

## Problem Solving Investigation Rubric - Proficiencies

Area of Proficiency	Above Expected	Expected	Below Expected
Understanding <ul style="list-style-type: none"> <li>apply the familiar to develop new ideas.</li> <li>interpret mathematical information.</li> </ul>	Participates in “what do you notice” discussion with more than one original idea	Participates in “what do you notice” discussion giving own thoughts and ideas	Participates in “what do you notice” discussion building off others’ ideas
	Develops an original maths question	Takes an idea and develop a maths question	Develops a maths question copying the style of someone else
Problem Solving <ul style="list-style-type: none"> <li>make choices, interpret, formulate, model and investigate problem situations, and communicate solutions effectively.</li> <li>design investigations and plan their approaches</li> </ul> Fluency <ul style="list-style-type: none"> <li>recognise robust ways of answering questions, when they choose appropriate methods and approximations,</li> <li>manipulate expressions and equations to find solutions.</li> </ul>	Chooses a challenging maths question to investigate	Chooses a maths question to investigate	Needs guidance to choose an appropriate maths question
	Selects appropriate strategies to investigate the problem	Selects strategies to investigate the problem	Needs assistance to select strategies to investigate the problem
	Plans and carries out an approach to solving the problem. Adapts the plan as necessary	Plans and carries out an approach to solving the problem	Plans and carries out an approach to solving the problem with assistance
	Shows resilience and persistence in developing the investigation	Continues with the investigation, despite challenges	Gives up easily when things are challenging
	Records maths investigation clearly and logically, including original plan and adaptations	Records maths investigation legibly	Needs scaffolding to record maths investigation
	Uses known methods and facts efficiently to assist in solving the problem	Uses known methods and facts to assist in solving the problem	Needs guidance to connect know facts and the problem
Reasoning <ul style="list-style-type: none"> <li>explain their thinking, when they deduce and justify strategies used and conclusions reached, when they adapt the known to the unknown,</li> <li>compare and contrast related ideas and explain their choices.</li> </ul>	Explains which maths question they chose and why it was challenging for them	Explains which maths question they chose and why it interested them	Has difficulty in explaining their choice of maths question
	Explains their solution using mathematical language	Explains their solution	Has difficulty in explaining their solution
	Draws a conclusion making mathematical generalisations, connections or justifications	Draws a mathematical conclusion from their solution, connecting to maths big ideas	Has difficulty in connecting their solution to maths big ideas