** – calculating with decimals, ratios involving decimals. **Lines and angles** – alternate, exterior, interior angles	**Calculating with fractions** – adding, subtracting, multiplying, and dividing.	**Straight line graphs** – gradients, equations. **Percentages, decimals, and fractions** – conversions, writing percentages, percents of amount.	**Statistics, graphs, and charts** – Planning a survey, collecting data, pie charts, stem and leaf, scatter graphs.
Strands	Number Geometry	Algebra	Number Geometry	Number	Algebra Ratio and proportion Number	Statistics
Prior knowledge	Pre-requisites... Y7 units 2, 3, 4 & 7 Round decimals to the nearest whole number, 10 and 100. Addition and subtraction using a written method.	Pre-requisites... Y7 units 2, 4, 5, 9 Y8 unit 2 Recall of squares and cubes. Simplifying like terms. Index notation for a product.	Pre-requisites... Y7 units 2, 4 Y8 unit 2 How to decide to round up or down. Rounding to nearest 100 and 1000	Pre-requisites... Y7 units 5 Y8 unit 1 & 2 Addition and subtraction of fractions where the denominators are equal Writing fractions as mixed numbers	Pre-requisites... Y7 units 5, 9. Y8 unit 2, 3, 4, 5, 6 & 8 Coordinate pairs from $y = 4x$ Multiplying with negative numbers Ordering time / distance graphs	Pre-requisites... Y7 units 1, 4, 5, 8 & 9. Number of degrees in circle Drawing a circle and radius Working out simple fractions

Estimate by rounding. Use negative numbers in the context of temperature. Repeated multiplication and BIDMAS. Use the correct priority of operations for more complex calculations. Calculate powers of 10, 100 and 1000. Find the HCF of two numbers. Find the area and perimeter of a square and rectangle. Write an expression for the area and perimeter of a rectangle.	Priority of operations (BIDMAS). Construct expressions from written descriptions. Expanding brackets List factors of a number. Factorise individual terms. Find the HCF. Find the function given the input and output of a function machine. Check a calculation using the inverse operation. Solve a one-step equation. Find the output of a two-step function machine.	Arranging in ascending order. Understanding of place value in 0.1 and 0.01 Simple multiplication Estimation skills Adding and subtracting in money context Finding equivalent ratios Simplifying ratios Sharing quantities in given ratios Divide quantities into ratios with decimal results. Angle sum of a quadrilateral. Describe line and rotational	Writing simple equivalent fractions Finding the lowest common multiple (LCM) of two numbers. Simple fractions of quantities Simplify fractions. Match equivalent fractions and decimals Multiplying fractions Division questions worded as 'How many … in …' Finding common factors	according to speed. Completing a table of values for $y = 2x + 2$ and using it to plot its graph (positive values of x). Finding the midpoint of vertical, horizontal and diagonal line segments. Round to 2 decimal places. Convert minutes to hours. Know the equivalence of simple fractions and decimals. Use mental methods to find 10% and 15% of a quantity.	and percentages of 360 Find the mean, median, mode and range Interpreting a simple frequency table Choose appropriate scales for axes. Identify what is misleading on a pictogram.

	Describe what 'perpendicular' means. Work out the area of a triangle by counting squares. Work out the perimeter and area of a compound shape made from rectangles only. Substitute numbers into expressions involving brackets. Working out cube numbers. Recognise and name 3D shapes. Convert between metric units of measurement.	Multiplicative reasoning using metric and imperial measures and currency. Copy and complete metric unit conversions. Converting a distance in one hour (speed) to a distance in different fractions of an hour. Working out missing numbers in sequences. Reading values from a conversion graph. Finding the midpoint of two numbers. Interpreting straight line graphs.	symmetry of quadrilaterals. Angle sum on a straight line is 180°. Angle sum of a triangle is 180° and a straight line and around a point. Identify alternate and vertically opposite angles. Find the exterior angles of a triangle and quadrilateral.		Subtract percentages from 100% Increase and decrease an amount by a percentage. Write percentages as fractions.	

