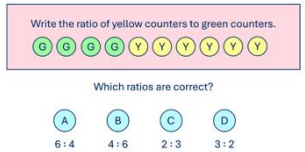
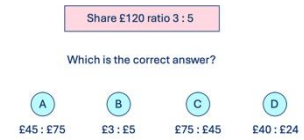
Holy Family Catholic School – Faculty of Mathematics Autumn Half-term 1 Year 8

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 1 (Thurs & Fri) - ORIENTATION & EXPECTATIONS						
Week 2 Lesson 1 To understand ratio notation. Step 1	Ratio Proportion Equal parts Bar model Slide 20	RATIO & PROPORTION	Angles Parallel Perpendicular Hours to minutes	I will be able to: • Write the number of parts in ratio notation. • To use a bar model to represent a ratio.	Slide 17 	 Write the ratio of the amount of money Alex has to the amount of money Ron has. Can you write the ratio in a different way? Slide 19
Week 2 Lesson 2 To solve ratio problems Step 2	Ratio Proportion Equal parts Whole Bar model Slide 23	RATIO & PROPORTION	Ratio Hours to minutes Name a polygon	I will be able to: • Solve a ratio problem where the whole is given. • To use a bar model to solve ratio problems.	Slide 19 	The ratio of a to b is 3 : 8 $a + b = 55$ Work out the values of a and b. Slide 21

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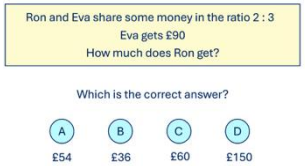
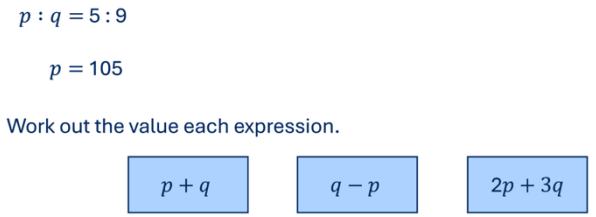
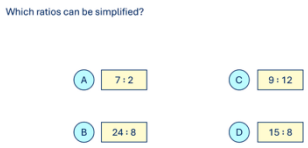
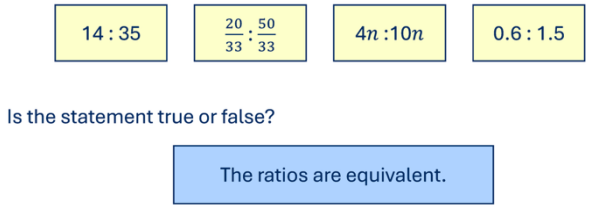
Week 2 Lesson 3 To solve ratio problems given the part or difference. Step 3 & 4	Ratio Proportion Equal parts Parts Whole Bar model Slide 18 Step 3	RATIO & PROPORTION	Share in a ratio. Angles in a triangle. Hours in a fraction of a day. Linear or non-linear sequences.	I will be able to: • To know the difference between linear and non-linear sequences. • To recognise the graphs of linear & non-linear sequences.	Slide 14 Step 3 	Slide 16 Step 3 
Week 3 Lesson 1 To simplify a ratio. Step 5 To express a ratio in the form n:1 or 1:n (extension) Step 6	Simplify Simplest form Equivalent Factor Common factor Highest common factor Slide 23	RATIO & PROPORTION	Angles on a straight line. Hours in a day. Ratio problem. Non-linear sequence.	I will be able to: • simplify a ratio. • Simplify ratios involving different units. • To express a ratio in the form n:1 or 1:n (extension)	Slide 16 	Slide 21 

