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**Knowledge Rich Curriculum Plan**

Year 10 Intermediate Ratio and Proportion



| **Lesson/Learning Sequence** | **Intended Knowledge:**  *Students will know that…* | **Tiered Vocabulary** | **Prior Knowledge:**  *In order to know this, students need to already know that…* | **Assessment** |
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| **To learn how to share in a ratio** | * Students will know how to share a quantity into a two-part given ratio. * Students will know how to share a quantity into a three-part given ratio. * Students will know how to find quantities within a ratio when the difference between two parts is given. * Students will know how to solve ratio problems with context. |  | * Students need to know how to use the bus stop method * Students will know how to simplify ratios in their simplest form. * Students will know how to simplify ratios in the form of 1 : n or n : 1. |  |
| **To learn how to solve harder ratio problems.** | * Students will know how to combine two ratios in the form a:b, b:c etc. and use them for comparison between three parts. * Students will know how to solve problems involving converting ratio into fractions |  | * Students will know how to combine ratios and use them for comparison between three parts. |  |
| **To learn how to identify the best buy** | * Students will know how to find the best buy by either finding the value of one item for each option or finding the value of a common multiple of each item. * Students will know how to find the best buy in more complex scenarios where percentage discounts or fractions are also involved | **Value** – how much money something is worth | * Students will need to know how to find the lowest common multiple of two numbers |  |
| **To learn how to convert between different currencies** | * Students will know how to convert between different currencies. | **Currency** – a system of money in general use in a particular country.  **Convert** –change/ swap to | * Students will need to know how to multiply decimals * Students will need to know how to divide decimals |  |
| **To learn how to solve real life problems involving direct proportion and inverse proportion** | * Students will know how to find the best buy by either finding the value of one item for each option or finding the value of a common multiple of each item. * Students will know how to find the best buy in more complex scenarios where percentage discounts or fractions are also involved * Students will know how to convert between different currencies using multiplication and division. * Students will know how to convert currencies using a conversion graph by drawing lines from a given currency on one axis to the line on the graph and then across/down to convert to the other currency * Students will know the difference between direct and inverse proportion * Students will know how to solve real life problems involving inverse proportion without using algebra (e.g. number of worker problems etc.) | **Direct Proportion –** If two things are directly proportional then if one increases, so does the other, if one decreases, then so does the other  **Value** – how much money something is worth  **Multiple** – a number that is in the given number’s multiplication tables  **Factor** – a number that will divide into the given number without leaving a remainder.  **Currency** - a system of money in general use in a particular country.  **Convert** –change/ swap to  **Inverse** – Opposite  **Inverse Proportion** – If two things are inversely proportional then as one increases the other decreases or vice versa | * Students will know how to calculate fractions of amounts * Students will know how to calculate percentages of amounts | Exam Prep 5 |
| **To learn how to solve algebraic direct proportion problems** | * Students will know how to solve algebraic direct proportion problems by writing an algebraic statement in the form y = kx before substituting in given values to find the value of k and then using the resultant formula to find further missing values. * Students will know that k is known as the constant of proportionality * Students will know how to solve algebraic direct proportion problems involving powers and roots | **Direct Proportion –** If two things are directly proportional then if one increases, so does the other, if one decreases, then so does the other  **Constant** – a quantity or parameter that does not change its value whatever the value of the variables | * Students will need to know how to substitute numbers into formulae * Students will need to know how to solve simple step equations in the form a = bx, a = bx2 etc. | Exam Prep 5 |