

Assessment Cycle	Topic/Unit Title – <i>Big Question</i>	Rationale/Skill Development	Link to Assessment Objectives/Progression Scales Skills  The following areas will be assessed:
1	What is the importance of number?	Students will get a chance to apply what they understand of mathematics from primary school, building on foundations of number in further depth to grow in confidence and fluency, providing opportunities to stretch and challenge all students at their appropriate level.	<ul style="list-style-type: none"> <li>• Understand and use place value for decimals, measures and integers of any size.</li> <li>• Round numbers and measures to an appropriate degree of accuracy and use approximation through rounding to estimate answers.</li> <li>• Order positive and negative integers and decimals; use the number line for ordering the real numbers; use the symbols =, ≠, &lt;, &gt;, ≤, ≥.</li> <li>• Use the four operations, including formal written methods, applied to integers and decimals, both positive and negative.</li> <li>• Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals.</li> <li>• Recognise and use relationships between operations including inverse operations.</li> <li>• Use prime numbers, factors, and multiples.</li> </ul>
2	How big is infinity?	Students will build on their understanding of our number system. They will also gain a greater appreciation for the concept of different types of infinity.	<ul style="list-style-type: none"> <li>• Appreciate the infinite nature of the sets of integers, real and rational numbers.</li> <li>• Use integer powers and real roots (square, cube etc.), recognise powers of 2-5 and distinguish exact roots and decimal approximations.</li> <li>• Use common factors, common multiples, highest common factor, lowest common multiple, prime factorisation.</li> <li>• Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.</li> </ul>
3	Do we need all of fractions, decimals, and percentages?	Students will continue to build on their understanding of our number system to explore more deeply how fractions, decimals and percentage are connected and how they can be applied in a variety of contexts.	<ul style="list-style-type: none"> <li>• Work interchangeably with terminating decimals and corresponding fractions e.g. <math>3.5 = \frac{7}{2}</math> and <math>0.375 = \frac{3}{8}</math>.</li> <li>• Percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100%.</li> <li>• Order fractions; use the number line as a model for ordering of the real number; use the symbols =, ≠, &lt;, &gt;, ≤, ≥.</li> <li>• Interpret fractions and percentages as operators and use the four operations applied to fractions.</li> <li>• Percentage change problems including percentage increase, decrease and original value problems and simple interest in financial mathematics.</li> </ul>
4	How can we make sharing fair?	Students will use their deep understanding of number, particularly multiplicative relationships and their use of FDP to apply their knowledge to ratio problems	<ul style="list-style-type: none"> <li>• Change freely between related standard units (for example time, length, area, volume/capacity, mass).</li> <li>• Use scale factors, scale diagrams and maps.</li> <li>• Draw and measure line segments and angles in geometric figures, including interpreting scale drawings.</li> <li>• Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1.</li> <li>• Use ratio notation, including reduction to simplest form.</li> <li>• Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio.</li> <li>• Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction.</li> <li>• Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions.</li> <li>• Solve problems involving direct and inverse proportion, [including graphical and algebraic representations – this will be taught in Year 8].</li> <li>• Use compound units such as speed, unit pricing and density to solve problems.</li> </ul>