Year 9 – Autumn Term

White Rose Maths

We are not recommending a lesson by lesson overview for secondary as we're conscious that schools have a different number of maths lessons per week. Instead you'll find a suggested timeline of which blocks to cover in which weeks. Take a look at our 'Closing the Gaps' document for further guidance.

We will be producing a short video lesson for every small step in our scheme of learning. Please choose the steps that are appropriate for your class to use. You may use more than one in a lesson if appropriate.

(R) Small steps listed in italics are recap steps. We recommend using these to lead into new content. You may choose to cover these steps more quickly, combining steps together into lessons.

(H) Small steps listed in bold are Higher Strand steps. We recommend using these with as many students as possible, but these will be revisited later if you need more time to study/consolidate the Core steps.

Week	Topic
1 07/09/2020 **2** 14/09/2020 **3** 21/09/2020	**Straight Line Graphs** • *Equations of lines parallel to the axis and $y = x$ and $y = -x$* (R) • *Using tables of values* (R) • Compare gradients • Compare intercepts • Understand and use y = mx + c • Write an equation in the form y = mx + c • Find the equation of a straight line from a graph • Interpret gradient and intercept of real life graphs • **Model real life graphs involving inverse proportion** (H) • **Explore perpendicular lines** (H)
4 28/09/2020 **5** 05/10/2020	**Forming and Solving Equations** • *Solve one and two-step equations and inequalities* (R) • *Solve one and two-step equations and inequalities with brackets* (R) • Inequalities with negative numbers • Solve equations with unknowns on both sides • Solve inequalities with unknowns on both sides • Equations and inequalities in other mathematical contexts • Formulae and equations • Rearrange formulae (one-step) • Rearrange formulae (two-step) • **Rearrange complex formulae** (H)

Week	Topic
6 12/10/2020 **7** 19/10/2020	**Testing Conjectures** • *Factors, multiples and primes* (R) • True or false • Always, sometimes, never • Show that • Conjectures about number • Expand a pair of binomials • Conjectures with algebra • Explore the 100 grid
	Half Term
8 02/11/2020 **9** 09/11/2020 **10** 16/11/2020	**Three Dimensional Shapes** • Know names of 2-D and 3-D shapes • Recognise prisms • Accurate nets of cuboids and 3-D shapes • Sketch and recognise nets of cuboids and other 3-D shapes • Plans and elevations • *Find area of 2-D shapes* (R) • Surface area of cubes and cuboids • Surface area of triangular prisms • Surface area of a cylinder • Volume of cubes and cuboids • Volume of other 3-D shapes • **Explore volumes of cones, pyramids and spheres** (H)

Week	Topic
11 23/11/2020	
12 30/11/2020	**Constructions & Congruency** • *Draw and measure angles* Ⓡ • *Construct and interpret scale drawings* Ⓡ • Locus of distance from a point • Locus of distance from a straight line / shape • Locus equidistant from two points • Construct a perpendicular bisector • Construct a perpendicular from a point • Construct a perpendicular to a point • Locus of distance from two lines • Construct an angle bisector • *Construct triangles from given information.* Ⓡ • Identify congruent figures • Explore congruent triangles • Identify congruent triangles
13 07/12/2020	
14 14/12/2020	**Consolidation week** Use this time to recap and revise learning from this year. You might find our mini-assessments or end of term assessments useful at this stage.