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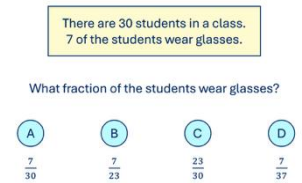
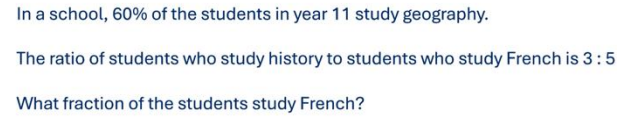
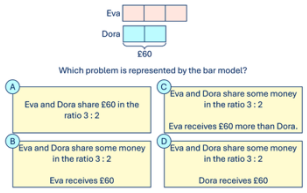
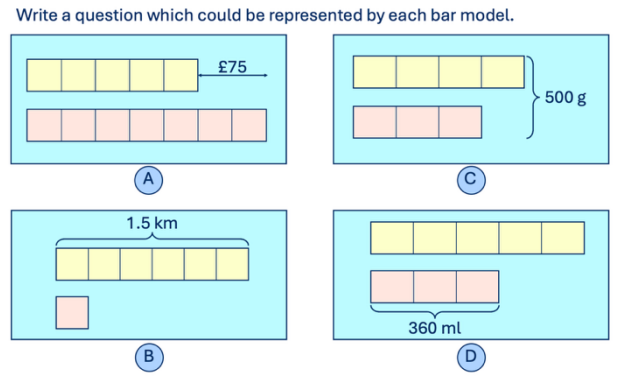
Week 3 Lesson 2 To compare ratios and fractions. Step 7	Fraction Numerator Denominator Slide 21	RATIO & PROPORTION	Function machines. Speed. Simplify ratio. Ratio notation.	I will be able to: • To compare ratios and fractions. • To convert between a ratio and a fraction and vice versa.	Slide 12 	Slide 19 
Week 3 Lesson 3 To solve problems with ratios. Step 8	Ratio Bar Model Fraction Equal parts Slide 20	RATIO & PROPORTION	Ratio to fraction. Share in a ratio. Speed. Function machine.	I will be able to: • To solve problems using ratios by setting up a bar model. • To use ratio in angle reasoning.	Slide 6 	Slide 18 

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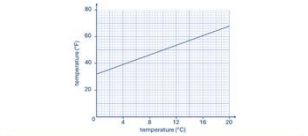
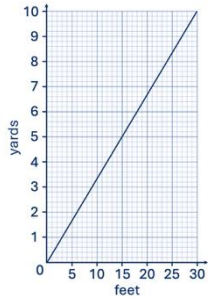
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 4 Lesson 1 To use direct proportion. Step 1	Directly proportional Scale Unit price Slide 24	RATIO & PROPORTION	Ratio problem (whole & part) Multiples Function machine,	I will be able to: • Solve problems using direct proportion.	Slide 16 20 notebooks cost £42 How much do 30 notebooks cost? Which is the correct answer? A £126 B £63 C £28	Slide 21 Here are the ingredients for making 10 cupcakes. **Cupcakes (makes 10)** 120 g butter 100 g sugar 2 eggs 130 g flour
Week 4 Lesson 2 To use conversion graphs. Step 2	Linear Axes Conversion Approximate Units Slide 18	RATIO & PROPORTION	Direct proportion Ratio problem Factors Substitution	I will be able to • Use a conversion graph to read off values.	Slide 16  10°C is approximately equal to 50°F so 20°C is approximately equal to 100°F Is the statement true or false?	Slide 24 The graph shows the conversion between feet and yards.  How many feet are there in 7.4 yards? How many feet are there in 3.8 yards?

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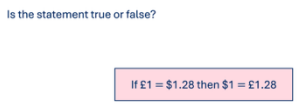
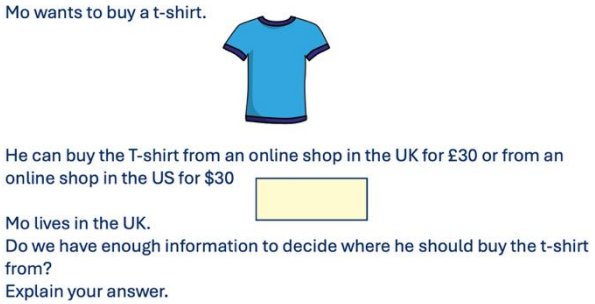
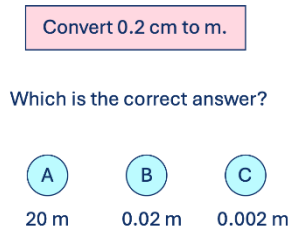
Week 4 Lesson 3 To convert between currencies. Step 3	Exchange rate Exchange Estimate Currency Convert Slide 24	RATIO & PROPORTION	Conversion graph Simplify ratio Prime numbers Function machine	I will be able to: • To use a conversion rate to convert between currencies.	Slide 5 	Slide 20 
Week 5 Lesson 1 To convert between metric units. Step 6	Metric system Milli- Centi- Kilo- Slide 26	RATIO & PROPORTION	Ratio problem Square root Substitution Replace similar shape question.	I will be able to: • To convert between metric units.	Slide 11 	Slide 17 

