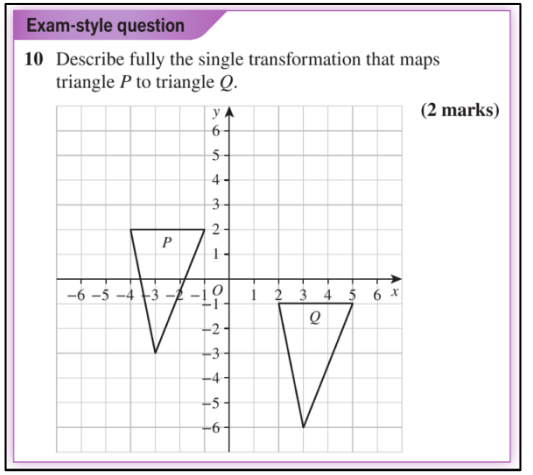
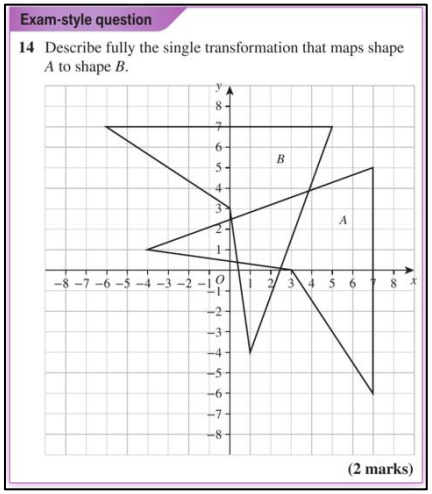
Holy Family Catholic School – Faculty of Mathematics Autumn Half-Term 1 Year 11 Foundation

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 1 Week 1 Can I translate shapes on a co-ordinate grid?	Translation Column Vector Up/down Left/Right Vertex Congruent Image Object	GEOMETRY & MEASURES	Use a column vector. Translate shapes using directions in words.	I will be able to: • Translate a shape on a coordinate grid. • Use a column vector to describe a translation.	
Lesson 2 Week 1 Can I reflect shapes on a co-ordinate grid?	Reflection Mirror line Vertical Horizontal Diagonal Perpendicular Congruent Image Object	GEOMETRY & MEASURES	Reflections on a squared grid. Identify parallel & perpendicular lines. Name common equations of straight lines eg x=4, y=7 & y=x	I will be able to: • Draw reflections on a coordinate grid. • Describe reflections on a coordinate grid.	

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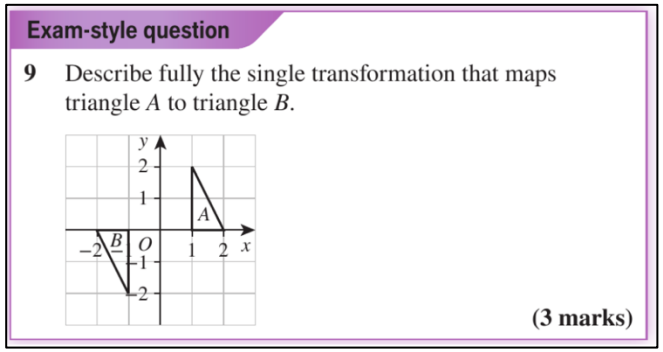
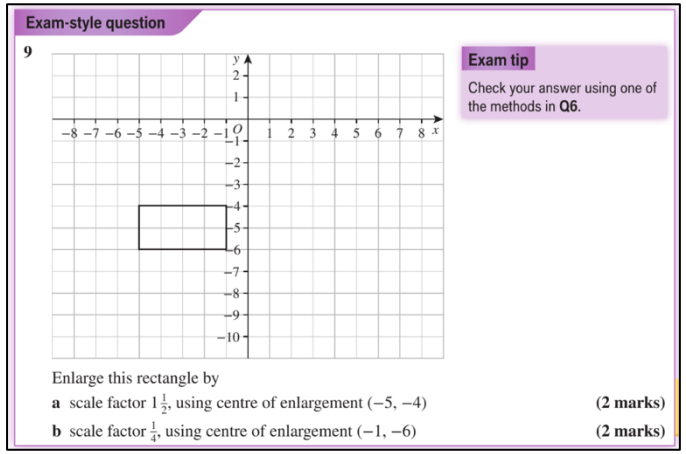
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 1 Week 2 Can I rotate shapes on a co-ordinate grid?	Rotation Clockwise Anticlockwise Angle Centre Vertex Congruent Image Object	GEOMETRY & MEASURES	Know the number of degrees in fractions of a turn. Use the words clockwise and anticlockwise. Rotate on a squared grid.	I will be able to: • Rotate a shape around a centre point on a coordinate grid. • Fully describe a rotation.	