Misconceptions	$0.16 \div 2 = 0.8$ When estimating, students think they must round all of the numbers in a calculation, e.g. $24 \div 9.8$ Students misuse rules such as "two negatives make a positive", e.g. $-3 - 7 = 21$ Students think that -2 always means subtract 2. Students confuse e.g. 2^3 with 2×3 Students think that -3^2 means the same as $(-3)^2$. Students may not completely decompose a number into its prime factors. Forgetting to use the ½ in the formula for the area of a triangle. Using the slant height instead of	Multiplying indices instead of adding them. Students only multiply the first term when expanding brackets. Students only partially factorise an expression. For example, $12a + 16b = 2(6a + 8b)$ Students multiply/divide before adding/subtracting Students do not write each modified equation on a new line, leading to untrue equations, e.g. $2n + 1 = 9 - 1 = 8 \div 2 = 4$. Misreading the scale. When drawing a graph, not plotting points accurately enough.	Insecure in bigger number names. Confusing ascending and descending. Students do not naturally estimate before answering. Failure to change both numbers in a decimal division. Not understanding that ratios can be simplified like fractions. Students fail to realise that alternate angles can be obtuse. Students do not use the properties of triangles to help solve a problem. Students may assume that a polygon is regular. Students may draw exterior angles in two	Not making the fractions have equal denominators before calculating. Adding numerators and denominators together. Confusing rules for multiplying and adding fractions. Not simplifying before / after multiplying fractions. Writing decimal equivalent of e.g. 5/6 as 5.6 Assuming that division always makes things smaller. Viewing the mixed number as two separate numbers.	Accuracy in plotting graphs – uneven intervals or incorrectly marked scales. Not knowing which points to use to find the gradient. Thinking that lines parallel to x-axis will be $x = c$ rather than $y = c$. Dealing with negative values of x when substituting to complete a table of values. Working out a gradient when the scales are different on each axis. Students read hours and minutes as a decimal, e.g. 1 h 48 m = 1.48 h. Students may calculate a proportion as though it is a ratio, e.g. 2 out of 5	Give highest frequency instead of mode/modal class; Not ordering the leaves in a stem & leaf. Not being able to decide which is the most appropriate average to use in an 'open' question. Joining the points with lines – emphasise that a scatter graph shows a scatter of points, not a line.

	the perpendicular height. Adding the length width and height rather than multiplying them for volume. Finding volume instead of surface area.	Using inappropriate scales when drawing their own graphs.	different directions.		calculated as 2 ÷ 7. Students do not convert quantities to the same unit before comparing. Students do not know whether to multiply or divide by a multiplier.	

Sept 23 – Jul 24	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
			Year 9			
Learning	**Number** – Factors, multiples, index notation, prime factors. **Algebra** – simplifying expressions, substitution.	**Averages and range** – mean, median, mode, range from lists, frequency tables, stem and leaf diagrams and grouped frequency, scatter graphs, line of best fit. **Fractions and percentages** – add, subtract, multiply, and divide fractions, convert between mixed numbers and improper fractions.	**Fractions and percentages** - convert between fractions, decimals, and percentages, find a percentage of a quantity, simple interest, calculating percentage increase and decrease, VAT, problem solving. **Sequences** – Recognise and extend sequences, nth term.	**Right-angled triangles** – Pythagoras' theorem, trigonometry.	**Number** – calculations, decimal numbers, place value, fractions, and decimals, calculating with percentages.	**Algebra** – formulae, expanding brackets, factorising, using expressions and formulae.
Strands	Number Algebra	Statistics Number Ratio and proportion	Number Ratio and proportion Algebra	Number Geometry Ratio and proportion	Number	Algebra Number
Prior knowledge	**Number** – list primes, factors, multiples, convert metric units, use simple powers of 10. Students will have an appreciation of place value, and	**Averages and range** – midpoints, identifying mode, median, range, drawing stem and leaf diagrams, understand inequality notation, read data from a frequency table, plot coordinates in the	**Fractions and percentages** – identify the value of a digit in a decimal, convert common fractions, write one number as a fraction or another.	**Right-angled triangles** – calculating squares and square roots, rounding, simplifying fractions, calculator skills, identify the hypotenuse.	**Number** – using inequality symbols, ordering numbers, identifying place value, conversions, multiply and divide by powers of 10, convert between decimals	**Algebra** – calculating with negative numbers, substitution, simplifying expressions, HCF, writing simple expressions.

recognise even and odd numbers.

Students will have knowledge of using the four operations with whole numbers.

Students should have knowledge of integer complements to 10 and to 100.

Students should have knowledge of strategies for multiplying and dividing whole numbers by 2, 4, 5, and 10.

Students should be able to read and write decimals in figures and words.

Algebra – basic expressions, calculating with positive and negative integers, | first quadrant, read values from a graph.

Students should have experience of tally charts.

Students will have used inequality notation.

Students must be able to find the midpoint of two numbers.

Students should be able to use the correct notation for time using 12- and 24-hour clocks.

Fractions and percentages – find equivalent fractions, simplify fractions, divide larger numbers by smaller numbers, multiply a whole number by a fraction.

Students should be able to use the four operations of number. | Students should know number complements to 10 and multiplication tables.

