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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.
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| **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.
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| **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
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| **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
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| **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 |