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| **SEPTEMBER**  | **OCTOBER** | **NOVEMBER** |
| **Weeks 1 – 3** **Number:**Basic Number | **Weeks 4 – 6** **Geometry and measures:**Measures and scale drawings | **Week 7****Statistics:**Charts, tables and averages | **Week 8***Holiday* | **Week 9****Statistics:**Charts, tables and averages |
| **NOVEMBER** | **DECEMBER** | **JANUARY** |
| **Weeks 10 – 12** **Geometry and measures:**Angles | **Weeks 13 – 15** **Number:**Number properties | **Week 16***Holiday* | **Week 17***Holiday* | **Weeks 18 – 19** **Number:**Approximations | **Weeks 20 – 21** **Number:**Decimals and fractions |
| **JANUARY** | **FEBRUARY** | **MARCH** |  |
| **Weeks 22 – 23** **Algebra:**Linear graphs | **Week 24***Holiday* | **Week 25****Algebra:**Linear graphs | **Weeks 26 – 28** **Algebra:**Expressions and formulae | **Weeks 29 – 30** **Ratio and proportion and rates of change:**Ratio, speed and proportion |
| **APRIL** | **MAY** | **JUNE** |
| **Week 31***Holiday* | **Week 32***Holiday* | **Weeks 33 – 34** **Geometry and measures:** Perimeter and area | **Weeks 35 – 36** **Geometry and measures:**Transformations | **Week 37****Probability:**Probability and events | **Week 38***Holiday* | **Week 39** **Probability:**Probability and events | **Week 40****Geometry and measures:** Volumes and surface areas of prisms |
| **JUNE** | **JULY** |  |
| **Week 41***Summer examinations and revision* | **Week 42***Summer examinations and revision* | **Week 43****Geometry and measures:**Volumes and surface areas of prisms | **Weeks 44 – 45** **Algebra:**Linear equations |

**2 year AQA Foundation tier Route Map YEAR 10**

**2 year AQA Foundation tier Route Map YEAR 11**

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| **SEPTEMBER**  | **OCTOBER** | **NOVEMBER** |
| **Weeks 1 – 2** **Ratio and proportion and****rates of change:**Percentages and compound measures | **Weeks 3 – 4** **Ratio and proportion and rates of change:**Percentages and variation | **Weeks 5 – 7** **Statistics:**Representation and interpretation | **Week 8** *Holiday* | **Weeks 9 – 10** **Geometry and measures:** Constructions and loci |
| **NOVEMBER** | **DECEMBER** | **JANUARY** |
| **Weeks 11 – 12** **Geometry and measures:**Curved shapes and pyramids | **Week 13***Revision and review* | **Weeks 14 – 15** *Mock examinations and revision* | **Week 16***Holiday* | **Week 17***Holiday* | **Weeks 18 – 19** **Algebra:**Number and sequences | **Weeks 20 – 21** **Geometry and measures:**Right-angled triangles |
| **JANUARY** | **FEBRUARY** | **MARCH** |  |
| **Week 22****Geometry and measures:**Right-angled triangles | **Week 23***Holiday* | **Weeks 24 – 25** **Geometry and measures:**Congruency and similarity | **Weeks 26 – 27** **Probability:**Combined events | **Weeks 28 – 29** **Number:** Powers and standard form | **Week 30***Holiday* |
| **APRIL** | **MAY** | **JUNE** |
| **Week 31***Holiday* | **Week 32****Number:**Powers and standard form | **Weeks 33 – 35****Algebra:**Simultaneous equations and linear inequalities | **Weeks 36 – 37** **Algebra:**Non-linear graphs | **Week 38***Holiday* | **Weeks 39 – 40** *Revision* |
| **JUNE** | **JULY** |  |
| **Week 41***June examinations* | **Week 42***June examinations* | **Week 43** | **Week 44** | **Week 45** |

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| **Year** | **Term** | **Week** | **Hours** | **Chapter** | **Topic break-down (sub-topics)** | **Learning Objectives:****Students will be able to:** |
| Year 10 | Term 1 | **Week** **1 – 3**  | 10 | 1: Number: Basic Number | 1.1 Place value and ordering numbers | • use a number line to represent negative numbers• use inequalities with negative numbers• compare and order positive and negative numbers. |
| 1.3 The four rules | • use the four rules of arithmetic with integers and decimals. |
| 1.2 Order of operations and BIDMAS | • work out the answers to problems with more than one mathematical operation. |
| **Week** **4 – 6**  | 10 | 2: Geometry and measures: Measures and scale drawings | 2.1 Systems of measurement | • convert from one metric unit to another• convert from one imperial unit to another. |
| 2.2 Conversion factors | • use approximate conversion factors to change between imperial units and metric units. |
| 2.3 Scale drawings | • read and draw scale drawings• use a scale drawing to make estimates. |
| 2.4 Nets | • draw nets of some 3D shapes• identify a 3D shape from its net. |
| 2.5 Using an isometric grid | • read from and draw on isometric grids• interpret diagrams to draw plans and elevations. |
