



# Boorowa Central School

Excellence through Respect, Responsibility and Participation

## Assessment Task Feedback

Student: \_\_\_\_\_

Task: \_\_\_\_\_

Teacher Feedback

### STRENGTHS

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- 
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### AREAS TO STRENGTHEN

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- 
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### WHAT OTHER THINGS I COULD HAVE DONE - Student Response

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- 
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Teacher Comment

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

MARK



### EFFORT

### NAME

Didn't try very hard and gave up	Put in a bit of effort	Worked OK but could have done more	Worked very well	Pleased with my effort
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### DIFFICULTY OF THE TASK

Too hard	Hard	Some parts were hard but achievable	OK	Easy
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## Assessment Task Notification

All tasks should be clearly outlined in the notice and give information pertaining to the nature of the task, the outcomes being assessed and the marking schedule giving individual component weightings.

<b>Teacher:</b> Mr Corcoran	<b>Course:</b> Mathematics Advanced
<b>Task and Number:</b> Investigation - Task 1	<b>Task Weighting:</b> 20%
<b>Date Issued:</b> 4/11/19	<b>Date Due:</b> W6 Friday 22 <sup>nd</sup> November 2019
<b>Syllabus component:</b> M1 – Financial Mathematics	
<b>Syllabus outcomes being assessed:</b> <ul style="list-style-type: none"><li>&gt; models and solves problems and makes informed decisions about financial situations using mathematical reasoning and techniques MA12-2</li><li>&gt; applies the concepts and techniques of arithmetic and geometric sequences and series in the solution of problems MA12-4</li><li>&gt; chooses and uses appropriate technology effectively in a range of contexts, models and applies critical thinking to recognise appropriate times for such use MA12-9</li><li>&gt; constructs arguments to prove and justify results and provides reasoning to support conclusions which are appropriate to the context MA12-10</li></ul>	
<b>Description of task:</b> <p>This assignment involves the use of financial mathematics to investigate real-life situations. The task involves the preparation of a financial advice report for an imaginary client by modelling their financial situation. There are four parts to the task. Each part is explained in detail in the attached '<i>Financial Advice – Preparing a report for a client</i>' sheet.</p> <p>Your final submission must be in the form of a portfolio for your client. The portfolio should include any working and justification for the advice given. Include digital files, screenshots, and details of any spreadsheets, graphs and equations used.</p> <p>The 'Modelling Financial Situations Assessment Spreadsheet' that accompanies this task should also be submitted electronically. Submit this file using the naming protocol: yourname_spreadsheet.xlsx.</p> <p>Conclude your report with a paragraph of approximately 150-250 words that summarises the financial advice that is most appropriate for your client.</p>	
<b>Marking criteria</b> <p>You will be assessed on how well you:</p> <ul style="list-style-type: none"><li>▪ select and use appropriate mathematical processes, technologies and language to investigate, organise and interpret calculations</li><li>▪ provide reasoning and justification related to the solved problems</li><li>▪ use appropriate technology to investigate, organise and communicate information</li><li>▪ demonstrate understanding of financial mathematics</li></ul>	
<b>Financial Advice – Preparing a report for a client</b> <p>You are to provide financial advice for a client who has just completed the Year 12 Mathematics Advanced course. From the beginning January in the new year, your client will earn an income from a part-time job while they complete at least three years of tertiary training leading to a qualification before entering the workforce. For example, your client could complete a 4 year apprenticeship, a 3 year traineeship or certificate, or a 3-4 year degree.</p> <p>From the time they begin to earn income, your client has committed to save regularly into a high interest savings account. They will then use these savings as a deposit for a loan. After saving for at least five years, your client plans to make a purchase that will require them to take out a loan. Your client will pay off the loan by making regular instalments.</p> <p>There are four parts involved in preparing the Financial Advice report that your client has requested. Each part should be written with explanations of the situation, screenshots or files of any digital technology used, and justification of accompanying calculations</p>	



