**Curriculum Related Expectations**

HT1: Year 8 Proportional reasoning

**Students can define the following terms:**

|  |  |  |
| --- | --- | --- |
| approximation | axes | commutative |
| conversion | currency | denominator |
| dividend | divisor | equal parts |
| equivalent  | factors | non unit fraction |
| numerator | order | part |
| proportion | quotient | ratio |
| scale | scale factor | unit fraction |
| variable | whole |  |

**Students know:**

* the meaning of ratio and the various models that can be used to represent ratios
* how ratio can be used to share values given the whole or one of the parts and how representations such as bar models can support with this when moving into problem solving
* how to explore links between ratio and fractions and the use of equivalence to simplify
* the meaning of ratio and scaling and how this links to direct proportion
* about conversion graphs and how this relates to real life such as currency
* how proportion and scale link to maps, scales and scale factors
* how to multiply and divide fractions with an understanding of reciprocal

**Students can:**

* make connections between number relationships, and their algebraic and graphical representations
* use scale factors, scale diagrams and maps
* understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction
* 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
* solve problems involving direct and inverse proportion
* extend and formalise their knowledge of ratio and proportion in working with measures and in formulating proportional relations algebraically
* interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning
* use scale factors, scale diagram and maps
* solve problems involving direct and inverse proportion
* select and use appropriate calculation strategies to solve increasingly complex problems
* use 4 operations, including formal written methods for proper, improper and mixed number fractions