Queensland Government | QCAA Queensland Curriculum & Assessment Authority

Queensland Curriculum and Assessment Authority

Essential Mathematics 2025 v1.2

IA3: Sample assessment instrument

This sample has been compiled by the QCAA to assist and support teachers in planning and developing assessment instruments for individual school settings.

Student name	sample only
Student number	sample only
Teacher	sample only
Issued	sample only
Due date	sample only

Marking summary

Criterion
Overall grade

Conditions

Technique	Problem-solving and modelling task
Unit	Unit 4: Graphs, data and loans
Topic/s	Unit 4 — Fundamental topic: Calculations Unit 4 — Topic 1: Bivariate graphs Unit 4 — Topic 3: Loans and compound interest
Duration	Students will use 8 hours of class time and their own time out of class to develop their response.
Mode / length	Written: up to 8 A4 pages, up to 1000 words.
Individual / group	This is an individual task.
Other	Appendixes can include raw data, repeated calculations, evidence of authentication and student notes (appendixes are not marked). Use of technology is required and must go beyond simple computation or word processing.
Resources	Your teacher will provide you with a unique set of data.

Context

An important aspect of managing money is understanding how to make the most of compound interest and loans. Compound interest means interest is earnt on the interest. Over time, this can mean a significant return on investments. Loans are often used to buy a house or a car. However, it is important to ensure that the repayments can be made.

Charlotte is 21 and has just started a full-time job. For her 21st birthday, her grandparents gave her some money to either invest or put towards buying a car or a house.

As Charlotte's financial adviser, you must help her decide how to best use her money to achieve her financial goals.

Task

You are to develop recommendations for Charlotte to help her achieve two of her financial goals. Her goals include:

1. buying a car
2. paying off her credit card debt
3. establishing a savings account
4. buying a house.

Your teacher will give you Charlotte's current financial information, including:

- her gross annual salary
- her current credit card debt
- the amount of money Charlotte received from her grandparents.

Your response will be in the form of a report to give to Charlotte. The report should outline different options and considerations for her financial goals so Charlotte can prioritise them.

To complete this task, you must:

- consider the stimulus information
- use your knowledge of the subject matter from Unit 4: Topics 1 and 3 to investigate the problem
- ensure you cover both simple and complex subject matter
- ensure your response demonstrates characteristics in the instrument-specific standards
- develop a unique response in a coherent and concise written format that is appropriate to the genre
- show all calculations to support your response
- use a spreadsheet to demonstrate relevant calculations.

Stimulus

Charlotte's current financial information:

- gross annual salary:
- credit card debt:
- gift from grandparents:

Checkpoints

☐ Week 2: Teacher sights evidence of student progress in class and records progress.

☐ Week 3: Students email a draft for feedback.

☐ Week 4: Teacher interviews each student to ensure authorship and provides individual feedback to student based on submitted draft.

☐ Week 5: Student submits their final response.

Authentication strategies

- You will be provided class time for task completion.
- Your teacher will observe you completing work in class.
- Your teacher will collect copies of your response and monitor at key junctures.
- Your teacher will collect and annotate a draft.
- You must acknowledge all sources.
- You must submit a declaration of authenticity.

Instrument-specific standards (IA3): Problem-solving and modelling task

Formulate	Solve	Evaluate	Communicate	Grade
The student response has the following characteristics:				
• justified statements of important assumptions • justified statements of important observations • justified mathematical translation of important simple and important complex aspects of the task	• accurate use of simple and complex mathematical knowledge for important aspects of the task • efficient use of technology • a complete solution	• verified results • justified statements about the reasonableness of the solution by considering the assumptions • justified statements about the reasonableness of the solution by considering the observations • justified statements of relevant strengths of the solution • justified statements of relevant limitations of the solution	• correct use of appropriate mathematical language • logical organisation of the response, which can be read independently of the task sheet • justification of decisions using mathematical reasoning	A
• statements of important assumptions • statements of important observations • mathematical translation of important simple and important complex aspects of the task	• use of simple and complex mathematical knowledge for an important aspect of the task • use of technology • substantial progress towards a solution	• a verified result • statements about the reasonableness of the solution by considering the assumptions • statements about the reasonableness of the solution by considering the observations • statements of relevant strengths of the solution • statements of relevant limitations of the solution	• use of appropriate mathematical language • logical organisation of the response • statements of relevant decisions	B
• statement of a relevant assumption • statement of a relevant observation • mathematical translation of a simple or complex aspect of the task	• use of simple mathematical knowledge relevant to the task • simplistic use of technology • progress towards a solution	• progress towards a verified result • statement about the reasonableness of the solution by considering an assumption or observation • statement of a relevant strength or relevant limitation of the solution	• use of some appropriate mathematical language • adequate organisation of the response • statement of a relevant decision	C
• statement of an assumption or observation • mathematical translation of an aspect of the task.	• simplistic use of mathematical knowledge • inappropriate use of technology.	• statement about the reasonableness of a result or the solution • statement of a strength or limitation.	• use of everyday language • basic organisation of the response.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E