| **Week 7** | 3 | 3: Statistics: Charts, tables and averages | 3.1 Frequency tables | • use tally charts and frequency tables to collect and represent data• use grouped frequency tables to collect and represent data. |
| 3.2 Statistical diagrams | • draw pictograms to represent statistical data• draw bar charts and vertical line charts to represent statistical data. |
| **Week 8** |  | Holiday |  |  |
| **Week 9** | 4 | 3: Statistics: Charts, tables and averages | 3.3 Line graphs | • draw a line graph to show trends in data. |
| 3.4 Statistical averages | • work out the mode, median, mean and range of small sets of data• decide which is the best average to use to represent a data set. |
| **Week** **10 – 12**  | 10 | 4: Geometry and measures: Angles | 4.1 Angles facts | • calculate angles on a straight line• calculate angles around a point• use vertically opposite angles. |
| 4.2 Triangles | • recognise and calculate the angles in different sorts of triangle. |
| 4.3 Angles in a polygon | • calculate the sum of the interior angles in a polygon. |
| 4.4 Regular polygons | • calculate the exterior angles and the interior angles of a regular polygon. |
| 4.5 Angles in parallel lines | • calculate angles in parallel lines. |
| 4.6 Special quadrilaterals | • use angle properties in quadrilaterals. |
| 4.7 Bearings | • use a bearing to specify a direction. |
| **Week** **13 – 15**  | 10 | 5: Number: Number properties | 5.1 Multiples of whole numbers | • find multiples of whole numbers• recognise multiples of numbers. |
| 5.2 Factors of whole numbers | • identify the factors of a number. |
| 5.3 Prime numbers | • identify prime numbers. |
| 5.4 Prime factors, LCM and HCF | • identify prime factors• identify the lowest common multiple (LCM) of two numbers• identify the highest common factor (HCF) of two numbers. |
| 5.5 Square numbers | • identify square numbers• use a calculator to find the square of a number. |
| 5.6 Square roots | • recognise the square roots of square numbers up to 225• use a calculator to find the square roots of any number. |
| 5.7 Basic calculations on a calculator | • use some of the important keys when working on a calculator. |
|  | **Week 16** |  | Holiday |  |  |
|  | **Week 17** |  | Holiday |  |  |
| Term 2 | **Week** **18 – 19**  | 7 | 6: Number: Approximations | 6.1 Rounding whole numbers | • round a whole number. |
| 6.2 Rounding decimals | • round decimal numbers to a given accuracy. |
| 6.3 Approximating calculations | • identify significant figures• round numbers to a given number of significant figures• use approximation to estimate answers and check calculations• round a calculation at the end of a problem, to give what is considered to be a sensible answer. |
| **Week** **20 – 21**  | 7 | 7: Number: Decimals and fractions | 7.1 Calculating with decimals | • multiply and divide with decimals. |
| 7.2 Fractions and reciprocals | • recognise different types of fraction, reciprocal, terminating decimal and recurring decimal• convert terminating decimals to fractions• convert fractions to decimals• find reciprocals of numbers or fractions. |
| 7.3 Writing one quantity as a fraction of another | • work out a fraction of a quantity• find one quantity as a fraction of another. |
| 7.4 Adding and subtracting fractions | • add and subtract fractions with different denominators. |
| 7.5 Multiplying and dividing fractions | • multiply proper fractions• multiply mixed numbers• divide by fractions. |
| 7.6 Fractions on a calculator | • use a calculator to add and subtract fractions• use a calculator to multiply and divide fractions. |
| **Week** **22 – 23**  | 7 | 8: Algebra: Linear graphs | 8.1 Graphs and equations | • use flow diagrams to draw graphs• work out the equations of horizontal and vertical lines. |
| 8.2 Drawing linear graphs by finding points | • draw linear graphs without using flow diagrams. |
| 8.3 Gradient of a line | • work out the gradient of a straight line• draw a line with a certain gradient. |
| 8.4 *y*=*mx*+*c* | • draw graphs using the gradient-intercept method• draw graphs using the cover-up method. |
| 8.5 Finding the equation of a line from its graph | • work out the equation of a line, using its gradient and y-intercept• work out the equation of a line given two points on the line. |
| 8.6 The equation of a parallel line | • work out the equation of a linear graph that is parallel to another line and passes through a specific point. |
| **Week 24** |  | Holiday |  |  |
| **Week 25** | 4 | 8: Algebra: Linear graphs | 8.7 Real-life uses of graphs | • convert from one unit to another unit by using a conversion graph• use straight-line graphs to work out formulae. |
| 8.8 Solving simultaneous equations using graphs | • solve simultaneous linear equations using graphs. |
| **Week** **26 – 28**  | 10 | 9: Algebra: Expressions and formulae | 9.1 Basic algebra | • write an algebraic expression• recognise expressions, equations, formulae and identities. |
| 9.2 Substitution | • substitute into, simplify and use algebraic expressions. |
| 9.3 Expanding brackets | • expand brackets such as 2(*x* – 3)• expand and simplify brackets. |
| 9.4 Factorisation | • factorise an algebraic expression. |
| 9.5 Quadratic expansion | • expand two linear brackets to obtain a quadratic expression. |
| 9.6 Quadratic factorisation | • factorise a quadratic expression of the form *x*2 + *ax* + *b* into two linear brackets. |
| 9.7 Changing the subject of a formula | • change the subject of a formula. |
| **Week** **29 – 30**  | 7 | 10: Ratio and proportion and rates of change: Ratio, speed and proportion | 10.1 Ratio | • simplify a ratio• express a ratio as a fraction• divide amounts into given ratios• complete calculations from a given ratio and partial information. |
| 10.2 Speed, distance and time | • recognise the relationship between speed, distance and time• calculate average speed from distance and time• calculate distance travelled from the speed and the time taken• calculate the time taken on a journey from the speed and the distance. |
| 10.3 Direct proportion problems | • recognise and solve problems that involve direct proportion. |
| 10.4 Best buys | • find the cost per unit mass• find the mass per unit cost• use the above to find which product is better value. |
|  | **Week 31** |  | Holiday |  |  |
|  | **Week 32** |  | Holiday |  |  |
| Term 3 | **Week** **33 – 34**  | 7 | 11: Geometry and measures: Perimeter and area | 11.1 Rectangles | • calculate the perimeter and area of a rectangle. |
| 11.2 Compound shapes | • calculate the perimeter and area of a compound shape made from rectangles. |
| 11.3 Area of a triangle | • calculate the area of a triangle• use the formula for the area of a triangle. |
| 11.4 Area of a parallelogram | • calculate the area of a parallelogram• use the formula for the area of a parallelogram. |
| 11.5 Area of a trapezium | • calculate the area of a trapezium• use the formula for the area of a trapezium. |
| 11.6 Circles | • recognise terms used for circle work• calculate the circumference of a circle. |
| 11.7 The area of a circle | • calculate the area of a circle |
| 11.8 Answers in terms of π | • give answers for circle calculations in terms of π. |
| **Week** **35 – 36**  | 7 | 12: Geometry and measures: Transformations | 12.1 Rotational symmetry | • work out the order of rotational symmetry for a 2D shape• recognise shapes with rotational symmetry. |
| 12.2 Translation | • translate a 2D shape |
| 12.3 Reflections | • reflect a 2D shape in a mirror line. |
| 12.4 Rotations | • rotate a 2D shape about a point |
| 12.5 Enlargements | • enlarge a 2D shape by a scale factor |
| 12.6 Using more than one transformation | • use more than one transformation. |
| 12.7 Vectors | • represent vectors• add and subtract vectors. |
| **Week 37** | 3 | 13: Probability: Probability and events | 13.1 Calculating probabilities | • use the probability scale and the language of probability• calculate the probability of an outcome of an event. |
| 13.2 Probability that an outcome will not happen | • calculate the probability of an outcome not happening when you know the probability of that outcome happening. |
| 13.3 Mutually exclusive and exhaustive outcomes | • recognise mutually exclusive and exhaustive outcomes. |
| **Week 38** |  | Holiday |  |  |
| **Week 39** | 4 | 13: Probability: Probability and events | 13.4 Experimental probability | • calculate experimental probabilities and relative frequencies from experiments• recognise different methods for estimating probabilities. |
| 13.5 Expectation | • predict the likely number of successful outcomes, given the number of trials and the probability of any one outcome. |
| 13.6 Choices and outcomes | • apply systematic listing and counting strategies to identify all outcomes for a variety of problems. |
| **Week 40** | 3 | 14: Geometry and measures: Volumes and surface areas of prisms | 14.1 3D shapes | • use the correct terms when working with 3D shapes. |
| 14.2 Volume and surface area of a cuboid | • calculate the surface area and volume of a cuboid. |
| **Week** **41 – 42**  | 7 | Summer examinations and revision |  |  |
| **Week 43** | 4 | 14: Geometry and measures: Volumes and surface areas of prisms | 14.3 Volume and surface area of a prism | • calculate the volume and surface area of a prism. |
