



Subject: Maths

Year 8

Overview

In the Year 8 curriculum students study topics from four key strands of mathematics: Number, Algebra, Geometry and Ratio & Proportion. Each strand builds on their prior learning from Year 7 and the primary curriculum. We focus on developing knowledge and skills in each of the four strands which students will then build on to solve problems and exhibit their mathematical reasoning.

Autumn

Autumn Term

Standard Form

- Investigate positive powers of 10
- Standard form with positive indices
- Investigate negative powers of 10
- Use standard form with negative indices
- Compare and order numbers in standard form
- Mentally calculate in standard form
- Add and subtract numbers in standard form
- Multiply and divide numbers in standard form
- Use a calculator to work out numbers in standard form

Graphs

- Graphs from linear equations
- Gradient of a straight line
- Correlation
- Scatter graphs and correlation
- Creating scatter graphs
- Congruence and Scaling
- Congruent shapes
- Enlargements
- Shape and ratio

Manipulating Algebraic Expressions

- Algebraic notation
- Like terms
- Expanding brackets
- Using index notation

Working with Fractions

- Adding and subtracting fractions
- Multiplying fractions
- Multiplying mixed numbers
- Dividing fractions

Circles

- Parts of a circle
- Formula for the circumference of a circle
- Formula for area of a circle

Finding Probabilities

- Using probability scales
- Mutually exclusive outcomes
- Using sample spaces to calculate probabilities

Assessment:

Formative assessment is ongoing in the classroom: targeted questions, 'show me' on a whiteboard, teacher monitoring

Every unit will have a short 'low-stakes' assessment task at the end to check pupils' knowledge. These will involve a selection of test-style questions and records are kept by the class teacher.

An end of term assessment based on the topics covered throughout the term.

Spring Term Percentage Changes - Percentage increases and decreases - Using a multiplier - Calculating a percentage change 3D Shapes - Name and draw 3D shapes - Understand the properties of 3D shapes - Use nets to construct 3D shapes - Find the surface area of cubes and cuboids - Find the surface volume of cubes and cuboids Linear Graph - Graphs from formulae - Graphs of $x=a$, $y=b$, $y=x$ and $y=-x$ - Graphs in the form $x+y=a$ - Graphs from linear equations - Gradient of a straight line $y=mx+c$ - Finding the midpoint - Perpendicular lines - Graphs from quadratic equations Transformations and Symmetry - Translations - Reflections - Rotations Statistical Diagrams - Draw pie charts - Interpret pie charts - Draw line graphs - Interpret line graphs - Draw stem-and-leaf diagrams - Interpret stem-and-leaf diagrams Find averages from diagrams	Assessment: Formative assessment is ongoing in the classroom: targeted questions, 'show me' on a whiteboard, teacher monitoring Every unit will have a short 'low-stakes' assessment task at the end to check pupils' knowledge. These will involve a selection of test-style questions and records are kept by the class teacher. An end of term assessment based on the topics covered throughout the term.
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Summer Term Prisms and Cylinders • Metric units for area and volume • Volume of a prism • Surface area of a prism • Volume of a cylinder • Surface area of a cylinder Compound Units • Speed • More about proportion • Unit costs Solving Equations Graphically • Graphs from equations of the form $ax \pm by = c$ • Graphs from quadratic equations • Solving quadratic equations by drawing graphs Pythagoras' Theorem • Calculating the length of the hypotenuse • Calculating the length of a shorter side • Using Pythagoras' theorem to solve problems • Graphs from quadratic equations • Solving quadratic equations by drawing graphs Pythagoras' Theorem • Calculating the length of the hypotenuse • Calculating the length of a shorter side • Using Pythagoras' theorem to solve problems Working with Decimals • Negative powers of 10 • Standard form • Rounding appropriately • Mental calculations • Solving problems Manipulations Brackets • More about brackets • Factorising expressions containing powers • Expanding the product of two brackets Trigonometric Ratios • Finding trigonometric ratios of angles • Using trigonometric ratios to find the size of angles • Using trigonometric to find lengths of sides	Assessment: Formative assessment is ongoing in the classroom: targeted questions, 'show me' on a whiteboard, teacher monitoring Every unit will have a short 'low-stakes' assessment task at the end to check pupils' knowledge. These will involve a selection of test-style questions and records are kept by the class teacher. An end of year maths assessment written by Redborne Upper school. This test is used for setting at Redborne. GL Exit test.
Useful resources for supporting your child at home: • Videos on Century (https://www.century.tech) • Videos on Corbett Maths (Videos and Worksheets – www.corbettmaths.com) • CGP KS3 revision guides/work books	Homework: • Homework will be set once a week