Year 11 Maths Learning Journey

Spring Term 1

Reasoning: Multiplicative Reasoning

Core knowledge	Worksheet
Use scale factors (R) "If an object is enlarged, does it always get bigger?"	Worksheet
Understand direct proportion "Why aren't speed & time directly proportional to one another?"	Worksheet
Construct complex direct proportion equations (H) "When is it appropriate to use the equation a=kb?"	Worksheet
Calculate with pressure and density "how can we tell if one object will exert greater pressure than another, assuming they have the same mass?"	Worksheet
Understand inverse proportion "What is the difference between direct and inverse proportion?"	Worksheet
Construct inverse proportion equations (H) "How can we find the constant k?"	Worksheet
Ratio problems (R) "How can we find fractions and percentages using ratio?"	Worksheet

Learning Checkpoints

LC Title	Completed	Dirt
Multiplicative Reasoning		

Key Vocabulary:

Enlargement – Transformation which changes the size of a shape.

Scale Factor – Multiplicative quantity which describes an enlargement.

Similar – having dimensions in the same ratio.

Direct Proportion – Two quantities, a & b, are in direct proportion if they are in a relationship where a=kb.

Equation – Mathematical statement that two things are equal.

Origin – The point on a graph from which all axes originate.

Linear – Following a pattern of constant gradient.

Constant of Proportionality – Constant defining the relationship between two quantities which are in proportion.

Density – Ratio between mass and volume of an object.

Mass – Measure of the amount of "stuff" an object has.

Volume – Measure of the amount of space an object occupies.

Area – Measure of the amount of space a 2D plane occupies.

Pressure – Ratio between the amount of force something exerts and the cross-sectional area through which it exerts that force.

Inverse Proportion – Two quantities are in inverse proportion if one increases as the other decreases.

Fraction – Part to whole comparison of two quantities.

Percentage – Standardised comparison of two quantities out of 100.