

## Curriculum Related Expectations (CRE's): Maths

The below criteria are used by the department to assess students' progress, knowledge and skills throughout Year 9.

CRE Descriptor	AUT Term	SPR Term	SUM Term
<p style="text-align: center;"><b>Mastering</b></p> <p style="text-align: center;"><i>(Learner meets all expectations of Developing and securing, and is succeeding in some or all of these areas as well).</i></p>	<ul style="list-style-type: none"> <li>• Single brackets can be expanded and this skill can be integrated into solving linear equations as an additional third step.</li> <li>• Linear inequalities (including brackets) can be solved with similar confidence to linear equations.</li> <li>• Students can form and solve linear equations from diagrams.</li> <li>• Double brackets can be expanded to form quadratic expressions.</li> <li>• Students recognise parallel lines in equations.</li> <li>• Students can find the midpoint of two co-ordinates.</li> <li>• There is an understanding of what makes a graph linear and how you can tell whether a graph is linear from its equation.</li> <li>• Students are able to test conjectures</li> </ul>	<ul style="list-style-type: none"> <li>• Students have been exposed to concept of imaginary numbers.</li> <li>• Surds can be simplified.</li> <li>• The percentage change between two numbers can be found.</li> <li>• Students can work with confidence with both simple and compound interest.</li> <li>• Students can make conjectures with angles and shapes.</li> <li>• Students can translate shapes using vector notation.</li> <li>• Understand the definition of an invariant point.</li> <li>• Students can combine a series of transformations to form a new image.</li> </ul>	<ul style="list-style-type: none"> <li>• Students can discover the 'best buy' from two or more products.</li> <li>• Triple brackets can be expanded to form cubic expressions.</li> <li>• Students can use geometric reasoning to prove that two triangles are congruent.</li> <li>• Using Pythagoras' theorem, students are able to discern whether a triangle is right-angled or not.</li> </ul>
<p style="text-align: center;"><b>Securing</b></p> <p style="text-align: center;"><i>(Learner meets all expectations of Developing, and is succeeding in these some or all of these areas as well).</i></p>	<ul style="list-style-type: none"> <li>• Students are able to solve two-step linear equations confidently.</li> <li>• Single brackets can be expanded correctly.</li> <li>• Students can substitute values into linear equations.</li> <li>• Students can find the equation of a horizontal or vertical line when given a pair of co-ordinates.</li> <li>• Students can complete a table of values for a linear graph and use this information to accurately plot the graph.</li> <li>• By looking at the graph the equation of the line in the form <math>y=mx+c</math> can be discerned.</li> <li>• Students understand the significance of <math>m</math> in <math>y=mx+c</math>.</li> <li>• Students can reason whether conjectures are true or false and support this with evidence. Students can test conjectures by searching for counterexamples.</li> </ul>	<ul style="list-style-type: none"> <li>• The concepts of rational and irrational numbers are understood, and examples can be provided for both.</li> <li>• Students can perform operations with decimals with similar confidence to perming operations with integers.</li> <li>• The difference between Highest Common Factor and Lowest Common Multiple is understood.</li> <li>• Students are able to work with numbers in standard form.</li> <li>• Solve mathematical problems that relate to real-life financial scenarios, for example working with bills and bank statements.</li> <li>• Use exchange rates to convert between two or more different currencies.</li> <li>• Solve angle problems involving algebra. 2D shapes can be rotated around specific co-ordinates.</li> </ul>	<ul style="list-style-type: none"> <li>• Students can find the order of rotational symmetry of a given 2D shape.</li> <li>• Students can describe the effects of vector translations.</li> <li>• Double brackets can be expanded.</li> <li>• Students can identify congruent shapes.</li> <li>• Students can use reverse percentages to calculate the original value before a percentage reduction has occurred.</li> <li>• Students are able to calculate the volume of a cylinder.</li> <li>• The surface area of common prisms can be calculated.</li> <li>• Triangles can be accurately constructed when given the lengths of all three sides.</li> </ul>

## Developing

*(Learner is succeeding in some or all of these areas).*

- Students can solve one-step linear equations.
- Students understand the rules governing different letters and indexes in algebraic simplification.
- Students are aware that addition is commutative.
- Co-ordinates can be plotted accurately.
- Students can plot horizontal and vertical lines on a set of axes.
- Prime numbers can be identified.
- Students can perform basic operations to show that two fractions/decimals/percentages are equal to each other.

- Students know the definition of an integer.
- Students work with confidence with directed number.
- The difference between a factor and a multiple is known.
- Students can solve basic percentage problems without the use of a calculator.
- Without a centre of rotation, students are able to rotate shapes.
- Students can identify the hypotenuse of a right-angled triangle.

- Students can solve basic problems involving operations from literacy-based questions.
- The names of basic 2D and 3D shapes are known.
- Students understand the properties of 3D shapes.
- Students know how to order numbers, including negatives and decimals.
- Fractions of numbers can be calculated accurately.
- Students can reflect shapes.
- Basic angle rules can be recalled, including the rules that govern angles in parallel lines.
- Students can substitute values into linear equations.
- Students can complete a table of values for a linear graph and use this information to accurately plot the graph.
- Students can find the area of common 2D shapes.
- Money can be shared in specified ratios.
- Numbers can be increased by simple percentages.
- Students can calculate the volume of cubes and cuboids.