Lesson 2 Week 2 Can I enlarge shapes on a co-ordinate grid?	Enlargement Scale Factor Centre Vertex Similar Image Object	GEOMETRY & MEASURES	Find scale factor from object to image and from image to object.	I will be able to: • Enlarge a shape by a scale factor. • Enlarge a shape using a centre of enlargement.	

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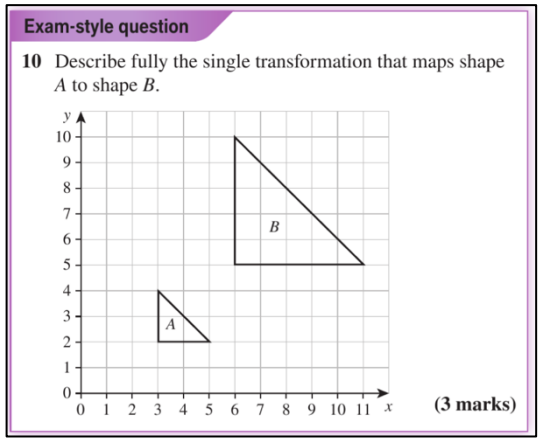
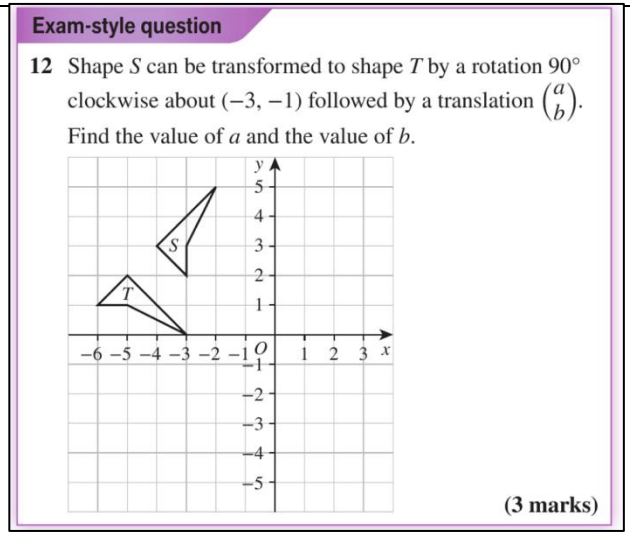
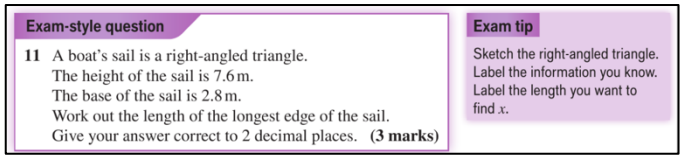
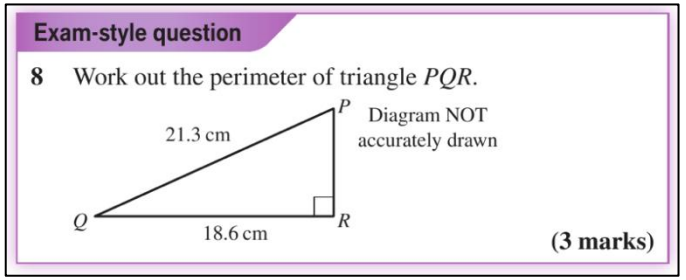
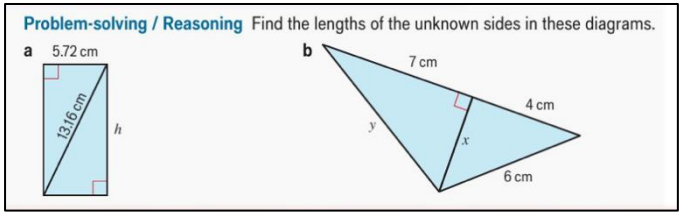
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 3 Week 2 Can I describe an enlargement of a shape on a co-ordinate grid?	Enlargement Scale Factor Centre Vertex Similar Image Object	GEOMETRY & MEASURES	Enlarge a shape on a co-ordinate grid. Find scale factor between two dimensions.	I will be able to: • Identify the scale factor of an enlargement. • Find the centre of enlargement. • Describe an enlargement.	