Students should be able to define percentage as 'number of parts per hundred'.

Sequences – simple arithmetic sequences, missing terms, term-to-term rules, substitution, solving simple equations. | Students should be able to rearrange simple formulae and equations, as preparation for rearranging trigonometric formulae.

Students should recall basic angle facts.

Students should understand when to leave an answer in surd form.

Students can plot coordinates in all four quadrants and draw axes. | and fractions, calculate with simple percentages.

Students should know number complements to 10 and multiplication tables.

Students should be able to define percentage as 'number of parts per hundred'.

Students should be able to use the four operations of number. | |

	HCF, simple substitutions. **Algebra** – simplify simple expressions, multiply, and divide simple terms, use index notation, recognise equivalent expressions, apply four operations.	Students have a basic understanding of fractions as being 'parts of a whole'. Students should know number complements to 10 and multiplication tables.				
Misconceptions	Students may write statements such as 150 − 210 = 60. Significant figures and decimal place rounding are often confused. Some students may think 35 877 = 36 to two significant figures. The order of operations is not applied correctly when squaring negative numbers.	Making the wrong link between what the data in a frequency table represents, so for example may state the 'frequency' rather than the interval when asked for the modal group. Lines of best fit are often forgotten. Interpreting scales of different measurements and confusion between x and y axes when plotting points.	Incorrect links between fractions and decimals, such as thinking that 15 = 0.15, 5% = 0.5, 4% = 0.4, etc. It is not possible to have a percentage greater than 100%.	Misunderstanding of answers displayed on a calculator in surd form. Students forget to square root their final answer or round their answer prematurely. Labelling sides incorrectly. Confusion between use of Pythagoras and Trigonometry.	Incorrect links between fractions and decimals, such as thinking that 15 = 0.15, 5% = 0.5, 4% = 0.4, etc. It is not possible to have a percentage greater than 100%. The larger the denominator the larger the fraction.	$3(x + 4) = 3x + 4$. The convention of not writing a coefficient with a single value, i.e. x instead of $1x$, may cause confusion. Some students may think that it is always true that $a = 1$, $b = 2$, $c = 3$. If $a = 2$ sometimes students interpret $3a$ as 32. Making mistakes with negatives, including the

	10^3 is interpreted as 10 × 3. 1 is a prime number. 'Product' being related to addition. Poor number skills involving negatives and times tables.	The larger the denominator the larger the fraction.			squaring of negative numbers.

Sept 23 – Jul 24	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
			Year 10			
Learning	**Number** – calculations, decimal numbers, place value, factors and multiples, squares, cubes and roots, index notation, prime factors. **Algebra** – Simplifying expressions, substitution, formulae, expanding brackets, factorising, using expressions and formulae.	**Graphs, tables, and charts** – frequency tables, two-way tables, representing data, time series, stem and leaf diagrams, pie charts, scatter graphs, line of best fit.	**Fractions and percentages** – working with fractions, operations with fractions, multiplying, dividing, fractions and decimals and percentages, calculating percentages.	**Equations, inequalities, and sequences** – solving equations, introducing inequalities, formulae, generating sequences, nth term.	**Angles** – properties of shapes, angles in parallel lines, triangles, interior and exterior angles. **Averages and range** – mean, median, mode, range, estimating the mean, sampling.	**Perimeter, area, and volume** – rectangles, parallelograms, triangles, trapezia, compound shapes, surface area of 3D solids, volume of prisms.
Strands	Number Algebra	Geometry Statistics	Number Ratio and proportion	Algebra	Geometry Statistics	Number Geometry Ratio and proportion
Prior knowledge	**Number** – rounding, multiplying, and dividing by powers of 10, understanding the meaning of prime, factors, multiples, converting	**Graphs, tables, and charts** – tally charts, convert between 12- and 24-hour clock times, interpreting charts, ordering numbers, circle knowledge, plot coordinates in the	**Fractions and percentages** – equivalence, simplifying, converting units of length, adding and subtracting fractions, mixed numbers, and	**Equations, inequalities, and sequences** – inverse operations, solve simple one-step equations, function machines,	**Angles** – lines of symmetry, drawing angles, parallel, perpendicular, acute, obtuse, know properties of quadrilaterals and special triangles, use angle facts.	**Perimeter, area, and volume** – perpendicular, converting between units of length, multiplying, and dividing by powers of 10,