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## Part 1: Client Profile

- Describe the financial situation of your client at the beginning of the January following their completion of the HSC.
  - Decide the details of your client's choice of employment, income, savings and the nature of their loan.
  - State any assumptions you have made and include any research you have undertaken to ensure your client's situation is representative of a typical Year 12 student.
  - Include the details of the relevant employment award agreement and include a copy or link to the award.
- Establish a timeline for your client that clearly indicates when major changes in your client's financial situation will occur.
- Explain clearly the nature of the major purchase that will take place five years after your client begins to earn an income.
  - Include and any other details that you will need for the investment and loan calculations.
  - Ensure that any loan conditions are currently feasible and assume the same conditions exist over time.
- Complete Part 1 of the '*Modelling Financial Situations Assessment Spreadsheet*' by adding the details required and any further assumptions that you will make.

## Part 2: Investing for the Future

- Use Part 2 of the '*Modelling Financial Situations Assessment Spreadsheet*' to model the investment situation for your client.
  - Include a graph of the value of the investment over time, the total of the investment and the total interest accrued so that your client can visualise the situation more clearly.
- Showcase the knowledge and understanding both you and your client have of series by including a calculation that verifies one of the calculations in your investment model.

## Part 3: Achieving the Goal

- Use Part 3 of the '*Modelling Financial Situations Assessment Spreadsheet*' to model the loan repayment situation for your client.
  - Include graphs of the amount owing, the total cost of the loan and the total interest payable so that your client can visualise the situation more clearly.
- Showcase the knowledge and understanding both you and your client have of sequences and series by including a calculation that verifies one of the calculations in your loan repayment model.

## Part 4: Life Gets Complicated

Over time, the initial assumptions made in your financial model will become subject to change. For example, interest rates for investments vary; interest rates for loans are typically fixed for an initial period and then vary over time; incomes rise or fall as people change jobs or gain expertise; the capacity to make repayments changes; or a benefit in the form of a bonus, gift or inheritance may be received.

- Select at least one of these scenarios and explore the effect on your financial model.

## Preparing your report – Frequently Asked Questions

### What is a financial model?

A financial model is a dynamic representation of a real-world financial situation that includes tables, graphs and calculations. It works with a set of hypotheses about the present state of the financial situation and predicts future outcomes.

### How should I begin the report?

The process of financial modelling begins with setting key assumptions and gathering information. Start the report with a description of the present financial situation of the client. Indicate clearly the goal of the financial model.



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## Where can I find information?

*Employment awards and income levels*

<http://www.abs.gov.au/ausstats/abs@.nsf/mf/6302.0>

<https://www.fairwork.gov.au/awards-and-agreements/agreements>

*Loan calculators*

<https://www.moneysmart.gov.au/tools-and-resources/calculators-and-apps/personal-loan-calculator>

*House prices*

[http://www.valuergeneral.nsw.gov.au/land\\_values/historical\\_land\\_values](http://www.valuergeneral.nsw.gov.au/land_values/historical_land_values)

[http://www.valuergeneral.nsw.gov.au/land\\_values/land\\_value\\_trends](http://www.valuergeneral.nsw.gov.au/land_values/land_value_trends)

<http://www.housing.nsw.gov.au/about-us/reports-plans-and-papers/rent-and-sales-reports>

*Mortgage repayments*

<http://www.yourmortgage.com.au/compare-home-loans/fixed/>

<http://www.planabettermortgage.com.au/loan-calculators/p-i--interest-only.htm>

## What do I need to include in my report?

For this report, the key assumptions should include interest rates, income predictions, a timeline of key events and a final statement of advice to the client. The final advice to the client could include a number of different options the client could take to achieve a more beneficial outcome.

## How should I present the report?

There is no set format for the presentation of the report however you must include a completed copy of the 'Modelling Financial Situations Assessment Task Spreadsheet' that was issued with the assessment task.

You could choose to present the report as:

- a slideshow
- a digital document or portfolio
- a handwritten document supplemented with digital files.

## Submission of Task requirements:

**Submit paper copy of report and electronic copy of excel spreadsheet**

**Note:** If a student is absent for an assessment task or fails to submit a task when it is due, then a medical certificate or other acceptable explanation must be presented on the first day the student returns to school or a zero mark is awarded.