Lesson 1 Week 3 Can I combine transformations of a shape on a co-ordinate grid?	Rotation Enlargement Translation Reflection	GEOMETRY & MEASURES	State key information for describing transformations. Identify the type of transformation used. Understand that parallel lines have the same gradient.	I will be able to: • Transform shapes using more than one transformation. • Describe combined transformations of shapes on a grid. • Find the equations of straight-line graphs. • Sketch graphs given the values of m and c.	
Lesson 2 Week 3	UNIT TEST / Review				

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 2 Week 3 Can I use Pythagoras' theorem in a right-angled triangle?	Pythagoras Hypotenuse Right-angled triangle Square Square root	GEOMETRY & MEASURES	Squares and square roots. Substitute into and evaluate expressions. Round answers to a specified degree of accuracy.	I will be able to: • Calculate the length of the hypotenuse in a right-angled triangle. • Solve problems using Pythagoras' theorem.	
Lesson 3 Week 3 Can I use and apply Pythagoras' theorem in right-angled triangles?	Pythagoras Hypotenuse Right-angled triangle Square Square root	GEOMETRY & MEASURES	Interpret a surd expression shown on the calculator display. Identify the hypotenuse, and calculate its length.	I will be able to: • Calculate the length of a shorter side in a right-angled triangle. • Calculate the length of a line segment AB.	 

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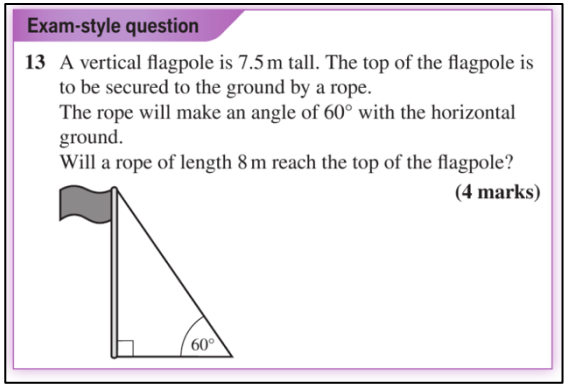
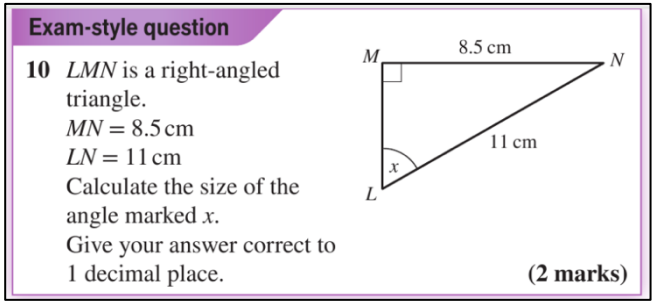
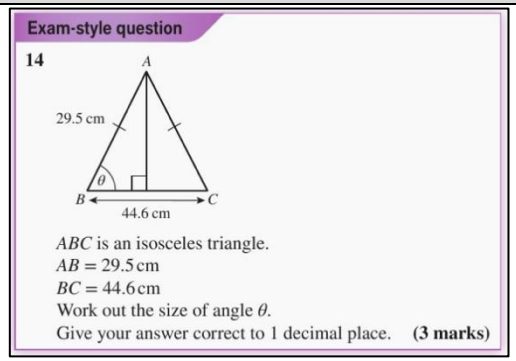
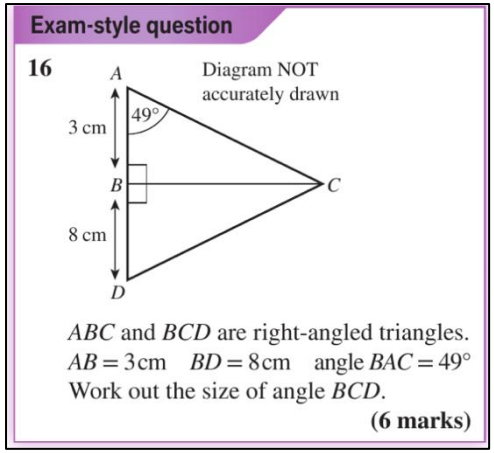
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 4 Week 3 Can I use the sine ratio in right-angled triangles?	Sine Opposite Hypotenuse Adjacent Angle Right-angle	GEOMETRY & MEASURES	Simplify fractions. Convert fractions to decimals.	I will be able to: • Use the sine ratio to calculate the length of a side in a right-angled triangle. • Use the sine ratio to solve problems.	
