



Mathematics is an interconnected subject in which students need to be able to move fluently between representations of mathematical ideas. The programme of study is organised into apparently distinct domains, but students should build on key stage 3 and connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge in science, geography, computing and other subjects.

The curriculum is taught through the mathematical strands of: Number and Ratio, Algebra, Geometry and Measures, Statistics and Probability

[illegible]



# St Mary's CE High School Curriculum Map 2023-24

## Mathematics Year 10 foundation tier

|  |  |   |   |  |   |   |
|--|--|---|---|--|---|---|
| <i>Procedural Knowledge – ‘Know How’</i> | <p>Solve complex linear equations</p> <p>Rearrange formula</p> <p>Simplify the sum of algebraic fractions in simple cases</p> <p>Solve linear simultaneous equations</p> | <p>Revisit converting between fraction, decimals and percentages</p> <p>Recap manipulating fractions</p> <p>Recap finding percentages of amounts</p> <p>Find the value after a percentage in/decrease</p> <p>Find the original value given a in/decreased value</p> | <p>Use trigonometry in 2D right angled triangles</p> <p>Use trigonometry without the aid of a calculator</p> <p>Solve problems involving bearings</p> <p>Construct triangles using a pair of compasses</p> <p>Solve loci problems</p> | <p>Draw the net of a prism</p> <p>Use the language of 3d shapes</p> <p>Find the surface area of prisms</p> <p>Find the surface area of simple non-prisms</p> <p>Find the volume of prisms and cylinders</p> <p>Convert between units of area and volume.</p> | <p>Revisit finding averages from lists</p> <p>Find the average from a frequency table</p> <p>Find the average from a grouped frequency table</p> <p>Extend trigonometry use from earlier in the year</p> <p>Draw and interpret real life graphs</p> | <p>Apply the four transformations to shapes</p> <p>Find missing angles or missing lengths using trigonometry</p> <p>Interpret and answer questions by reading from real life graphs</p> <p>Use speed distance time graphs to answer questions</p> |
| <b>Key Questions</b>                     | <p>How many equations do you need to solve for 2 unknown variables?</p> <p>What is the difference in solving an equation and rearranging a formula?</p>                  | <p>Can you use a diagram to show how to add fractions together?</p> <p>Can you find different ways to find percentage of amounts?</p>   | <p>How is trigonometry related to similar shapes?</p>   | <p>How does drawing the net of a shape aid finding the surface area of a shape?</p> <p>Can you show why the volume of a prism is the cross section area multiplied by the</p>  | <p>Why can we not find the exact mean average from a grouped frequency table?</p>   | <p>What does a flat line mean on a distance time graph? A speed time graph?</p> <p>What does a “upward” line mean on a distance time graph?</p>   |



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|-------------------------------------|--|--|--|--|--|--|
|                                     |  |  |  | length with the aid of a diagram?  |  |  |
| <b>Assessment</b>                   | Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.<br><br>A half termly assessment will be completed in class covering content covered this half term, and previous topics covered at St. Mary's | Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.<br><br>A half termly assessment will be completed in class covering content covered this half term, and previous topics covered at St. Mary's | Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.<br><br>A half termly assessment will be completed in class covering content covered this half term, and previous topics covered at St. Mary's | Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.<br><br>A half termly assessment will be completed in class covering content covered this half term, and previous topics covered at St. Mary's | Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.<br><br>A half termly assessment will be completed in class covering content covered this half term, and previous topics covered at St. Mary's | Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.<br><br>A half termly assessment will be completed in class covering content covered this half term, and previous topics covered at St. Mary's |
| <b>Links to careers/wider world</b> |  | Interest rates<br><br>Depreciation of value<br><br>Find an original price after a discount/price increase  | Astronomy<br><br>Orienteering<br><br>Navigation  | Planning involving capacity<br><br>e.g. car fuel tanks   | Data analytics management  | Data analytics management  |



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