



Full name: _____

Teacher: _____

Orange High School

Year 10, 5.2/3 Investigative Assignment

Task 1 2024

Outcomes Assessed

MA5.1-1WM

uses appropriate terminology, diagrams and symbols in mathematical contexts

MA5.1-2WM

selects and uses appropriate strategies to solve problems

MA5.1-3WM

provides reasoning to support conclusions that are appropriate to the context

MA5.1-4NA

solves financial problems involving earning, spending and investing money

MA5.2-2WM

interprets mathematical or real-life situations, systematically applying appropriate strategies to solve problems

MA5.2-4NA

solves financial problems involving compound interest

Weighting:20%

Due: Week 6, Tuesday the 5th of March, Period 1

Failure to submit the assignment within the negotiated timeframe may result in an N-award.

Nature of the task

In this task you will explore the implications of choosing a career and the financial aspects associated with your job. You will consider income, tax, interest, budgeting, savings and more.

There are three sections to the task. All require you to choose ONE job from the three provided and use the information given to answer all questions.

- Show all of your calculations.
- Explain your reasoning, including references to any websites you may access.
- Submit your work as a hard copy.

Hand-in components of this task

Students will be required to complete the questions either in the space provided or on separate A4 sheets of paper. They will need to hand in a hard copy of their calculations which addresses all of the criteria outlined in this booklet.

Section 1	/22
Section 2	/25
Section 3	/9
Total	/56

Select **ONE** of the following job descriptions and use the information provided to answer the following questions.

Hairdresser at Tangled Hair and Beauty Salon

We are looking to hire a skilled hairdresser and stylist that can provide various hairdressing services to a range of clients based on their needs and preferences. This job involves working 8 hours a day for five days a week. However, unlike other places, there is no set preference as to which days you work, so the choice is entirely up to you!

Salary	\$50,000 p.a.
Bonus	\$300 Christmas Bonus
Work provided materials	Hair dryers, foils and colour tools, scissors and styling tools
Leave entitlements	4 weeks annual leave with an additional 17.5% leave loading

Teacher at Orange High School

Are you a positive and energetic person who is looking to join an amazing team of teachers? Then Orange High School is the place for you! This job involves working Monday to Friday from 8:30am to 4pm, alongside staff and students to create a fun and enjoyable learning space.

Salary	\$75,000 p.a.
Bonus	None
Work provided materials	Laptop, stationery, and textbooks
Leave entitlements	4 weeks annual leave with an additional 17.5% leave loading

Tradesperson

We are looking to hire an outgoing, young individual who is willing to commute from Orange to Bathurst to join a team that services the renovation needs of Bathurst residents. You will be working from Monday to Friday, 9 hours per day.

Salary	\$60,000 p.a.
Bonus	\$450 per year
Work provided materials	Tools and a work shirt
Leave entitlements	4 weeks annual leave with an additional 17.5% leave loading

Section 1 – Working with Money

The below questions all relate to your chosen job. Use only the information on the job chosen.

1. What job have I chosen: _____

2. Find the hourly rate of pay for **your chosen** job (Excluding Bonuses).

2

3. A competitor has approached you about coming to work with them. They have given you the following offer:

5-Days a week at \$31.50 an hour for the same number of hours.

You will receive 4 weeks of annual leave with the 17.5% leave loading.

a. Compare the two incomes. How much more or less will you earn per hour if you took this new job offer?

1

b. Which job would you take? Justify your choice.

1

	Benefit	Disadvantage
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Wage		
Salary		

4

4. Explain, giving examples what the benefits and disadvantages are of being paid a salary versus a wage. Provide two examples in each box.

5. You have decided to take a 4-week holiday to Perth, Western Australia. During this time, you will be paid annual leave with the annual leave loading. Referring to **your chosen** job, answer the following questions.

a. You are entitled to 17.5% annual leave loading, how much annual leave loading will you receive whilst on holidays?

1

b. How much will your total income be for the 4-week holiday?

1

6. You have decided that you want to buy a car in the next year and need to save some extra money. To do this you are going to work on either a Saturday or weekday afternoons on the following basis:

Hairdresser: Hair styling at \$45 per person

Teacher: Tutoring at \$40 per child

Tradesmen: Odd jobs at \$30 per hour.

For **your chosen** job calculate the earnings for the different piecework options above. Assume a total of 12 people or 10 hours of work **per week**, for one week.

1

7. Your job has various expenses associated that are not provided by your employer. Some of these expenses may be classified as tax deductible. List 3 possible expenses, besides union fees, that could be classified as work related expenses. List their prices and why you would need to pay for them.

	Product/service	Cost	Reason for Purchase
Deduction 1			
Deduction 2			
Deduction 3			

1

1

1

8. It is tax time. You need to find your taxable income and hence calculate your tax to see if

you have a tax bill or refund.

For this question you will use the deductions listed on the previous page, as well as \$450 in union fees as your deductions.

You will also need to include the income made from question 5 (Piecework). Assume this income is the same for each week of the year.

a. What is your taxable income? 2

b. Using the table below, find how much income tax you should have to pay? 3

Taxable income	Tax on this income
0 – \$18,200	Nil
\$18,201 – \$45,000	19c for each \$1 over \$18,200
\$45,001 – \$120,000	\$5,092 plus 32.5c for each \$1 over \$45,000
\$120,001 – \$180,000	\$29,467 plus 37c for each \$1 over \$120,000
\$180,001 and over	\$51,667 plus 45c for each \$1 over \$180,000

c. Your employer follows the PAYG tax system. You have been paying \$785 a fortnight in tax this year. Will you be getting a Tax refund or a Tax bill? How much will it be? 2

9. The Medicare levy is a 2% charge made by the government and is made on your taxable income. How much would you need to pay for the levy? 1

END OF SECTION

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A very important part of managing finances is balancing a **weekly** budget. Below is an example of a weekly budget with a few missing sections (highlighted in bold).