Year 9 – Spring Term

White Rose Maths

Week	Topic
1 04/01/2021 **2** 11/01/2021	**Numbers** • Integers, real and rational numbers • **Understand and use surds** (H) • *Work with directed number* (R) • Solve problems with integers • Solve problems with decimals • *HCF and LCM* (R) • *Adding and subtracting fractions* (R) • *Multiplying and dividing fractions* (R) • Solve problems with fractions • *Numbers in standard form* (R)
3 18/01/2021 **4** 25/01/2021	**Using Percentages** • *Use the equivalence of fractions, decimals and percentages* (R) • *Calculate percentage increase and decrease* (R) • *Express a change as a percentage* (R) • Solve 'reverse' percentage problems • Recognise and solve percentage problems (non-calculator) • Recognise and solve percentage problems (calculator) • **Solve problems with repeated percentage change** (H)
5 01/02/2021 **6** 08/02/2021	**Maths and Money** • Solve problems with bills and bank statements • Calculate simple interest • Calculate compound interest • Solve problems with VAT • Calculate wages and taxes • Solve problems with exchange rates • Solve unit pricing problems

Week	Topic
	Half Term
7 22/02/2021 **8** 01/03/2021	**Deduction** • *Angles in parallel lines* Ⓡ • Solve angle problems (using chains of reasoning) • Angle problems with algebra • Conjectures with angles • Conjectures with shapes • **Link constructions and geometrical reasoning** Ⓗ
9 08/03/2021 **10** 15/03/2021	**Rotation & Translation** • Identify the order of rotational symmetry of a shape • Compare and contrast rotational symmetry with lines of symmetry • Rotate a shape about a point on a shape • Rotate a shape about a point not on a shape • Translate points and shapes by a given vector • Compare rotation and reflection of shapes • **Find the result of a series of transformations** Ⓗ
11 22/03/2021 **12** 29/03/2021	**Pythagoras' Theorem** • *Squares and square roots* Ⓡ • Identify the hypotenuse of a right-angled triangle • Determine whether a triangle is right-angled • Calculate the hypotenuse of a right-angled triangle • Calculate missing sides in right-angled triangles • Use Pythagoras' theorem on coordinate axis • Explore proofs of Pythagoras' theorem • **Use Pythagoras' theorem in 3-D shapes** Ⓗ

Year 9 – Summer Term

Week by week overview 2020/21

White Rose Maths

Week	Topic
1 12/04/2021 **2** 19/04/2021	**Enlargement & Similarity** • Recognise enlargement and similarity • Enlarge a shape by a positive integer scale factor • Enlarge a shape by a positive integer scale factor from a point • Enlarge a shape by a positive fractional scale factor • **Enlarge a shape by a negative scale factor** Ⓗ • Work out missing sides and angles in a pair of given similar shapes • **Solve problems with similar triangles** Ⓗ • **Explore ratios in right-angled triangles** Ⓗ
3 26/04/2021 **4** 03/05/2021	**Solve Ratio & Proportion Problems** • *Solve problems with direct proportion* Ⓡ • *Direct proportion and conversion graphs* Ⓡ • Solve problems with inverse proportion • **Graphs of inverse relationships** Ⓗ • *Solve ratio problems given the whole or a part* Ⓡ • Solve 'best buy' problems • **Solve problems ratio and algebra** Ⓗ
5 10/05/2021 **6** 17/05/2021	**Rates** • Solve speed, distance and time problems without a calculator • Solve speed, distance and time problems with a calculator • Use distance/time graphs • Solve problems with density, mass and volume • Solve flow problems and their graphs • Rates of change and their units • **Convert compound units** Ⓗ

Week	Topic
	Half Term
7 24/05/2021 **8** 07/06/2021	**Probability** • *Single event probability* (R) • Relative frequency • Expected outcomes • Independent events • **Use tree diagrams** (H) • **Use tree diagrams to solve 'without replacement' problems** (H) • Use diagrams to work out probabilities
9 14/06/2021	**Algebraic Representation** • Draw and interpret quadratic graphs • Interpret graphs, including reciprocal and piece-wise • **Investigate graphs of simultaneous equations** (H) • Represent inequalities
10 21/06/2021 **11** 28/06/2021 **12** 05/07/2021 **13** 12/07/2021	**Consolidation and Revision** Use this time to recap and revise learning from this year. You might find our mini-assessments or end of term assessments useful at this stage.