My Maths Progress in Year 9

Autumn Block 1
Straight Line Graphs

- Draw lines parallel to the axes (R)
- Use table of values (R)
- Compare gradients
- Compare Intercepts
- Understand and use y=mx+c
- Write an equation in the form y=mx+c (H)
- Find the equation of a line from a graph.
- Interpret gradient and intercepts of real-life graphs.
- Model real-life graphs involving inverse proportion (H).
- Explore perpendicular lines (H)

Spring Block 1
Numbers

- Integers, real and rational numbers.
- Understand and use Surds (H)
- Work with directed numbers (R)
- Solve problems with integers.
- Solve problems with decimals.
- HCF and LCM (R)
- Adding and subtracting fractions (R)
- Multiplying and dividing fractions (R)
- Solving problems with fractions (R)
- Numbers in standard form (R)

Summer Block 1
Enlargement and 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 (H).
- Work out missing sides and angles in a pair of given similar shapes.
- Solve problems with similar triangles (H).
- Explore ratios in right-angled triangles (H).

My target is:

START

FINISH

AUTUMN TERM GRADE:

SPRING TERM GRADE:

SUMMER TERM GRADE:

Autumn Block 2
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.
- Solve equations with inequalities in context.
- Substituting into formulae and equations.
- Rearrange formulae (one step).
- Rearrange formulae (two step).
- Rearrange complex formulae including brackets and squares (H)

Autumn Block 5
Constructions and Congruency

- Draw and measure angles (R)
- Construct and interpret scale drawings (R)
- Locus distance from a point.
- Locus 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 (R)
- Identify congruent figures.
- Explore congruent triangles.
- Identify congruent triangles.

Spring Block 2
Using Percentages

- Use the equivalence of fractions, decimals and percentages (R)
- Calculate percentage increase and decrease (R)
- Express 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).

Spring Block 6
Pythagoras' Theorem

- Squares and square roots (R).
- 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 axes.
- Explore proofs of Pythagoras' theorem.
- Use Pythagoras' theorem in 3D shapes (H).

Summer Block 2
Solving ratio and proportion problems.

- Solve problems with direct proportion (R)
- Direct proportion and conversion graphs (R)
- Solve problems with inverse proportion.
- Graphs of inverse relationships (H).
- Solve ratio problems given the whole or a part (R)
- Solve best buy problems.
- Solve problems involving ratio and algebra (H)

Summer Block 5
Algebraic Representation

- Draw and interpret quadratic graphs.
- Interpret graphs, including reciprocal and piece-wise.
- Investigate graphs of simultaneous equations (H)
- Represent inequalities.

Autumn Block 3
Testing Conjectures

- Factors, multiples and primes (R)
- True or False?
- Always, sometimes, never true.
- Show that...
- Conjectures on number.
- Expand a pair of binomials.
- Conjectures with algebra.
- Explore the 100 grid.
- Expand three binomials (H)

Summer Block 3
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.

Autumn Block 4
Three Dimensional Shapes

- Know names of 2D and 3D shapes.
- Recognise Prisms.
- Accurate drawings of nets of cuboids and other 3D shapes.
- Sketch and recognise nets of cuboids and other 3D shapes.
- Plans and elevations.
- Find the area of 2D 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 3D shapes - prisms and cylinders.
- Explore the volumes of cones, pyramids and Spheres (H)

Spring Block 3
Math and Money

- Solve problems with bills and bank statements.
- Calculate simple interest.
- Calculate compound interest.
- Solve problems with Value Added Tax.
- Solve problems with exchange rates.
- Solve unit pricing problems.

Spring Block 5
Rotation and Translation

- Identify the order of rotational symmetry of a shape.
- Compare and contrast rotational symmetry with line 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 (H).

Summer Block 4
Probability

- Single event probability (R)
- Relative frequency – including convergence.
- Expected outcomes.
- Independent events.
- Use tree diagrams (H)
- Use tree diagrams to solve without replacement problems (H)
- Use diagrams to work out probabilities.

Spring Block 4
Deduction

- Angles in parallel lines (R)
- Solve angle problems using chains of reasoning.
- Angle problems with algebra.
- Conjectures with angles.
- Conjectures with shapes.
- Link constructions and geometrical reasoning (H).

White Rose Maths