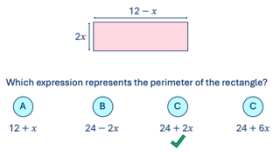
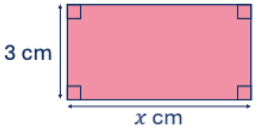
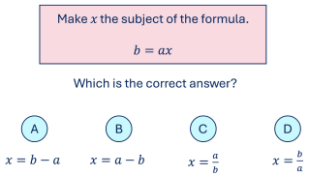
Holy Family Catholic School – Faculty of Mathematics Autumn Half-term 2 Year 9

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 9 Lesson 1 To solve problems with equations & inequalities. Step 5	Equation Inequality Unknown Coefficient Expression Slide 22	ALGEBRA	Solve double sided equation. Convert volume units. Ven diagram, Find the gradient of a line.	I will be able to: • Solve angle reasoning problems by setting up an equation. • To solve area & perimeter problems using equations.	Slide 7 	Slide 20 The area of the rectangle is equivalent to its perimeter. Work out the value or x. 
Week 9 Lesson 2 To change the subject of a formula (one-step) Step 7 Step 6 – substitute into formulae and equations optional.	Formula Subject Rearrange Inverse operation. Slide 21	ALGEBRA	Substitution Solve inequality with brackets. Identify irrational numbers. Does a point fit on a straight line?	I will be able to: • use a bar model to rearrange a 1 step formula. • rearrange a 1 step formula using inverse operations.	Slide 16 	Slide 17 Make m the subject of the formulae. a) $m + a = b$ c) $b = m - a$ b) $b = ma$ d) $\frac{m}{b} = a$

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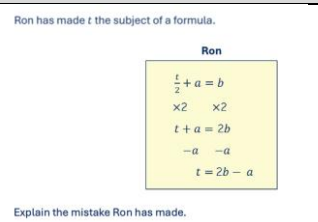
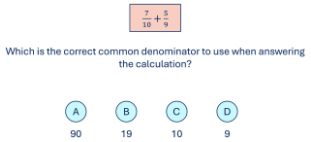
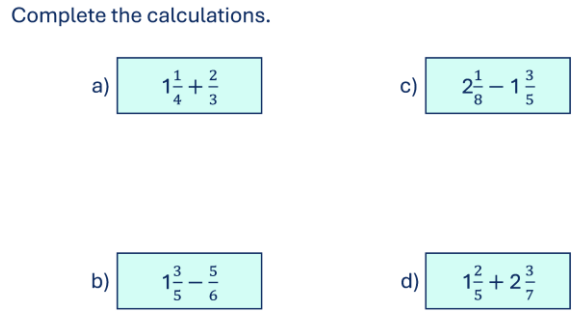
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 9 Lesson 3 To change the subject of a formula (2-step) Step 8 To change the subject of more complex formulae (extension) Step 9	Formula Subject Rearrange Inverse operation Slide 21	ALGEBRA	Rearrange 1 step formula. Solve 2 step inequality. Add surds. Does a point lie on a straight line?	I will be able to: • use a bar model to rearrange a 1 step formula. • use inverse operations to change the subject of a 2-step formula.	 Slide 15	Slide 17 Make a the subject of the formulae. a) $\frac{a}{b}+c=d$ c) $b+\frac{a}{c}=d$ b) $\frac{a}{b}-c=d$ d) $b=\frac{a}{c}-d$

Week 10 Lesson 1

Consolidation and Practise
Equations, Inequalities & Formulae or Step 9 Extension

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 10 Lesson 2 Revision / End of Chapter Assessment						
Week 10 Lesson 3 To add and subtract fractions. Step 1	Mixed number Proper fraction Improper fraction Equivalent fraction	NUMBER	Rearrange a formula Set up equation and solve. Percentage change. Nth term.	I will be able to: • add and subtract proper fractions. • add and subtract mixed numbers.	Slide 16 	Slide 23 

