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**Knowledge Rich Curriculum Plan**

Year 11 Foundation+ Fractions, Decimals and Percentages



| **Lesson Objective** | **Intended Knowledge:**  *Students will know that…* | **Tiered Vocabulary** | **Prior Knowledge:**  *In order to know this, students need to already know that…* | **Assessment** |
| --- | --- | --- | --- | --- |
| **To learn how to add and subtract fractions** | * Students will know how to add and subtract fractions with the same denominator * Students will know how to add and subtract proper fractions, improper fractions and mixed numbers with different denominators. Students will know how to simplify their answers and write them as mixed numbers where necessary. They will understand the importance of converting mixed numbers to improper fractions before calculating. * Students will know how to solve worded problems involving adding and subtracting fractions and mixed numbers | **Denominator –** the bottom number in a fraction  **Numerator –** the top number in a fraction  **Improper Fraction –** a fraction where the numerator is larger than the denominator  **Mixed Number –** a number consisting of an integer and a proper fraction.  **Fraction –** a way of representing the parts of a whole or collection of objects. Fractions have a numerator and denominator. | * Students need to know how to simplify fractions * Students need to know how to convert improper fractions to mixed numbers and vice versa * Students need to know how to find equivalent fractions |  |
| **To learn how to multiply and divide fractions** | * Students will know how to multiply fractions and mixed numbers. They will know how to simplify their answers and write them as mixed numbers where necessary * Students will know how to divide fractions and mixed numbers. They will know how to simplify their answers and write them as mixed numbers where necessary. They will understand the importance of converting mixed numbers to improper fractions before calculating. * Students will know how to multiply a fraction by a whole number or a whole number by a fraction * Students will know how to divide a fraction by a whole number or a whole number by a fraction |  | * Students will need to know how to simplify fractions * Students will need to know how to convert improper fractions to mixed numbers and vice versa |  |
| **To learn how to convert between fractions, decimals and percentages.** | * Students will know that to convert a fraction to a decimal you divide the numerator by the denominator. * Students will know that to convert a decimal to a percentage you multiply it by 100. * Students will know that to convert a decimal to a fraction, place the decimal number over its place value; simplify if needed. * Students will know that to convert a decimal to a percentage you multiply it by 100. * Students will know that to convert a decimal to a fraction, place the decimal number over its place value; simplify if needed. * Students will know that a percentage is a fraction in hundredths * Students will know that to convert a percentage to a decimal we divide the percentage by 100 * Students will know that to convert a percentage to a fraction we write it over 100 and then simplify the fraction | **Equivalent –** equal in value, amount, function, meaning, etc.  **Simplify –** make something simpler or easier to manage  **Decimal –** a number whose whole number part and the fractional part is separated by a decimal point  **Percentage** – a rate, number, or amount in each hundred. | * Students will need to know how to divide integers using the bus stop method. * Students will need to know how to find equivalent fractions, particularly ones with 100 as the denominator |  |
| **To learn how to calculate percentages of amounts without a calculator.** | * Students will know how to calculate any percentage of an amount without a calculator. * Students will know how to solve worded problems involving percentages of amounts including comparisons of two quantities using percentages. |  | * Students will need to know how to divide by 100, 10 and 2 |  |
| **To learn how to increase and decrease by a percentage** | * Students will know how to increase and decrease an amount of measurement by a percentage without a calculator * Students will know how to solve worded problems involving increasing and decreasing by a percentage * Students will be able to calculate simple interest | **Increase –** a rise in the size, amount, or degree of something  **Decrease –** a drop in the size, amount, or degree of something  **Interest -** a fee paid for borrowing money or other assets or an amount earned by saving money in a bank account that pays it | * Students will need to know how to calculate percentages of amounts |  |