Lesson 1 Week 4 Can I use the sine ratio in right-angled triangles to find an angle?	Cosine Opposite Hypotenuse Adjacent Inverse Angle Right-angle	GEOMETRY & MEASURES	Calculate the sine of an angle in a right-angled triangle. Use the sine key on a calculator.	I will be able to: • Use the sine ratio to calculate an angle in a right-angled triangle. • Use the sine ratio to solve problems.	

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 2 Week 4 Can I use the cosine ratio in right-angled triangles to find angles and sides?	Cosine Opposite Hypotenuse Adjacent Inverse Angle Right-angle	GEOMETRY & MEASURES	Practise use of the sine ratio. Identify the hypotenuse and adjacent side in a right-angled triangle.	I will be able to: • Use the cosine ratio to calculate a length in a right-angled triangle. • Use the cosine ratio to calculate an angle in a right-angled triangle. • Use the cosine ratio to solve problems.	
Lesson 3 Week 4 Can I use the tangent ratio in right-angled triangles to find angles and sides?	Tangent Opposite Hypotenuse Adjacent Inverse Angle Right-angle	GEOMETRY & MEASURES	Identify the opposite and adjacent sides in right-angled triangles. Practise use of the cosine & sine ratio.	I will be able to: • Use the tangent ratio to calculate a length in a right-angled triangle. • Use the tangent ratio to calculate an angle in a right-angled triangle. • Use the tangent ratio to solve problems.	

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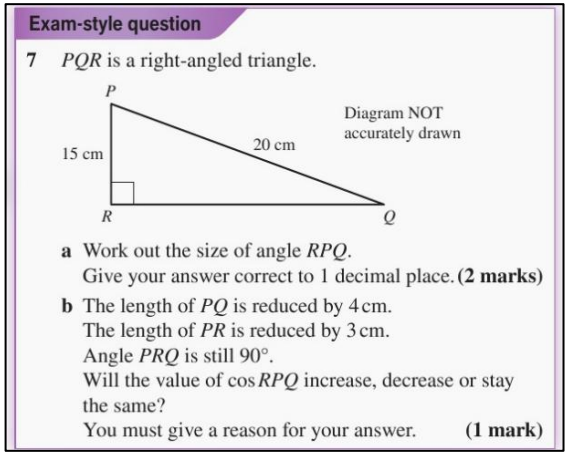
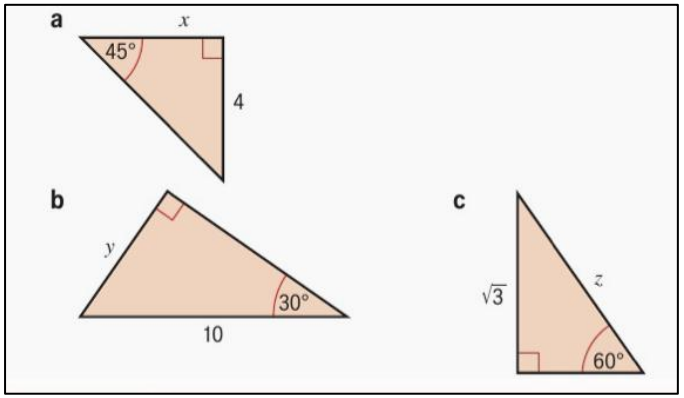
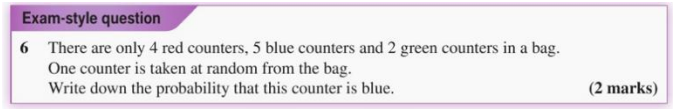
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 1 Week 5 Can I use all three ratios to solve problems in right-angled triangles?	Cosine Sine Tangent Opposite Hypotenuse Adjacent Inverse Angle Right-angle	GEOMETRY & MEASURES	Identify the sine, cosine and tangent ratios.	I will be able to: • Understand and recall trigonometric ratios in right-angled triangles. • Use trigonometric ratios to solve problems. • Know the exact values of the sine, cosine and tangent of some angles.	