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## Assessment Task - Marking Criteria

### Understanding, Fluency and Communication

The student:	Novice 0-2 marks per cell	Apprentice 3-4 marks per cell	Practitioner 4-5 marks per cell	Expert 6-7 marks per cell
applies the concepts and techniques of arithmetic and geometric sequences and series in the solution of problems MA12-4	Evidence of the ability to solve compound interest problems is present. For annuities and loan repayments, no strategy is chosen, or a strategy is chosen that will not lead to a solution.	A correct strategy is chosen to calculate the future value of an annuity or to find the amount of a loan repayment. <i>Note: The Apprentice must achieve a correct answer.</i>	Correct strategies are chosen to calculate the future value of an annuity and to find the amount of a loan repayment. There is evidence of an attempt to solve an unfamiliar problem related to annuities and loan repayments. <i>Note: The Practitioner must achieve a correct answer.</i>	Correct strategies are chosen to solve unfamiliar problems related to annuities and loan repayments. There is evidence of analysing complex financial situations in mathematical terms. <i>Note: The Expert must achieve a correct answer.</i>
chooses and uses appropriate technology effectively in a range of contexts, models and applies critical thinking to recognise appropriate times for such use MA12-9	A simple spreadsheet has been used to model either an investment <i>or</i> a loan repayment situation. No attempt to produce a graph is evident. There is some evidence of an attempt to investigate a simple scenario.	A simple spreadsheet has been used to model <i>both</i> an investment <i>and</i> a loan repayment situation. A correct graph that illustrates <i>either</i> model has been included. There is evidence of investigation and exploration of two simple scenarios.	Spreadsheets have been used efficiently to model <i>both</i> an investment <i>and</i> a loan repayment situation. Correct graphs that model <i>both</i> investment <i>and</i> loan repayment situations have been included. There is significant evidence of investigation and exploration of a variety of different scenarios.	Well-designed spreadsheets have been used efficiently to model <i>both</i> investment <i>and</i> loan repayment situations. A variety of correct graphs that model <i>both</i> investment <i>and</i> loan repayment situations have been included. There is extensive evidence of investigation and exploration of a variety of different scenarios. This evidence includes an example of a self-initiated exploration.



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## Problem Solving, Reasoning and Justification

The student:	Novice 0-2 marks per cell	Apprentice 3-4 marks per cell	Practitioner 4-5 marks per cell	Expert 6-7 marks per cell
models and solves problems and makes informed decisions about financial situations using mathematical reasoning and techniques MA12-2	An attempt at identifying assumptions is present. There is a simplistic attempt to model a situation involving compound interest.	There is evidence that some assumptions have been identified and applied to the model. There is a simplistic attempt to model a situation involving <i>either</i> an annuity <i>or</i> a loan repayment.	There is evidence that multiple assumptions have been identified and applied accurately to the model. There is evidence of modelling <i>both</i> a situation involving an annuity <i>and</i> a loan repayment.	There is extensive evidence that assumptions that make the model more realistic have been identified and applied accurately. Complex models of <i>both</i> an annuity <i>and</i> a loan repayment are evident.
constructs arguments to prove and justify results and provides reasoning to support conclusions which are appropriate to the context MA12-10	Only a description of the model is evident. There is little or no evidence of reasoning.	Evidence of drawing a simple conclusion related to varying an assumption underlying the model is present. There is evidence of some relevant reasoning.	Evidence of drawing different conclusions related to varying assumptions underlying the model is present. Evidence of solidifying prior knowledge and applying it to problem-solving is present.	The conclusions drawn reveal extensive exploration of the model in an attempt to make it more realistic. Evidence of analysing the models in mathematical terms and justifying arguments is present.



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## Assessment Task Log Sheet

<b>Subject and Class: Mathematics Advanced</b>	<b>Date Due: Week 6 Term 4 Fri 22<sup>nd</sup> Nov 2019</b>	<b>Weighting: 20%</b>
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<b>Assessment Task Number and Name: Task 1 Investigation</b>
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Receipt of Assessment Notice			Task Handed in on Due Date		Task Return and Feedback
Date	Student Name:	Student Signature:	Student Signature:	Teacher Signature or Date Submitted:	Student Signature: