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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 Edexcel Foundation tier Route Map YEAR 10**

**2 year Edexcel 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: More complex statistics | 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**  **22 – 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 the 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. |
| 24.2 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 Velocity-time graphs | • read information from a velocity-time graph  • work out the acceleration from a velocity-time graph. |
| 27.3 Plotting quadratic graphs | • draw and read values from quadratic graphs. |
| 27.4 Solving quadratic equations by factorisation | • solve a quadratic equation by factorisation. |
| 27.5 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. |
| 27.6 Cubic and reciprocal graphs | • recognise and plot cubic and reciprocal graphs. |
| **Week 38** |  | Holiday |  |  |
| **Week**  **39 – 40** |  | Revision |  |  |
| **Week**  **41 – 42** |  | June Examinations |  |  |