Lesson 2 Week 5 Can I use all three ratios with exact values to solve problems in right-angled triangles?	Cosine Sine Tangent Opposite Hypotenuse Adjacent Inverse Angle Right-angle	GEOMETRY & MEASURES	Practise using all three ratios.	I will be able to: • Know the exact values of the sine, cosine and tangent of some angles. • Use trigonometric ratios to solve problems without a calculator.	Work out the missing lengths, using exact values. 
Lesson 3 Week 5	UNIT TEST / Review				

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 4 Week 5 Can I calculate probabilities for single events.	Probability Fraction Decimal Percentage Event Outcome Mutually exclusive Exhaustive	STATISTICS & PROBABILITY	Write probability as a fraction, a decimal and a percentage. Add and subtract fractions.	I will be able to: • Calculate simple probabilities from equally likely events. • Understand mutually exclusive and exhaustive outcomes.	 **Exam-style question** **6** There are only 4 red counters, 5 blue counters and 2 green counters in a bag. One counter is taken at random from the bag. Write down the probability that this counter is blue. **(2 marks)** **Exam-style question** **9** The probability that a new cooker has a fault is 0.025. What is the probability that a new cooker does not have a fault? **(1 mark)** **Exam-style question** **18** There are only white cubes, green cubes and yellow cubes in a box. The table shows the probability of taking at random a white cube from the box. **Colour** | white | green | yellow **Probability** | 0.6 | | The number of green cubes in the box is the same as the number of yellow cubes in the box. **a** Copy and complete the table. **(2 marks)** There are 9 white cubes in the box. **b** Work out the total number of cubes in the box. **(2 marks)**

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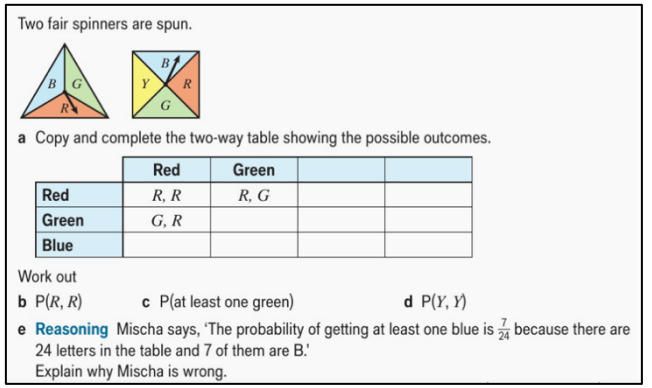
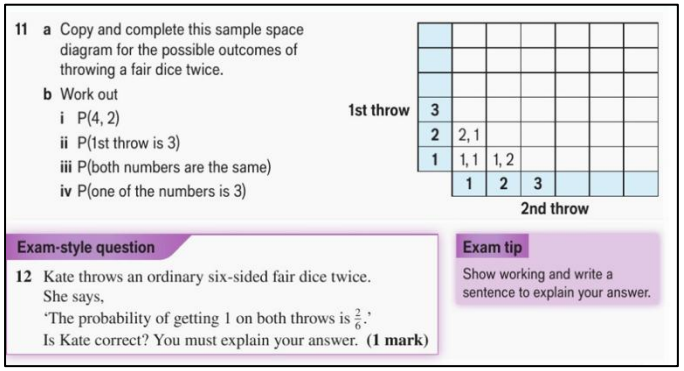
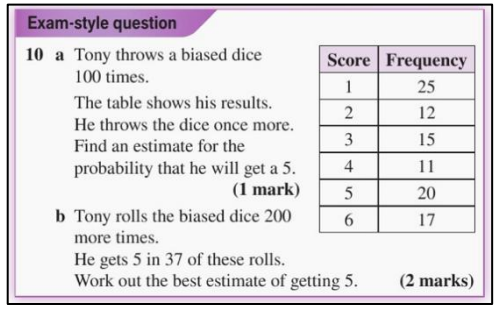
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 1 Week 6 Can I calculate probabilities for two events?	Probability Fraction Decimal Percentage Event Outcome Mutually exclusive Exhaustive	STATISTICS & PROBABILITY	List outcomes. Simplify fractions.	I will be able to: • Use two-way tables to record the outcomes from two events. • Work out probabilities from sample space diagrams.	 