between metric units, listing factors and multiples. Students will have an appreciation of place value, and recognise even and odd numbers. Students will have knowledge of using the four operations with whole numbers. Students should have knowledge of integer complements to 10 and to 100. Students should have knowledge of strategies for multiplying and dividing whole numbers by 2, 4, 5, and 10. Students should be able to read and write decimals in	first quadrant, read values from a graph. Students should be able to read scales on graphs, draw circles, measure angles and plot coordinates in the first quadrant, and know that there are 360 degrees in a full turn and 180 degrees at a point on a straight line. Students should have experience of tally charts. Students will have used inequality notation. Students must be able to find the midpoint of two numbers. Students should be able to use the correct notation for time using 12- and 24-hour clocks.	improper fractions, multiply a whole number by a fraction, convert common fractions into decimals and percentages. Students should be able to use the four operations of number. Students should be able to find common factors. Students have a basic understanding of fractions as being 'parts of a whole'. Students should be able to define percentage as 'number of parts per hundred'. Students should know number complements to 10 and multiplication tables.	expanding single brackets, recognise inequality symbols, simple arithmetic sequences, term-to-term rules, substitution. Students should be able to use inequality signs between numbers. Students should be able to use negative numbers with the four operations, recall and use the hierarchy of operations and understand inverse operations. Students should be able to deal with decimals and negatives on a calculator. Students should be able to use	Students should be able to use a ruler and protractor. Students should have an understanding of angles as a measure of turning. Students should be able to name angles and distinguish between acute, obtuse, reflex and right angles. Students should recognise reflection symmetry, be able to identify and draw lines of symmetry, and complete diagrams with given number of lines of symmetry. Students should recognise rotation symmetry and be able to identify orders of rotational	describe shapes using correct vocabulary. Students should be able to measure lines and recall the names of 2D shapes. Students should be able to use strategies for multiplying and dividing by powers of 10. Students should be able to find areas by counting squares and volumes by counting cubes. Students should be able to interpret scales on a range of measuring instruments.

	figures and words.

Algebra – basic expressions, calculating with positive and negative integers, HCF, simple substitutions. | | | index laws numerically.

Students should be able to draw a number line. | symmetry, and complete diagrams with given order of rotational symmetry.

Averages and range – identify mode, median and range, reading data from a frequency table.

Students should be able to calculate the midpoint of two numbers.

Students will have drawn the statistical diagrams in "Graphs, Charts & Tables".

Students will have used inequality notation. | |
| **Misconceptions** | Students may write statements such as 150 − 210 = 60. | Making the wrong link between what the data in a frequency table represents, so for example may | The larger the denominator the larger the fraction.

Incorrect links between fractions | Rules of adding and subtracting negatives. | Perpendicular lines have to be horizontal/vertical. All triangles have rotational | Shapes involving missing lengths of sides often result in incorrect answers. |

	Significant figures and decimal place rounding are often confused.	state the 'frequency' rather than the interval when asked for the modal group.	and decimals, such as thinking that 15 = 0.15, 5% = 0.5, 4% = 0.4, etc.	Inverse operations can be misapplied.	symmetry of order 3.	Students often confuse perimeter and area.
	Some students may think 35 877 = 36 to two significant figures.	For pie charts; Same size sectors for different sized data sets represent the same number rather than the same proportion.	It is not possible to have a percentage greater than 100%.	When solving inequalities, students often state their final answer as a number quantity and either exclude the inequality or change it to =.	Some students will think that all trapezia are isosceles, or a square is only square if 'horizontal', or a 'non-horizontal' square is called a diamond.	Volume often gets confused with surface area.
	The order of operations is not applied correctly when squaring negative numbers. 10^3 is interpreted as 10×3. 1 is a prime number. 'Product' being related to addition. Poor number skills involving negatives and times tables. $3(x + 4) = 3x + 4$. Students may think that it is always true that $a = 1$, $b = 2$, $c = 3$.	Lines of best fit are often forgotten. Interpreting scales of different measurements and confusion between x and y axes when plotting points.			Some students may think that the equal angles in an isosceles triangle are the 'base angles'. Incorrectly identifying the 'base angles' (i.e. the equal angles) of an isosceles triangle when not drawn horizontally. All polygons are regular. The concept of an unbiased sample is difficult for some students to understand.	

	If $a = 2$ sometimes students interpret $3a$ as 32. Making mistakes with negatives, including the squaring of negative numbers.				Often the $\sum(m{\times}f)$ is divided by the number of classes rather than $\sum f$ when estimating the mean.	