| 14.4 Volume and surface area of cylinders | • calculate the volume and surface area of a cylinder. |
| **Week** **44 – 45**  | 7 | 15: Algebra: Linear equations | 15.1 Solving linear equations | • solve linear equations such as 3*x* – 1 = 11 where the variable only appears on one side• use inverse operations and inverse flow diagrams• solve equations by balancing• solve equations in which the variable (the letter) appears in the numerator of a fraction |
| 15.2 Solving equations with brackets | • solve equations where you have to first expand brackets. |
| 15.3 Solving equations with the variable on both sides | • solve equations where the variable appears on both sides of the equals sign. |
|  |
| YEAR 11 | Term 1 | **Week** **1 – 2**  | 7 | 16: Ratio and proportion and rates of change: Percentages and compound measures | 16.1 Equivalent percentages, fractions and decimals  | • convert percentages to fractions and decimals and vice versa. |
| 16.2 Calculating a percentage of a quantity | • calculate a percentage of a quantity |
| 16.3 Increasing and decreasing quantities by a percentage | • increase and decrease quantities by a percentage. |
| 16.4 Expressing one quantity as a percentage of another | • express one quantity as a percentage of another• work out percentage change. |
| 16.5 Compound measures | • recognise and solve problems involving the compound measures of rates of pay, density and pressure. |
| **Week** **3 – 4**  | 7 | 17: Ratio and proportion and rates of change: Percentages and variation | 17.1 Compound interest and repeated percentage change | • calculate simple interest• calculate compound interest• solve problems involving repeated percentage change. |
| 17.2 Reverse percentage (working out the original value) | • calculate the original amount, given the final amount, after a known percentage increase or decrease. |
| 17.3 Direct proportion | • solve problems in which two variables have a directly proportional relationship (direct variation)• work out the constant of proportionality• recognise graphs that show direct variation. |
| 17.4 Inverse proportion | • solve problems in which two variables have an inversely proportional relationship (inverse variation)• work out the constant of proportionality. |
| **Week** **5 – 7**  | 10 | 18: Statistics: Representation and interpretation | 18.1 Sampling | • obtain a random sample from a population• collect unbiased and reliable data for a sample.  |
| 18.2 Pie charts | • draw and interpret pie charts. |
| 18.3 Scatter diagrams | • draw, interpret and use scatter diagrams• draw and use a line of best fit. |
| 18.4 Grouped data and averages | • identify the modal group• calculate an estimate of the mean from a grouped table. |
| **Week 8** |  | Holiday |  |  |
| **Week** **9 – 10**  | 7 | 19: Geometry and measures: Constructions and loci | 19.1 Constructing triangles | • construct accurate drawings of triangles, using a pair of compasses, a protractor and a straight edge. |
| 19.2 Bisectors | • construct the bisectors of lines and angles• construct angles of 60° and 90°. |
| 19.3 Defining a locus | • draw a locus for a given rule. |
| 19.4 Loci problems | • solve practical problems using loci. |
| **Week** **11 – 12**  | 7 | 20: Geometry and measures: Curved shapes and pyramids  | 20.1 Sectors | • calculate the length of an arc • calculate the area and angle of a sector. |
| 20.2 Pyramids | • calculate the volume and surface area of a pyramid. |
| 20.3 Cones | • calculate the volume and surface area of a cone. |
| 20.4 Spheres | • calculate the volume and surface area of a sphere. |
| **Week 13** | 3 | Revision and review |  |  |
| **Week** **14 – 15**  | 7 | Mock Exams and Revision |  |  |
|  | **Week 16** |  | Holiday |  |  |
|  | **Week 17** |  | Holiday |  |  |
| Term 2 | **Week** **18 – 19**  | 7 | 21: Algebra: Number and sequences | 21.1 Patterns in number | • recognise patterns in number sequences. |
| 21.2 Number sequences | • recognise how number sequences are built up• generate sequences, given the *n*th term. |
| 21.3 Finding the *n*th term of a linear sequence | • find the *n*th term of a linear sequence. |
| 21.4 Special sequences | • recognise and continue some special number sequences• understand how prime, odd and even numbers interact in addition, subtraction and multiplication problems. |
| 2.5 General rules from given patterns | • find the *n*th term from practical problems involving sequences. |
| **Week** **20 – 22**  | 10 | 22: Geometry and measures: Right-angled triangles | 22.1 Pythagoras’ theorem | * Know what Pythagoras' theorem is
* calculate the length of the hypotenuse in a right-angled triangle.