Lesson 2 Week 6 Can I calculate experimental probabilities based on given data?	Probability Fraction Decimal Percentage Event Outcome Experiment Data	STATISTICS & PROBABILITY	Convert fractions, decimals and percentages. Compare fractions. Use two-way tables.	I will be able to: • Find and interpret probabilities based on experimental data. • Make predictions from experimental data.	

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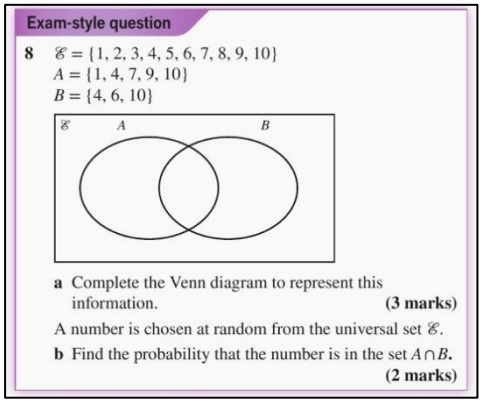
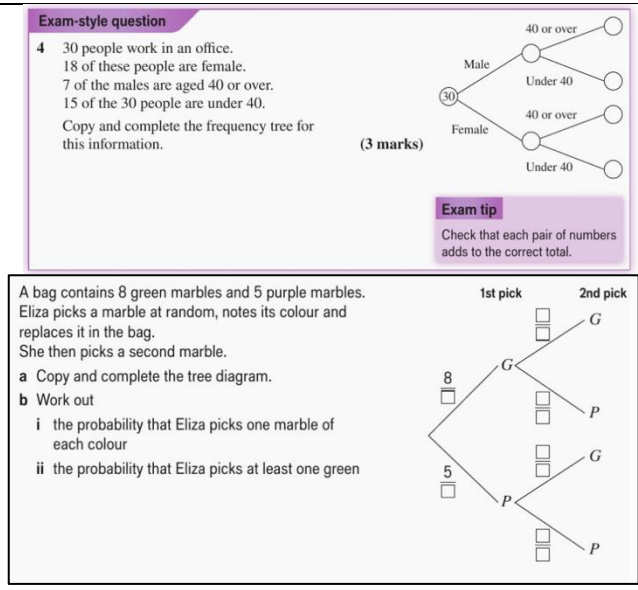
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 3 Week 6 Can I use venn diagrams to display outcomes and find probabilities?	Probability Event Outcome Venn Intersect Union	STATISTICS & PROBABILITY	Add and subtracting equivalent fractions. List primes and multiples. Calculate probabilities.	I will be able to: • Use Venn diagrams to work out probabilities. • Understand the language of sets and Venn diagrams.	
Lesson 1 Week 7 Can I use tree diagrams to calculate probabilities for two events?	Probability Event Outcome Tree And Or Independent	STATISTICS & PROBABILITY	List the possible outcomes for two events. Work out the probability of something not happening. Calculate probabilities.	I will be able to: • Use frequency trees and tree diagrams. • Work out probabilities using tree diagrams. • Understand independent events.	

