



The Sutton Academy

Knowledge Rich Curriculum Plan

Year 8 Prime – Fractions



| Lesson/Learning Sequence | Intended Knowledge: <i>Students will know that...</i> | Tiered Vocabulary | Prior Knowledge: <i>In order to know this students, need to already know that...</i> | Assessment |
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| <p>To learn how to use equivalent fractions and simplify fractions.</p> | <ul style="list-style-type: none"> • Students will know how to compare fractions using inequality signs, $<$, $>$ and $=$. • Students will know that equivalent fractions are two or more fractions that are equal in size even though they have different numerators and denominators. • Students will know how to find equivalent fractions by multiplying or dividing the numerator and denominator by the same integer. • Students will know how to select an equivalent fraction from a list. • Students will know how to compare fractions with different denominators using equivalent fractions. • Students will know how to order fractions with different denominators using equivalent fractions. • Students will know that to simplify a fraction they must divide the numerator and denominator by the same integer. • Students will know that the simplest form of a fraction is found when they divide the numerator and denominator by the same integer to give the smallest possible integer values. • Students will know that any simplified version of a fraction is also an equivalent fraction. • Students will know how to simplify a fraction to give the fraction in its simplest form. | <p>Fraction – a way of representing the parts of a whole or collection of objects. Fractions have a numerator and denominator.</p> <p>Denominator – the bottom number in a fraction</p> <p>Numerator – the top number in a fraction</p> <p>Equivalent – equal in value, amount, function, meaning, etc.</p> <p>Simplify – make something simpler or easier to manage</p> <p>Convert – change a value or expression from one form to another</p> | <ul style="list-style-type: none"> • Students need to know how to compare or order fractions with the same denominator. • Students need to know how to find the LCM of two or more numbers. | <p>Mini-Assessment 3</p> |
| <p>To learn how to add and subtract fractions.</p> | <ul style="list-style-type: none"> • Students will know how to add fractions with different denominators. • Students will know how to subtract fractions with different denominators. • 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. <p>Opportunity for challenge:</p> <ul style="list-style-type: none"> • Students will know solve real-life problems involving adding and subtracting fractions. | <p>Improper Fraction – a fraction where the numerator is larger than the denominator</p> <p>Mixed Number – a number consisting of an integer and a proper fraction.</p> | <ul style="list-style-type: none"> • Students will know how to add and subtract fractions with the same denominator. • Students need to know how to simplify fractions. • Students need to know how to convert between improper fractions and mixed numbers. | <p>Mini-Assessment 3</p> |
| <p>To learn how to multiply and divide fractions.</p> | <ul style="list-style-type: none"> • 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 how to divide fractions by multiplying the first fraction with the reciprocal of the second fraction. • Students will know how to divide integers by fractions. • Students will know how to divide fractions by integers. • Students will know how to divide mixed numbers. • Students will know to write their answers in the simplest form when possible. <p>Opportunity for challenge:</p> <ul style="list-style-type: none"> • Students will know solve real-life problems involving multiplying and dividing fractions. | | <ul style="list-style-type: none"> • Students need to know how to simplify fractions. • Students need to know how to convert between improper fractions and mixed numbers. | <p>Mini-Assessment 3</p> |

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| <p>To learn how to find the fraction of a quantity and calculate fractions on a calculator.</p> | <ul style="list-style-type: none"> • 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. eg. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ • 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 solve real-life problems using fractions of quantities. • Students will know how to use a calculator to simplify fractions. • Students will know that a calculator will always give a fractional answer in its simplest form. • 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. • Students will know how to use a calculator to add fractions. • Students will know how to use a calculator to subtract fractions. • Students will know how to use a calculator to multiply fractions. • Students will know how to use a calculator to find a fraction of a quantity. • Students will know how to complete calculations with mixed numbers on a calculator. | <p>Denominator – the bottom number in a fraction</p> <p>Numerator – the top number in a fraction</p> | <ul style="list-style-type: none"> • Students need to know how to multiply and divide integers. | <p>Mini-Assessment 3</p> |
| <p>To learn how to convert between fractions, decimals and percentages.</p> | <ul style="list-style-type: none"> • Students will know that a percentage is an amount in each hundred that is used to show a proportion in relation to a whole. • Students will know that a percentage is represented by %. • Students will know that to convert a fraction to a decimal you divide the numerator by the denominator. • Students will know how to convert fractions to decimals with fractions such as $\frac{6}{25}$, $\frac{7}{10}$ and $\frac{3}{8}$. • Students will know how to convert fractions to percentages by using the fact that percentage are per hundred. • Students will know how to convert fractions to percentage with fractions such as $\frac{6}{25}$, $\frac{7}{10}$ and $\frac{3}{8}$. • Students will know that the conversions of $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$. • Students will know that to convert a decimal to a percentage you multiply it by 100. • Students will know how to convert decimals to percentages using decimals such as 0.45, 0.03 and 1.5. • Students will know that to convert a decimal to a fraction by multiplying by a power of 10 to get an integer value for the numerator and then using the same power of 10 as the value for the denominator. • Students will know how to convert decimals to fractions with decimals such as 0.45, 0.017 and 1.5. • Students will know how to convert decimals to fractions writing their fractions in their simplest form. | <p>Convert – change a value or expression from one form to another</p> <p>Percentage – a rate, number, or amount in each hundred.</p> <p>Fraction – a way of representing the parts of a whole or collection of objects. Fractions have a numerator and denominator.</p> <p>Decimal – a number whose whole number part and the fractional part is separated by a decimal point</p> | <ul style="list-style-type: none"> • Students need to know how to divide by powers of 10. • Students need to know how to find equivalent fractions. • Students need to know how to divide integers. | <p>Mini-Assessment 3</p> |

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| | <ul style="list-style-type: none"> • Students will know how to convert percentages by using the fact that percentage are per hundred. • Students will know how to convert a percentage to a decimal we divide the percentage by 100. • Students will know how to convert percentages to decimals with percentages such as 34%, 127% and 42.3%. • Students will know that to convert a percentage to a fraction we write it over 100 as all percentages are out of 100. • Students will know how to convert percentages to fractions using percentages such as 34%, 127% and 15.6%. • Students will know how to convert percentages to fractions writing their fractions in their simplest form. • Students will know how to convert between fractions, decimals and percentages with a calculator. | | | |