The Sutton Academy

Knowledge Rich Curriculum Plan

Year 7 Prime – Fractions

Lesson objective	Intended Knowledge:	Tiered Vocabulary	Prior Knowledge:	Steps to Success	Feedback
To learn how to use the find and use equivalent fractions.		**Fraction –** a way of representing the parts of a whole or collection of objects. Fractions have a numerator and denominator. **Denominator –** the bottom number in a fraction **Numerator –** the top number in a fraction **Equivalent –** equal in value, amount, function, meaning, etc.	• Students need to know how to write and represent fractions using a diagram. • Students need to write fractions based off a worded problem.	**Steps to Success – Comparing Fractions** **Step 1:** Convert the fractions to ensure they all have the same denominator, remembering that whatever you multiply the denominator by, you must also multiply the numerator by. **Step 2:** Compare the fractions, ensuring you pay close attention to what the question is asking. **Steps to Success – Ordering Fractions** **Step 1:** Convert the fractions to ensure they all have the same denominator, remembering that whatever you multiply the denominator by, you must also multiply the numerator by. **Step 2:** Put the fractions in order.	
To learn how to manipulate fractions.	• Students will know how to use diagrams to find equivalent fractions. • Students will know how to use diagrams to compare two or more fractions. • Students will know how to find equivalent fractions, including from a list. • Students will know how to compare and order fractions with different denominators. • Students will know how to compare fractions using inequality signs, <, > and = . • Students will know how to simplify a fraction to give the fraction in its simplest form.. • Students will know how to convert improper fractions to mixed numbers. • Students will know how to convert mixed numbers to improper fractions. • Students will know how to use a calculator to simplify fractions. • Students will know how to convert improper fractions to mixed numbers using a calculator. • Students will know how to convert mixed numbers to improper fractions using a calculator.	**Simplify –** make something simpler or easier to manage **Convert –** change a value or expression from one form to another **Improper Fraction –** a fraction where the numerator is larger than the denominator **Mixed Number –** a number consisting of an integer and a proper fraction.	• Students need to know how to find the HCF of two numbers.	**Steps to Success – Simplifying Fractions** **Step 1:** Write the factors of the numerator and denominator. **Step 2**: Determine the highest common factor of numerator and denominator. **Step 3**: Divide the numerator and denominator by their highest common factor (HCF). The fraction obtained is in the simplest form. **Convert an improper fraction into a mixed number - Steps to Success** **Step 1:** Divide the numerator by the denominator to find out how many whole numbers there are. **Step 2:** Find the remainder by finding out how many are left over when the product of the denominator and whole number are subtracted from the numerator. **Step 3:** Write out the remainder making sure to place it over the original denominator. **Step 4:** Simplify your fraction if possible. **Convert a mixed number into an improper fraction - Steps to Success** **Step 1:** Multiply the denominator by the whole number. **Step 2:** Then add this to the numerator to get the value of the new numerator. **Step 3:** Place your new numerator over the original denominator. **Step 4:** Simplify your fraction if possible.	
To learn how to add and subtract fractions.	• Students will know how to add fractions with different denominators. • Students will know how to subtract fractions with different denominators.		• Students need to know how to find the LCM of two numbers.	**Steps to Success – Adding and subtracting fractions** **Step 1:** In order to add and subtract fractions, you need both fractions to have a common denominator. There are two main methods for choosing a common denominator:	

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	• Students will know how to add mixed numbers. • Students will know how to subtract mixed numbers. • Students will know to write their answers in the simplest form when possible. • **Students will know how to use a calculator to add and subtract fractions, including Mixed numbers** **Opportunity for challenge:** • Students will know how to solve simple real-life problems involving adding and subtracting fractions.		• Students need to know how to convert between improper fractions and mixed numbers.	• Use the lowest common multiple (LCM) of the two denominators. • Use the product of the two denominators. **Step 2:** Once you have chosen your common denominator you have to ensure you keep the fractions equivalent to the original fractions in the question. This means that whatever you have done to the denominator of the original fraction, you must also do to the numerator. **Step 3:** You can now just need to add or subtract the two numerators. The denominator stays the same. **Step 4:** Check whether your answer can be simplified and/or converted into a mixed number.	
To learn how to multiply fractions.	• Students will know how to multiply fractions by multiplying the numerators and multiplying the denominators. • Students will know how to multiply integers by fractions. • Students will know how to multiply mixed numbers. • Students will know to write their answers in the simplest form when possible. • Students will know how to use a calculator to multiply fractions including mixed numbers. **Opportunity for challenge:** • Students will know how to solve problems involving multiplying fractions.	Integer – a whole number 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 between improper fractions and mixed numbers.	**Steps to Success - Multiplying fractions** **Step 1:** Convert any mixed numbers into improper fractions and/or write any integers as a fraction over 1. **Step 2:** Multiply the numerators. **Step 3:** Multiply the denominators. **Step 4:** Check whether your answer can be simplified and/or converted into a mixed number.	
To learn how to divide fractions.	• Students will know how to divide fractions by multiplying the first fraction with the reciprocal of the second fraction. • Students will know how to divide mixed numbers. • Students will know to write their answers in the simplest form when possible. • Students will know how to use a calculator to divide fractions, including mixed numbers. **Opportunity for challenge:** • Students will know how to solve problems involving multiplying fractions.		• Students need to know how to simplify fractions. • Students need to know how to convert between improper fractions and mixed numbers.	**Steps to Success - Dividing fractions** **Step 1:** Convert any mixed numbers into improper fractions and/or write any integers as a fraction over 1 **Step 2:** Keep the first fraction the same, change the divide into a multiply and find the reciprocal of the second fraction. **Step 3:** Multiply the numerators. **Step 4:** Multiply the denominators. **Step 5:** Check whether your answer can be simplified and/or converted into a mixed number.	
To learn how to find the fraction of a quantity.	• Students will know that to find the fraction of a quantity by dividing the quantity by the denominator and then multiplying the result by the numerator. • Students will know how to find the fraction of a quantity using simple fractions with numerators of 1. e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$	Quantity - the amount of something	• Students need to know how to multiply and divide integers.	**Steps to Success – Fractions of an Amount** **Step 1:** Divide the quantity in the question by the denominator. **Step 2:** Now multiply the answer by the numerator.	

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	• Students will know how to find the fraction of a quantity using fractions with numerators of more than 1. eg. $\frac{2}{3}$, $\frac{3}{4}$, $\frac{7}{10}$ • Students will know how to compare fractions of different quantities. • Students will know how to use a calculator to find a fraction of a quantity. **Opportunity for challenge:** • Students will know how to solve real-life problems using fractions of quantities.				
To consolidate understanding of fractions.	• Students will know how to identify the type of calculation they are completing with fractions. • Students will be able to complete calculations with fractions including the four operations.		Students will know how to simplify fractions and convert fractions.		
	Mini-Assessment 3				