



Year 9 Maths Learning Journey

Summer Term 2

Reasoning with proportion: Solving ratio and proportion problems

Core knowledge	
Solve problems with direct proportion (R) “If we know how much 2 items cost, how can I work out how much 6 items	WORKSHEET
Direct proportion and conversion graphs (R) “Does a graph showing direct proportion always have to start at the origin?”	WORKSHEET
Solve problems with inverse proportion “What is the difference between direct and inverse proportion?”	WORKSHEET
Graphs of inverse relationships (H) “Does a graph showing inverse proportion start at the origin?”	WORKSHEET
Solve ratio problems given the whole or a part (R) “How can we use a bar model to represent the problem?”	WORKSHEET
Solve best buy problems “Is the number of items directly proportional to the cost?”	WORKSHEET
Solve problems involving ratio and algebra (H) “If you know the ratio of two quantities a and b, what fractions can you write? How might a bar model help?”	WORKSHEET

Learning Checkpoints

LC Title	Completed	Dirt
Solving ratio and proportion problems		

Key Vocabulary

Constant: A number or quantity that does not vary.

Direct proportion: Two variables x and y are in direct proportion if the algebraic relation

Divide: To carry out the operation of division.

Equal parts: the whole is divided into parts of equal area.

Equivalent: equal in value, amount, function, meaning, etc.

Factor: When a number, or polynomial in algebra, can be expressed as the product of two numbers or polynomials, these are factors of the first.

Gradient: a measure of the slope of a line.

Graph: a diagram showing a relationship between variables.

Inverse: Opposite operations for example Addition is the inverse to subtraction.

Linear: In algebra, describing an expression or equation of degree one.

Multiple: For any integers a and b , a is a multiple of b if a third integer c exists so that $a = bc$

Multiplier: a quantity by which a given number (the multiplicand) is to be multiplied.

Non-linear: sequences that do not increase by a constant amount.

Product: The result of multiplying one number by another.

Proportional: corresponding in size or amount to something else:

Ratio: A part to part comparison.

Relationship: An association between two or more items.

Scale factor: For two similar geometric figures, the ratio of corresponding edge lengths.

Share: Splitting into equal parts or groups

Unit cost: tells us the cost per liter, per kilogram, per pound, etc, of what we want to buy.

Variable: A quantity that can take on a range of values, often denoted by a letter, x , y , z , t ,