Sept 23 – Jul 24	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
			Year 11			
Learning	Percentages Prime factors including HCF/LCM. Simplify expressions, expand brackets & factorise. Straight line graphs in y = mx + c form. Solving equations. Inequalities. Venn & tree diagrams.	Area, surface area and volume. Direct proportion, inverse proportion. Scatter graphs, line of best fit. Expanding double brackets. Drawing quadratic graphs	Pythagoras' theorem, trigonometry. Vectors, resultant of 2 vectors. Solving simultaneous equations algebraically and graphically. Compound measures.	Distance, speed, time. Cylinders, pyramids and cones, spheres, and composite solids. Rearranging formulae. Plans and elevations, accurate drawing, scale drawings and maps.	Constructions, loci and regions. Bearings. Revision.	Revision and exams.
Strands	Number, Algebra & Geometry	Geometry, Number, Ratio and proportion & Algebra	Number, Geometry, Algebra & Ratio and proportion	Number, Geometry, Algebra & Ratio and proportion.	Geometry	
Prior knowledge	Convert percentages to decimals. Express one number as a percentage of another. Work out percentage increases and decreases. Index Form Students will have an	**Perimeter, area, and volume** – perpendicular, converting between units of length, multiplying, and dividing by powers of 10, describe shapes using correct vocabulary. Students should be able to measure lines	Add and subtract with negative numbers, substitution, rearrange equations, area of trapezium and volume of prisms. Students should be able to rearrange simple formulae and	Convert between units of length, know the necessary formula, recognition of nets, area of 2D shapes, Pythagoras' theorem, properties of special triangles and	Scale factors and enlargements, identify solids from its net, parallel and perpendicular lines, complement of 180 or 360 degrees, properties of angles at a point, on a straight line,	

	appreciation of place value, and recognise even and odd numbers. Students will have knowledge of using the four operations with whole numbers. Students should have knowledge of integer complements to 10 and to 100. Students should have knowledge of strategies for multiplying and dividing whole numbers by 2, 4, 5, and 10. **Algebra** – basic expressions, calculating with positive and negative integers, HCF, simple substitutions.	and recall the names of 2D shapes. Students should be able to use strategies for multiplying and dividing by powers of 10. Students should be able to find areas by counting squares and volumes by counting cubes. Students should be able to interpret scales on a range of measuring instruments.	equations, as preparation for rearranging trigonometric formulae. Students should recall basic angle facts. Students should understand when to leave an answer in surd form. Students can plot coordinates in all four quadrants and draw axes. Students will have used column vectors when dealing with translations. Students can recall and apply Pythagoras' Theorem on a coordinate grid. Students should be able to recognise and enlarge shapes	quadrilaterals, congruence. Students should know the formula for calculating the area of a rectangle. Students should know how to use the four operations on a calculator.	alternate and corresponding. Students should be able to measure and draw lines.	

	Students should be able to use inequality signs between numbers. Students should be able to use negative numbers with the four operations, recall and use the hierarchy of operations and understand inverse operations. Students should be able to deal with decimals and negatives on a calculator. Students should be able to use index laws numerically.		and calculate scale factors. Students know how to calculate area and volume in various metric measures. Students should be able to measure lines and angles and using compasses, ruler and protractor, and construct standard constructions.		
Misconceptions	Significant figures and decimal place rounding are often confused. Some students may think 35 877	Shapes involving missing lengths of sides often result in incorrect answers.	Misunderstanding of answers displayed on a calculator in surd form.	Diameter and radius are often confused and recollection which formula to use for area and circumference of	Some pupils may use the wrong scale of a protractor. For example, they measure an obtuse angle as	

	= 36 to two significant figures. The order of operations is not applied correctly when squaring negative numbers. 10^3 is interpreted as 10 × 3. 1 is a prime number. 'Product' being related to addition. Poor number skills involving negatives and times tables. $3(x + 4) = 3x + 4$. Students may think that it is always true that $a = 1$, $b = 2$, $c = 3$. If $a = 2$ sometimes students interpret $3a$ as 32. Making mistakes with negatives.	Students often confuse perimeter and area. Volume often gets confused with surface area. Lines of best fit are often forgotten. Interpreting scales of different measurements and confusion between x and y axes when plotting points. Missing terms when expanding double brackets, lack of structure to method. X multiplied by x is 2x not x squared. Simplifying mistakes, particularly misunderstanding negative rules. Joining points on a quadratic graph with straight lines. Mistakes when substituting negative values into a quadratic expression.	Students forget to square root their final answer or round their answer prematurely. Labelling sides incorrectly. Confusion between use of Pythagoras and Trigonometry. Students find it difficult to understand that two vectors can be parallel and equal as they can be in different locations in the plane.	circles is often poor. Misconceptions involving order of operations when substituting into formulae or order when re-arranging formulae. Incorrect formulae used for compound measures. Units do not match for compound measures.	60° rather than as 120°. Often 5 sides only are drawn for a cuboid.	