 |
| 22.2 Calculating the length of a shorter side | * calculate the length of a shorter side in a right-angled triangle.
 |
| 22.3 Applying Pythagoras’ theorem in real-life situations | * solve problems using Pythagoras’ theorem.
 |
| 22.4 Pythagoras’ theorem and isosceles triangles | * use Pythagoras’ theorem in isosceles triangles.
 |
| 22.5 Trigonometric ratios | * define, understand and use the three trigonometric ratios.
 |
| 22.6 Calculating lengths using trigonometry | * use trigonometric ratios to calculate a length in a right-angled triangle.
 |
| 22.7 Calculating angles using trigonometry | * use the trigonometric ratios to calculate an angle.
 |
| 22.8 Trigonometry without a calculator | * work out and remember trigonometric values for angles of 30°, 45°, 60° and 90°.
 |
| 22.9 Solving problems using trigonometry | * solve practical problems using trigonometry
* solve problems using an angle of elevation or an angle of depression.
 |
| 22.10 Trigonometry and bearings | * solve bearing problems using trigonometry.
 |
| 22.11 Trigonometry and isosceles triangles | * use trigonometry to solve problems involving isosceles triangles.
 |
| **Week 23** |  | Holiday |  |  |
| **Week** **24 – 25**  | 7 | 23: Geometry and measures: Congruency and similarity | 23.1 Congruent triangles | • demonstrate that two triangles are congruent. |
| 23.2 Similarity | • recognise similarity in any two shapes• show that two shapes are similar • work out the scale factor between similar shapes. |
| **Week** **26 – 27**  | 7 | 24: Probability: Combined events  | 24.1 Combined events | • work out the probabilities when two or more events occur at the same time. |
| 24.2 Two-way tables | • read two-way tables and use them to work out probabilities. |
| 24.3 Probability and Venn diagrams | • use Venn diagrams to solve probability questions. |
| 24.4 Tree diagrams | • understand frequency tree diagrams and probability tree diagrams• use probability tree diagrams to work out the probabilities involved in combined events. |
| **Week** **28 – 29**  | 7 | 25: Number: Powers and standard form | 25.1 Powers (indices) | • write a number as a power of another number• use powers (also known as indices)• multiply and divide by powers of 10. |
| 25.2 Rules for multiplying and dividing powers | • use rules for multiplying and dividing powers• multiply and divide numbers by powers of 10. |
|  | **Week 30** |  | Holiday |  |  |
|  | **Week 31** |  | Holiday |  |  |
| Term 3 | **Week 32** | 4 | 25: Number: Powers and standard form | 25.3 Standard form | • write a number in standard form• calculate with numbers in standard form. |
| **Week** **33 – 35**  | 11 | 26: Algebra: Simultaneous equations and linear inequalities | 26.1 Elimination method for simultaneous equations | • solve simultaneous linear equations in two variables using the elimination method. |
| 26.2 Substitution method for simultaneous equations | • solve simultaneous linear equations in two variables using the substitution method. |
| 26.3 Balancing coefficients to solve simultaneous equations | • solve simultaneous linear equations by balancing coefficients. |
| 26.4 Using simultaneous equations to solve problems | • solve problems using simultaneous linear equations. |
| 26.5 Linear inequalities | • solve a simple linear inequality and represent it on a number line. |
| **Week** **36 – 37**  | 7 | 27: Algebra: Non-linear graphs | 27.1 Distance-time graphs | • interpret distance–time graphs• draw a graph of the depth of liquid as a container is filled. |
| 27.2 Plotting quadratic graphs | • draw and read values from quadratic graphs. |
| 27.3 Solving quadratic equations by factorisation | • solve a quadratic equation by factorisation. |
| 27.4 The significant points of a quadratic curve | • identify the significant points of a quadratic function graphically• identify the roots of a quadratic function by solving a quadratic equation• identify the turning point of a quadratic function. |
| 27.5 Cubic and reciprocal graphs | • recognise and plot cubic and reciprocal graphs. |
| **Week 38** |  | Holiday |  |  |
| **Week** **39 – 40**  |  | Revision |  |  |
| **Week** **41 – 42**  |  | June Examinations |  |  |