

Autumn Term 1 Year 9 Maths

| What? When? Why? | Lesson 1 Learning intentions (what can a student do at the end of the lesson) | Lesson 2 Learning intentions (what can a student do at the end of the lesson) | Lesson 3 Learning intentions (what can a student do at the end of the lesson) | Lesson 4 Learning intentions (what can a student do at the end of the lesson) |
|------------------------|--|--|---|--|
| Week 1 | Plot and recognise lines in the form $x=a$, $y=b$, $y=x$ and $y=-x$ Understand the relationship between a pair of co-ordinates and a line | Complete and use a table of values to plot a straight line graph Look for patterns in their tables of values | Recognise that the coefficient of x in the equation of a line tells us the gradient Identify that the greater the gradient of a line, the steeper it is Recognise that the value of c is the y -intercept | Interpret equations of a line in the form $y=mx+c$ Identify the gradient and y -intercept from the equation of a line Recognise that having the same gradient makes lines parallel |
| Week 2 | Find the equation of a line from a graph | Use graphs showing real-life scenarios to interpret gradient and intercepts Apply real-world knowledge (y -intercept for minimum fare in a taxi) | Interpret real-life graphs involving inverse proportion | Recognise perpendicular lines on a graph Recognise that the product of the gradients of a pair of perpendicular lines will always be -1 |
| Week 3 | Understand and use algebraic notation fluently Solve equations and inequalities with unknowns on one side | Solve equations and inequalities with unknowns on one side including brackets Become familiar with solutions that are not integers | Explore and understand inequalities with negative numbers | Solve equations and inequalities with unknowns on both sides using the 'balance' method |
| Week 4 | Look at forming and solving equations in mathematical contexts eg. Angle rules and averages | Explore the difference between formulae and equations and substitute numbers in formulae to produce equations to solve | Explore the link between solving and rearranging formulae | Explore formulae that include squaring and square rooting and that have terms in brackets |
| Week 5 | Identify the difference between factors and multiples Express a number as a product of primes | Identify whether given statements are true or false | Use reasoning skills to establish whether a statement is sometimes, always or never true | Provide a formal demonstration of whether a statement is true or not Verify algebraic identities |
| Week 6 | Look at conjectures with sums and products of even and odd numbers and verify using diagrams | Expand a pair of binomials where all the terms are positive | Use and experiment with conjectures in algebra such as $2n$ always being even and $2n+1$ is always odd | Use the 100 square to form expressions and practise simplification |
| Week 7 | REVIEW LESSON | REVIEW LESSON | PURPLE ASSESSMENT | FEEDBACK |

Autumn Term 2

| What? When? Why? | Lesson 1 Learning intentions (what can a student do at the end of the lesson) | Lesson 2 Learning intentions (what can a student do at the end of the lesson) | Lesson 3 Learning intentions (what can a student do at the end of the lesson) | Lesson 4 Learning intentions (what can a student do at the end of the lesson) |
|------------------------|--|--|--|---|
| Week 1 | Know names of 2D and 3D shapes | Recognise prisms (including language of edges and vertices) | Accurate nets of cuboids and other 3D shapes | Sketch and recognise nets of cuboids and other 3D shapes |
| Week 2 | Plans and elevations | Find area of 2D shapes (R) | Surface area of cubes and cuboids | Surface area of triangular prisms |
| Week 3 | Surface area of a cylinder | Volume of cubes and cuboids | Volume of other 3D shapes - prisms and cylinders | Explore volumes of cones, pyramids and spheres (H) |
| Week 4 | Draw and measure angles (R) | Construct and interpret scale drawings (R) | Locus of distance from a point | Locus of distance from a straight line |
| Week 5 | Locus equidistant from two points | Construct a perpendicular bisector | Construct a perpendicular from a point | Construct a perpendicular to a point |
| Week 6 | Locus of distance from two lines | Construct an angle bisector | Construct triangles from given information (R) | Identify congruent figures |
| Week 7 | Explore congruent triangles | Identify congruent triangles | Purple Assessment | Feedback |