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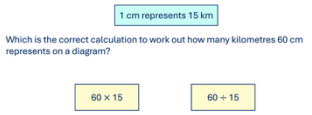
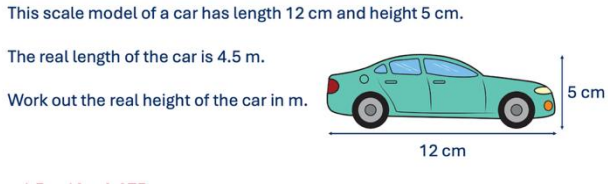
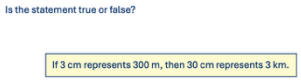
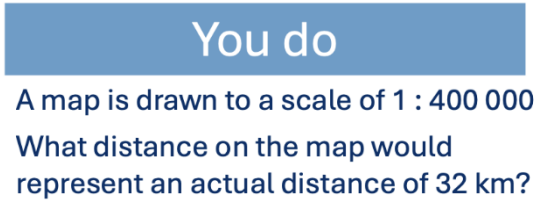
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 5 Lesson 2 To use scale drawings. Step 7	Scale Factor Scale Diagram Plan Slide 24	RATIO & PROPORTION	Metric conversion Direct proportion HCF Solve equation.	I will be able to • To use direct proportion to create a scale drawing, • To work out the scale factor.	Slide 16 	Slide 18 
Week 5 Lesson 3 To work with maps and scales. Step 8	Distance Convert Units Metric system Scale Slide 22	RATIO & PROPORTION	Metric conversion Direct proportion LCM Multiply decimal by 100.	I will be able to • To interpret maps using scales and ratios.	Slide 12 	Slide 19 

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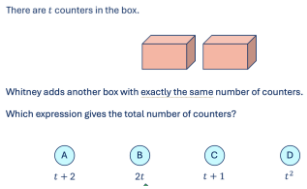
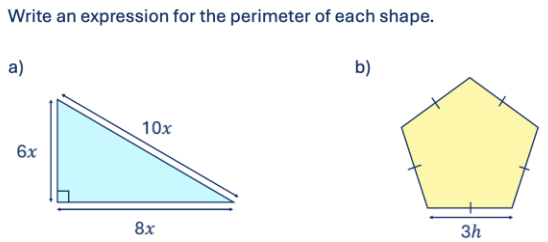
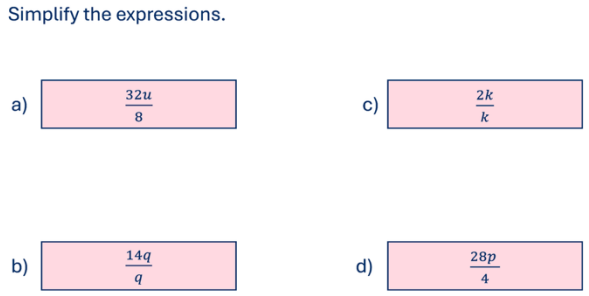
Week 6 Lesson 1 To form algebraic expressions.	Term Expression Substitute Simplify Coefficient	ALGEBRA	Map scales Currency conversion Multiples Like terms	I will be able to: • To form algebraic expressions. • To understand the meaning of an algebraic expression.	Slide 11 	Slide 19 
Week 6 Lesson 2 To simplify expressions. Step 3		ALGEBRA	Prime numbers Solve equations Scale factor	I will be able to • Identify like terms. • Simplify expressions by collecting like terms.	Slide 10 	Slide 27 

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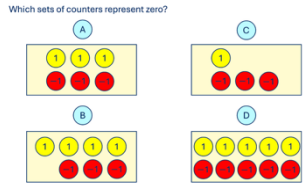
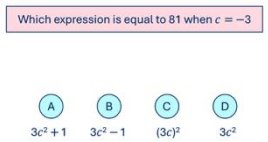
Week 6 Lesson 3 To use directed number with algebra. Step 4	Directed number Solve Simplify Expression Equation	ALGEBRA	Simplify expression Convert metric units Product of primes Solve equation.	I will be able to • Use zero pairs for directed number calculations. • Solve equations with directed numbers.	Slide 10 	Slide 10 Solve the equations. a) $-2p+9=-1$ c) $\frac{a}{4}-8=-11$ b) $\frac{b+2}{-3}=5$ d) $-5x-2=-22$
Week 7 Lesson 1 To substitute with directed number. Step 5	Directed number Substitute Expression Operation	Algebra	Simplify expression Scale on a map Cube numbers Solve 2 step equation	I will be able to • Use zero pairs for directed number calculations. • To substitute with directed numbers.	Slide 15 	Slide 17 Here is an equation. $y=2x+5$ Work out the value of y for each value of x. x | -4 | -3 | -2 | -1 | 0 y | | | | |

