The Sutton Academy

Knowledge Rich Curriculum Plan

Year 7 Support – Percentages

Lesson objective	Intended Knowledge:	Tiered Vocabulary	Prior Knowledge:	Steps to Success	Feedback
To learn how to convert from fractions to decimals and percentages.	• Students will know how to convert fractions to decimals with fractions such as $\frac{21}{100}$ and $\frac{3}{10}$. • Students will know how to convert fractions to percentage with fractions such as $\frac{21}{100}$ and $\frac{3}{10}$. • Students will know that the conversions of basic fractions such as $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$.	**Convert –** change a value or expression from one form to another **Percentage** – a rate, number, or amount in each hundred. **Fraction –** a way of representing the parts of a whole or collection of objects. Fractions have a numerator and denominator. **Decimal –** a number whose whole number part and the fractional part is separated by a decimal point	• Students need to know how to find equivalent fractions • Students need to know how to divide integers using short division.	**Steps to Success – Converting fractions to decimals** **Step 1:** When possible find an equivalent fraction with a denominator of 100 or 10. If this is not possible then go straight to step 2. **Step 2:** Divide the numerator by the denominator using short division if necessary. **Steps to Success – Converting fractions to percentages** **Step 1:** When possible find an equivalent fraction with a denominator of 100 – you can then write your percentage straight away as all percentages are out of 100. If this is not possible then go straight to step 2. **Step 2:** Divide the numerator by the denominator using short division if necessary. This will give you a decimal. **Step 3:** Convert the decimal into a percentage by multiplying it by 100.	
To learn how to convert from decimals to percentages and fractions.	• Students will know how to convert decimals to percentages using decimals such as 0.8, 0.45 and 0.03. • Students will know how to convert decimals to fractions with decimals such as 0.8, 0.45 and 0.03. **Opportunity for challenge:** • Students will know how to convert decimals to fractions writing their fractions in their simplest form.		• Students need to know how to multiply by powers of 10.	**Steps to Success – Converting decimals to fractions** **Step 1:** Multiply the decimal by powers of 10 to gain an integer value. **Step 2:** Place the power of 10 used as the denominator. **Steps to Success – Converting decimals to percentages** **Step 1:** All percentage are out of 100. So, multiply the decimal by 100 to turn it into a percentage.	
To learn how to convert from percentages to fractions and decimals.	• Students will know how to convert percentages to decimals with percentages such as 80%, 34% and 7%. • Students will know how to convert percentages to fractions using percentages such as 80%, 34% and 7%. **Opportunity for challenge:** • Students will know how to convert percentages to fractions writing their fractions in their simplest form.		• Students need to know how to divide by powers of 10.	**Steps to Success – Converting percentages to decimals** **Step 1:** All percentages are out of 100. So, divide the percentage by 100 to turn it into a decimal. **Steps to Success – Converting percentages to fractions** **Step 1:** All percentage are out of a hundred. So, rewrite the percentage as a fraction. **Step 2:** You may need to multiply the numerator and denominator by powers of 10 to ensure the numerator is an integer. **Step 3:** Check to see if the question asks for the fraction in its simplest form. If so, simplify the fraction.	
To learn how to calculate basic percentages of amounts. (without a calculator)	• Students will know how to calculate simple percentages of amounts without a calculator. E.g. 50%, 10% and 1% • simple scaled percentage of amounts such as 5%, 20%, 25%, 30% and 75% etc. **Opportunity for challenge:** • Students will know how to find any percentage of amounts. E.g. 31% and 87%.		• Students need to know how to divide integers using short division. • Students need to know how to divide by powers of 10.	**Steps to success- Percentages of amounts (without a calculator)** **Step 1:** Recall that percent means out of one hundred, so, when calculating a percentage of amount divide the amount by whatever you would divide 100 by to get to the given percentage. E.g. for 10% divide by 10, for 25% divide by 4, for 50% divide by 2 etc. If you can reach your percentage in one step, then you are finished. **Step 2:** If the question requires you to find a percentage which isn't easily worked out, such as 45% or 68%, you will need to work out a smaller percentage from step 1, and work your way towards the desired number. For example, 45% can be reached by finding 10% and 5%, and multiplying the 10% by 4 to get 40% and adding on the 5%.	

Lesson objective	Intended Knowledge:	Tiered Vocabulary	Prior Knowledge:	Steps to Success	Feedback
To learn how to calculate percentages of amounts using a calculator.	• Students will know how to use a calculator to convert between fractions, decimals and percentages. • Students will know how to find multipliers. • Students will know how to find the percentage of an amount using a calculator. **Opportunity for Challenge:** • Students will know how to find percentages from real life problems. • Students will know how to find multipliers., including increase and decrease.		Students need to know how to input fractions and other basic functions into a calculator.	**Steps to Success- Percentage of amount using a calculator** **Step 1:** Calculate the multiplier by converting the percentage into a decimal. **Step 2:** Multiply the multiplier by the amount given in the question. **Steps to Success – Finding a Multiplier** • To find a basic multiplier divide the percentage by 100. e.g. 50% = 50/100 = 0.5 • To find an increase multiplier add the percentage to 100 and then divide by 100 • To find a decrease multiplier subtract from 100 and then divide by 100	
To consolidate understanding of percentages.	• Students will know how to convert between FDP • Students will know how to express one number as a percentage of another. • Students will know how to calculate percentages of amounts with and without a calculator.		Students need to know how to convert FDP.	Use steps from previous lessons.	
Mini-Assessment 4 The first part of the MA is non calc the second you need a calculator.					