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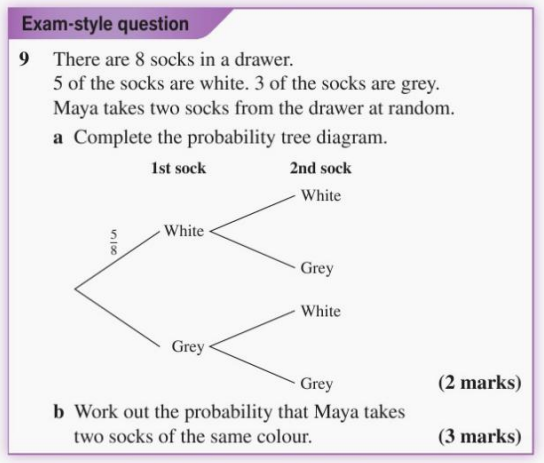
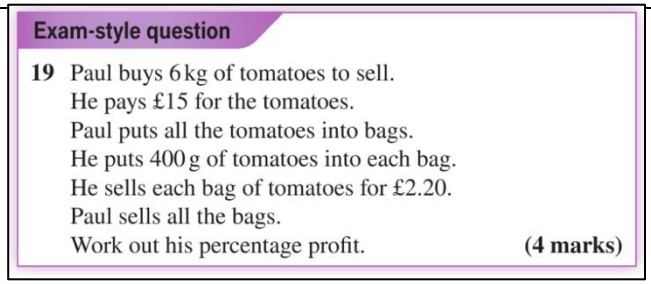
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 2 Week 7 Can I use tree diagrams for events that are not independent?	Probability Event Outcome Tree And Or Independent	STATISTICS & PROBABILITY	Calculate with and simplify fractions. Work out probabilities using tree diagrams. Complete a frequency tree.	I will be able to: • Understand when events are not independent. • Solve probability problems involving events that are not independent.	
Lesson 3 Week 7	UNIT TEST / Review				
Lesson 4 Week 7 Can I calculate a percentage change?	Percentage Profit Loss Increase Decrease Original	NUMBER	Convert percentages to decimals. Express one number as a percentage of another.	I will be able to: • Calculate a percentage profit or loss. • Express a given number as a percentage of another in more complex	

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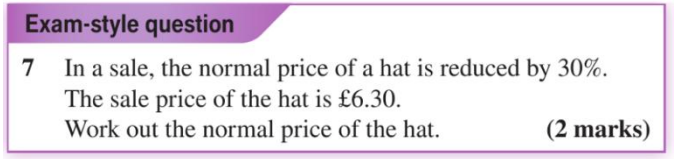
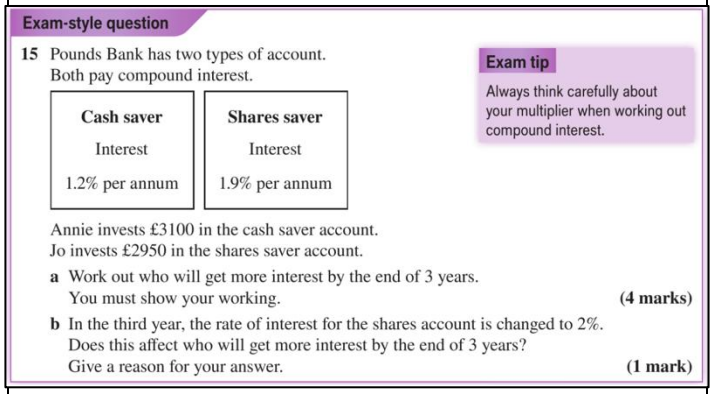
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Lesson 1 Week 8 Can I work in reverse to find the original amount after a percentage change?	Percentage Profit Loss Increase Decrease Reverse Original Multiplier	NUMBER	Work out percentage increase or decrease.	I will be able to: • Find the original amount given the final amount after a percentage increase.	
Lesson 2 Week 8 Can I use calculate a repeated percentage change?	Percentage Increase Decrease Original Multiplier	NUMBER	Write powers of numbers in index form. Convert percentages to decimals.	I will be able to: • Find an amount after repeated percentage change. • Solve growth and decay problems.	
Lesson 3 Week 8	EXAM PRACTISE / REVIEW				