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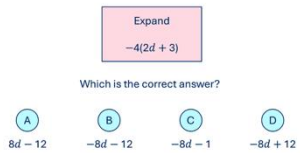
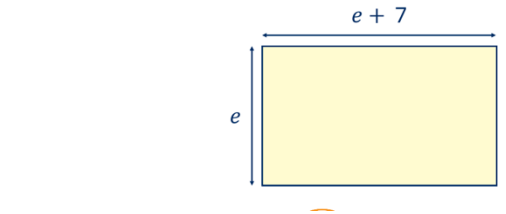
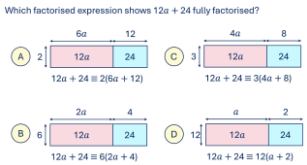
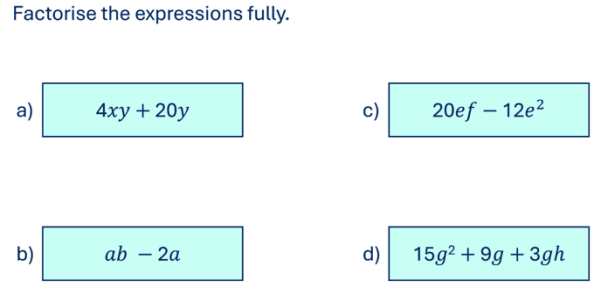
Week 7 Lesson 2 To expand single brackets	Expand Multiply out Identity Coefficient Product	ALGEBRA	Substitution Map scales Cube root Number in numerals	I will be able to • Expand single brackets.	Slide 27 	Slide 35 
Week 7 Lesson 3 To factorise into a single bracket. Step 7	Factor Common factor Highest common factor Factorise Variable	ALGEBRA	Expand bracket Write algebraic expressions HCF Intervals on a number line.	I will be able to • Identify the HCF • factorise into a single bracket by taking out the HCF.	Slide 16 	Slide 27 

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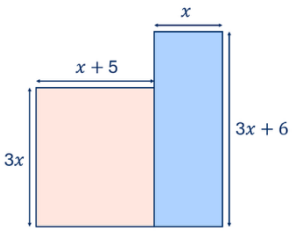
Week 8 Lesson 1 To expand brackets and simplify. Step 8 To expand double brackets Step 9 To factorise quadratic expressions. Step 10 Extension	Expression Simplify Unlike terms Like terms Expand Zero pair	ALGEBRA	Factorise Identity LCM Order Integers	I will be able to: • To expand a series of brackets • To simplify the result by collecting like terms	Slide 17 Is the statement true or false? $2(4x-3)+3(12x+2) \equiv 44x$	Slide 21 Write a simplified expression to represent the area of the compound shape. 

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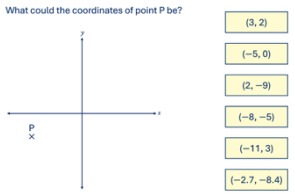
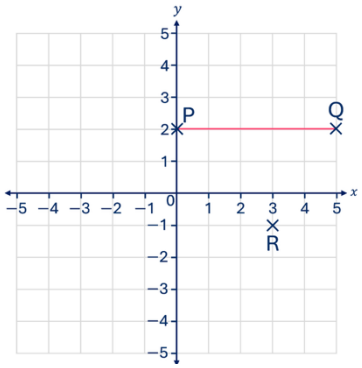
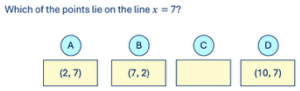
Week 8 Lesson 2 To plot and read co-ordinates. Step 1	Quadrant Axes Co-ordinates Origin	ALGEBRA	Factorise (adapt for your group) Substitute Ratio notation Order decimals	I will be able to: • To plot and read co-ordinates in all four quadrants.	Slide 20 	Slide 22 The points P, Q, R and S form a parallelogram. Write the coordinates of S. 
Week 8 Lesson 3 To identify lines parallel to the axes. Step 2	Parallel lines Coordinates Axes Equation of a line Linear	ALGEBRA	Read co-ordinates. Expand single bracket. Share the whole in a ratio. Round to the nearest 10.	I will be able to: • Identify and draw lines parallel to the axes.	Slide 14 	Slide 22 Write the equations of all the lines of symmetry of the rectangle.