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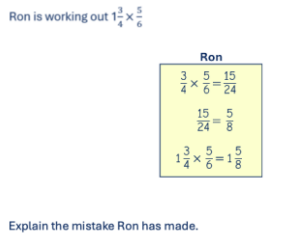
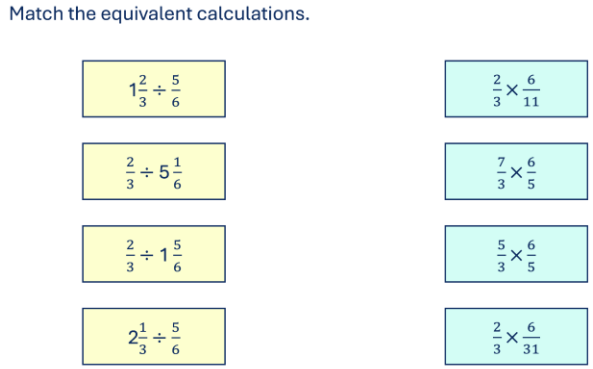
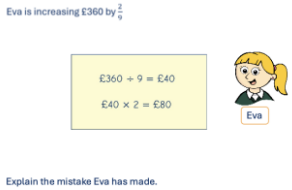
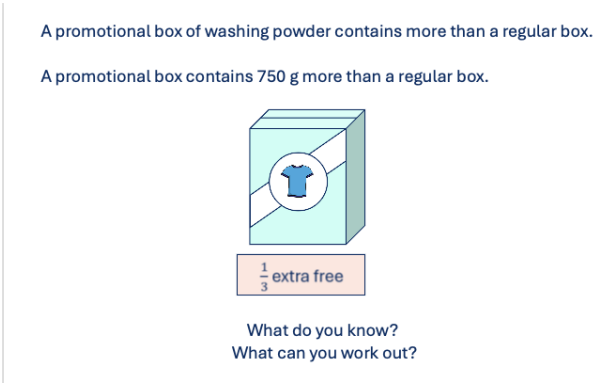
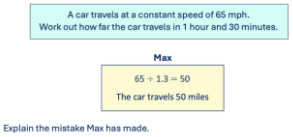
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 11 Lesson 1 To multiply and divide fractions. Step 2	Mixed number Improper fraction Reciprocal Slide 26	NUMBER	Add mixed number to proper fraction. Substitution Reverse percentage. Complete a table of values.	I will be able to: • multiply fractions. • divide fractions.	Slide 16 	Slide 21 
Week 11 Lesson 2 To find a fraction of an amount. Step 3	Numerator Denominator Whole Slide 18	NUMBER	Multiply mixed number by proper fraction. Rearrange a formula. Percentage decrease. Identify integer solutions.	I will be able to: • find a fraction of a whole. • Find the whole given the factional amount.	Slide 15 	Slide 16 

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 11 Lesson 3 Consolidation & Practise / End of Chapter Assessment						
Week 12 Lesson 1 To work with speed, distance & time. Step 1	Speed Distance Time taken Compound measure Slide 23	RATES OF CHANGE	Fraction of an amount. Change the subject. Area of a circle. Multiply proper fractions.	I will be able to: • To find speed, distance or time, given the other two. • To solve problems where a journey is split into two parts.	Slide 16 	Slide 21 Mr Fisher takes part in a long-distance race. He runs at an average speed of 10 km/h for 45 minutes to reach checkpoint 1 Between checkpoint 1 and checkpoint 2, Mr Fisher runs at an average speed of 14 km/h for 30 minutes. Work out the distance between the start and checkpoint 2

