

Maths curriculum map

Disciplinary knowledge (problem solving)

	Model and represent	Interpret and understand	Translate and construct
7	<ul style="list-style-type: none">Begin to model situations mathematically and express the results using a range of formal mathematical representationsUse a diagram that models the problem.	<ul style="list-style-type: none">Develop use of formal mathematical knowledge to interpret problems, identifying information relevant to the solution process.Re-state the problem in one's own words.	<ul style="list-style-type: none">Translate problems in mathematical and non-mathematical contexts into one-step and two-step processes.Construct a short chain of reasoning to solve routine problems.
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10	<ul style="list-style-type: none">Model situations mathematically and express the results using a range of formal mathematical representations.Select a diagram that models the problem.	<ul style="list-style-type: none">Interpret solutions in the context of the original problem.Interpret, and extract information from diagrams, to solve problems, including in financial contexts.	<ul style="list-style-type: none">Translate problems in mathematical and non-mathematical contexts into a <i>series</i> of multiple processes.Construct a chain of reasoning, drawing upon concepts from different areas of mathematics when necessary, to solve routine and non-routine problems.
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12	<ul style="list-style-type: none">Translate a situation in context into a mathematical model, making simplifying assumptions.Use a mathematical model with suitable inputs to engage with and explore situations.	<ul style="list-style-type: none">Interpret the outputs of a mathematical model in the context of the original situation (for a given model or a model constructed or selected by the student).	<ul style="list-style-type: none">Construct extended arguments to solve problems presented in an unstructured form, including problems in context.
13			

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	Connect	Communicate	Evaluate
7	<ul style="list-style-type: none">Make connections between number relationships and between algebraic and graphical representations.	<ul style="list-style-type: none">Communicate clear solutions, showing steps in a logical order.	<ul style="list-style-type: none">Use approximations to evaluate results obtained.
8	<ul style="list-style-type: none">Make connections between algebraic and geometrical representations.		
9	<ul style="list-style-type: none">Formulate proportional relations algebraically; make connections between algebraic and graphical representations.		
10	<ul style="list-style-type: none">Make connections between algebraic, graphical and geometrical representations.	<ul style="list-style-type: none">Communicate solutions in the context of the original problem.Use appropriate mathematical language, including relevant symbols.	<ul style="list-style-type: none">Evaluate solutions to identify how they may have been affected by assumptions made.
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12	<ul style="list-style-type: none">Understand how different areas of maths are connected; Understand progression and coherence in the subject.	<ul style="list-style-type: none">Communicate rigorous deductions, showing all logical steps without redundancy or missing steps.Use precise mathematical language, including symbols and conventional forms of presentation.	<ul style="list-style-type: none">Evaluate whether the model, including modelling assumptions, is appropriate.Evaluate, including by making reasoned estimates, the accuracy and limitations of solutions, including those obtained using numerical methods.
13			

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	Analyse
7	<ul style="list-style-type: none">Understand and analyse the concept of a mathematical problem-solving cycle, including specifying the problem, collecting information, processing, and representing information and interpreting results, which may identify the need to repeat the cycle.
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12	<ul style="list-style-type: none">Understand that many mathematical problems cannot be solved analytically, but numerical methods permit solution to a required level of accuracy.
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