Income		Expenses		
Salary	\$	Rent	\$380	1
Piecework	\$	Groceries	\$144.70	1
Bonus	\$	Phone Bill	\$	2
		Recreation	\$80.75	
		Electricity	\$	1
		Clothing	\$70.00	
		Tax	\$392.50	
		Entertainment	\$22.60	
		Water	\$	1
		Savings	\$	1
Total	\$	Total	\$	2

- Using the information from Section 1, fill in the income section of the table, including the total. Remember that this is a **weekly** budget.
- Using the information below, fill in the expenses section of the table. Remember that this is a **weekly** budget.
 - You currently pay \$1235 per year on electricity.
 - Your phone bill is \$59 a month.
 - You pay \$30.80 per fortnight on water.
 - The total at the bottom of the expense column should be the same as the income column.
 - The savings box is all of the money that you have left over after paying for all of the other expenses.

3. After making your weekly budget you decide to invest 6 months' worth of savings into a bank account which you plan to leave for 5 years. (Hint: Multiply your weekly budget savings by 26 to get the investment amount). You have two options:
- **Account A** – 8.4% p.a. simple interest
 - **Account B** – 7.5% compound interest, compounded annually.
- a. Using the simple interest formula, $I = PRN$, calculate the interest earned in **Account A** after 5 years. 2
- b. Using the compound interest formula, $A = P(1 + r)^n$, or repeated simple interest, find the final amount in **Account B** after 5 years. You may use technology and paste a copy of your working here if you wish. 1
- c. Calculate the amount of interest earned in **Account B**. 1

d. Which option, **Account A** or **Account B**, is the best option for your investment? How much additional interest do you make? 1

e. In 5 years, you would like to buy a new car worth \$40,000. If your savings were placed into the account indicated in part d, how much more money do you require? 1

4. A friend has mentioned that a different bank is trying to attract new customers through competitive interest rates. 4

You have found an account with a 7.2% p.a. interest rate which has the option of having interest compounded monthly or quarterly.

Using your 6 months' worth of savings, which option, monthly or quarterly, is best and how much more interest will you receive over a 5 – year period? How does this compare to **ACCOUNT B**? Show all working.

5. In order to buy your new car, it makes sense to sell your current one. You bought your car four years ago when it was second hand. You have looked up the current values online and see that the car is now worth \$5600. Assuming it depreciates at a rate of 6.2% p.a. compounded yearly, what was the original value of the car to the nearest dollar? Show all working. 3

6. While looking into the bank, your family decided to investigate getting a new home loan. The table below shows the **monthly payments** for each \$1000 borrowed. Your family is planning on borrowing \$380 000. Using the table answer the following questions.

- i. How much will they pay in total if they get the 7% interest rate for 15 years?

Interest rate	Period of loan		
	10 years	15 years	20 years
6% p.a.	\$11.10	\$8.44	\$7.10
7% p.a.	\$11.61	\$9.00	\$7.75
8% p.a.	\$12.13	\$9.56	\$8.36

1

- ii. Your parents have decided to choose the 8% p.a. interest rate and pay this off over a period of 10 years. Compare their total pay with the answer to the part above. How much interest will they save or owe? 2

Section 3 – Loan Application

A loan application letter can help a lender (Bank) decide if you qualify for a personal loan.

Your task is to write a letter to the bank manager of the Commonwealth Bank in Orange, applying for a personal loan.

The loan amount is **the amount you require from section 2, question 3e to buy your car.**

Your letter should be approximately 500 words and you should be looking to borrow the money for a period of 3 years (36 months) at a rate of 0.5% per month.

Your letter must include the following:

- An introduction greeting the bank manager and outlining the reason for your letter. Remember this is a formal letter, you must be polite.
- A body which includes evidence to support your loan application, including your current savings ability and how you will be able to repay the loan in the agreed loan period.
- A conclusion.

To assist you, a sample letter is attached.

To Ms. Smith,
The Lending Manager
Commonwealth bank, Orange.

Subject: Application for Loan to purchase a New Bicycle.

Dear Ms. Smith,

I write to request \$8200 as a personal loan to purchase a new road bike to use as the mode of transport to commute to work. I work as a shop manager in Orange, and I have been with my current employer for 5 years.

I would like to borrow \$8200 for a period of 36 months. I am applying for the personal loan you offer with a rate of 0.5% per month, compounded monthly.

As a shop manager I earn \$3200 per fortnight and my current expenses per fortnight total \$2600. This leaves me with \$600 per month in savings, which is more than enough to cover the monthly repayments.

I have attached a copy of my monthly budget to this application letter.

Thank you in advance and hoping to hear from you soon. Kind regards,

Kate Brea

Shop Manager

Orange

Marking Guidelines

Description	Marks
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Follows Layout Provided.	/1
Uses Formal Language.	/1
Explains the reason for why the Loan is required as well as details about self. Providing details such as: <ul style="list-style-type: none"> - Reason they need a car. - How much they need and what they plan to buy. 	/2
Explains what loan they are applying for and associated numbers, such as: <ul style="list-style-type: none"> - Time period. - Interest rate. - When it is compounded. 	/3
Explains ability to make repayments by providing the following details: <ul style="list-style-type: none"> - Current earnings. - Current expenses. - Current savings. 	/2
Total	/9

PLEASE TURN OVER TO SEE THE SCAFFOLD PROVIDED