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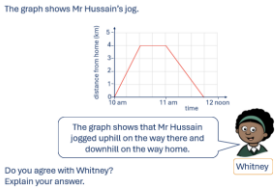
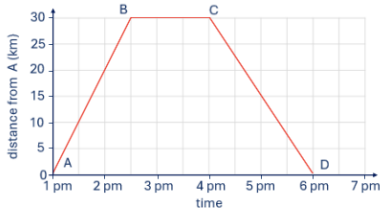
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 12 Lesson 2 To use distance-time graphs. Step 2	Gradient Stationary Speed Distance	RATES OF CHANGE	Find distance, given speed and time. Add mixed number and proper fraction. Area of a circle. Divide fractions.	I will be able to: • read and interpret distance & time from a graph. • find average speed from a DT graph.	Slide 16 	Slide 23  Work out the average speed between points A and B. Work out the average speed between points C and D.

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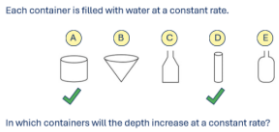
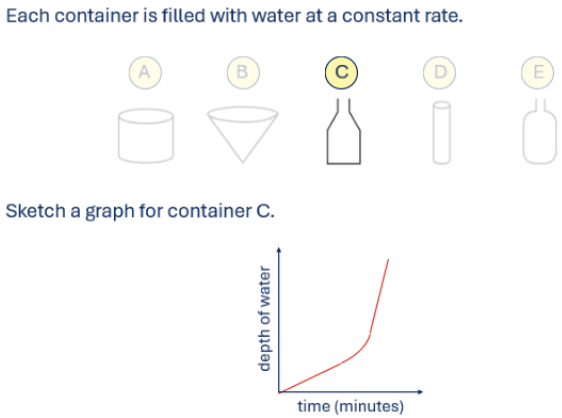
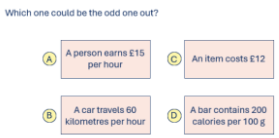
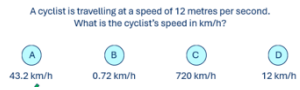
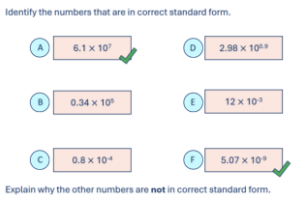
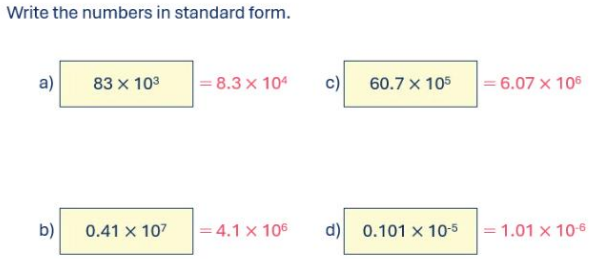
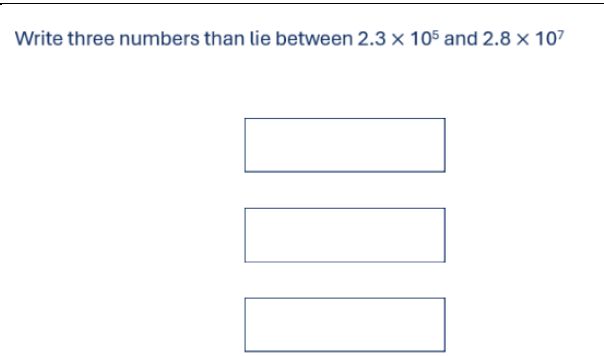
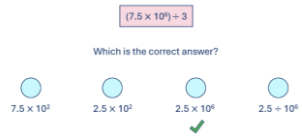
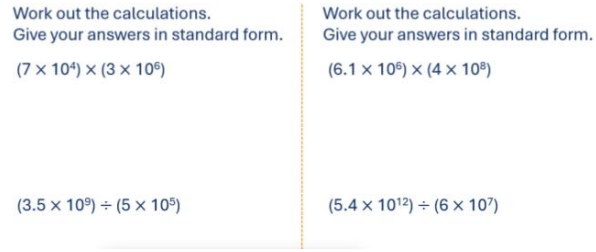
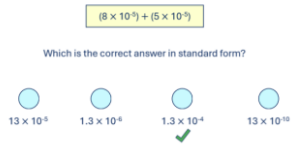
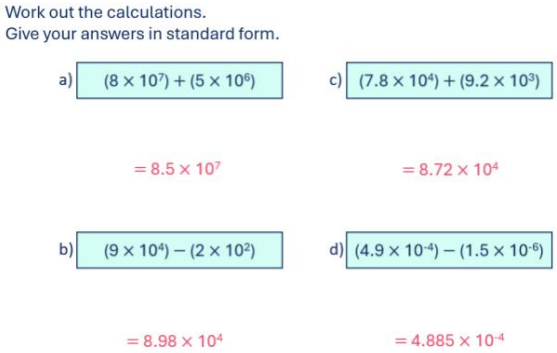
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 12 Lesson 3 To understand flow problems and their graphs. Step 3	Constant flow Flow rate Prism Volume	RATES OF CHANGE	Average speed from a DT graph. Multiply mixed number by proper fraction. Area of a quarter circle. Multiply mixed numbers.	I will be able to • Match flow rate graphs with real-life scenarios. • Sketch a flow rate graph with a scenario.	Slide 15 	Slide 18 
Week 13 Lesson 1 To understand rates of change and their units. Step 4	Unit Gradient Rates of change.	RATES OF CHANGE	Sketch a graph for the change in depth of water over time. Find a fraction of an amount.	I will be able to: • Interpret the gradient and it's meaning from a rate of change graph. • Read values from a rate	Slide 9 	Slide 20

