



The Sutton Academy

Knowledge Rich Curriculum Plan

Year 9 Core – Ratio and Proportion

Lesson Objective	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
To learn how to write, simplify and compare ratio	<ul style="list-style-type: none"> Students will know how to express a situation in a ratio Students will know how to write a ratio in its simplest form Students will know how to simplify ratios in the form of 1 : n or n : 1. Students will know how to convert fractions into ratios and vice versa. Students will know how to compare ratios by converting to fractions. 	<p>Ratio - the quantitative relation between two amounts showing the number of times one value contains or is contained within the other</p> <p>Simplify – make (something) simpler or easier to do or understand.</p>	<ul style="list-style-type: none"> Students should already know how to simplify a ratio 	Mini-Assessment 7
To learn how to share an amount into a ratio	<ul style="list-style-type: none"> Students will know how to represent a ratio using boxes or bars 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. <p>Opportunities for Challenge:</p> <ul style="list-style-type: none"> Students will know how to find quantities within a ratio when the value of one part is given. Students will know how to find quantities within a ratio when the difference between two parts is given. 	<p>Share – split up between parts</p>	<ul style="list-style-type: none"> Students need to know how to use the bus stop method 	Mini-Assessment 7
To learn how to solve ratio problems	<ul style="list-style-type: none"> Students will know how to find quantities within a ratio when the value of one part is given. Students will know how to find quantities within a ratio when the difference between two parts is given. <p>Opportunities for Challenge:</p> <ul style="list-style-type: none"> Students will know how to solve more complex, worded problems including those involving fractions, percentages, money etc. 		<ul style="list-style-type: none"> Students need to know how to simplify ratios. Students need to know how to share an amount using a ratio. 	Mini-Assessment 7
To learn how to scale up recipes	<ul style="list-style-type: none"> Students will know how to scale up simple recipes. For example, take a recipe for two people and make it for four people or take a recipe for 8 people and make it for 2 people etc. <p>Opportunities for Challenge:</p> <ul style="list-style-type: none"> Students will know how to solve more complex problems involving recipes 	<p>Proportion – a part, share, or number considered in comparative relation to a whole</p> <p>Direct Proportion – If two things are directly proportional then if one increases, so does the other, if one decreases, then so does the other</p>	<ul style="list-style-type: none"> Students will need to know how to multiply and divide 	Mini-Assessment 7
To learn how to identify best buys	<ul style="list-style-type: none"> 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. <p>Opportunities for Challenge:</p> <ul style="list-style-type: none"> Students will know how to find the best buy in more complex scenarios where percentage discounts or fractions are also involved 	<p>Value – how much money something is worth</p>	<ul style="list-style-type: none"> Students will need to know how to find the lowest common multiple of two numbers 	Mini-Assessment 7

Lesson Objective	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
To learn how to convert currencies	<ul style="list-style-type: none"> • Students will know how to convert between different currencies. 	<p>Currency – a system of money in general use in a particular country.</p> <p>Convert – change/ swap to</p>	<ul style="list-style-type: none"> • Students will need to know how to multiply and divide by decimals 	Mini-Assessment 7
To learn how to draw and use conversion graphs	<ul style="list-style-type: none"> • 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 how to convert currencies using a conversion graph for currencies that are not necessarily marked on the axes of the graph. They will know that to do this they need to find a factor of the amount that they wish to convert, read this off the graph and then scale it up to determine the conversion for the actual amount. 		<ul style="list-style-type: none"> • Students will need to know how to plot coordinates and draw straight line graphs 	Mini-Assessment 7
To learn how to solve real life problems involving inverse proportion	<ul style="list-style-type: none"> • 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.) 	<p>Inverse – Opposite</p> <p>Inverse Proportion – If two things are inversely proportional then as one increases the other decreases or vice versa</p>	<ul style="list-style-type: none"> • Students will need to know how to multiply and divide 	Mini-Assessment 7
To learn how to solve algebraic direct proportion problems	<ul style="list-style-type: none"> • 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 	<p>Direct Proportion – If two things are directly proportional then if one increases, so does the other, if one decreases, then so does the other</p> <p>Constant – a quantity or parameter that does not change its value whatever the value of the variables</p>	<ul style="list-style-type: none"> • Students will need to know how to substitute numbers into formulae • Students will need to know how to solve simple one step equations in the form $a = bx$ 	Mini-Assessment 7