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
			Perimeter of a quarter circle. Divide mixed numbers.	of change graph.		The cost of apples is directly proportional to their mass. A 3 kg bag of apples costs £6  What does the gradient represent?
Week 13 Lesson 2 To convert compound units (extension) Step 5 OR consolidation and practise before end of chapter assessment.	Imperial system Metric system. Compound measure.	RATES OF CHANGE	Gradient of rate of change graph. Average speed. Find the LCM of two numbers. Algebraic fractions.	I will be able to • Change between compound units e.g. speed.	Slide 18  	Slide 22 A car drives 100 kilometres in 2 hours. Work out the average speed of the car in km/h. Work out the average speed of the car in mph.

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 13 Lesson 3 Consolidation & Practise / End of Chapter Assessment						
Week 14 Lesson 1 To write numbers in standard form.	Standard form Power Index Ordinary number Base	NUMBER	Convert speed units. Find average speed. Nth term Collect like terms.	I will be able to: • Convert between ordinary large numbers and standard form. • Convert between ordinary decimals and standard form.	Slide 16 	Slide 21 

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 14 Lesson 2 To compare and order numbers in standard form.	Standard form Power Index Ordinary number Base	NUMBER	Standard form conversion. Meaning of gradient. Nth term Simplify indices.	I will be able to: • Convert standard form numbers into ordinary numbers. • Order a list of standard form numbers.	Slide 15  Slide 17  	
Week 14 Lesson 3 To multiply and divide numbers in standard form.	Standard form Index Commutative Power	NUMBER	Standard form in order. Meaning of gradient. Terms in a quadratic sequence. Simplify indices.	I will be able to: • multiply and divide numbers in standard form. • To change an answer back into	Slide 13  	Slide 26 

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
				standard form		
Week 15 Lesson 1 To add and subtract numbers in standard form.	Standard form Commutative Index Power Base	NUMBER	Multiply standard form. Speed unit conversion. Terms of quadratic sequence. Division using index rules.	I will be able to: • confidently convert standard form into ordinary numbers. • add and subtract numbers in standard form.	Slide 18 	Slide 17 
Week 15 Lesson 2 & 3 Consolidation & Practise / End of Chapter Assessment (or End of Term Assessment)						