Te whai hua - kia ora

sorted in schools

Financial mathematics

Money Matters

Teacher support materials

Year 10

Overview

Title	**Year 10 financial mathematics:**
Purpose of this resource	To support students to understand key financial concepts from the financial mathematics sub-strand of the curriculum.
How to use this resource	This resource has been designed to be woven into your teaching programme. The topics and curriculum sub-strand covered will naturally overlap with other parts of the mathematics and statistics learning area. The sections can be taught in any order to supplement other units, see below for more suggestions on this. If you prefer, this can be used as a standalone resource for financial mathematics.

What will be covered?

Curriculum Links

Strand: Number

Sub-strand: financial mathematics

Year: 10

Knowledge

Percentages, ratios, rates, and proportions are often applied in financial situations.

Practices

- Convert New Zealand dollars into other currencies, and vice versa.
- Find proportions of costs (e.g. the price of 400 g of an item, given the cost per kilogram)
- Calculate compound interest on dollar amounts, by calculating simple interest month by month for short time periods (e.g. How much do you have after 3 months if you invest $100 at a 2.5%-per-month interest rate?)

Other connections to the wider mathematics and statistics learning area

- **Number structures and operations:**
- Identifying, reading, writing, representing, comparing, ordering, and converting between fractions, decimals, and percentages.
- Percentages are a way of expressing a fraction of 100.
- Finding a fraction or percentage of a number.
- Finding the whole amount, given a fraction or percentage (eg 20% of an amount is 30. What is the original amount?)
- Expressing a number as a fraction or percentage of another number.

What's in the student workbook?

Section Layout

Each topic in the main body of the lesson is laid out in the same way:

1. **The learning** – the recapped knowledge and practices relevant to this particular section.
2. **What I need to know** – the core vocabulary, explanations and examples needed by the students to attempt the activities, where you demonstrate the particular formula that should be used by your learners. Examples are given in the individual sections below.
3. **Giving it a go** – where the knowledge and practices will be applied.
4. **Extension** – each section will have an extension task, a chance to apply the knowledge again or support for those that need extra extension..

Examples and explanations

Examples are provided and explained in an introduction to each topic and have been designed to help prepare students complete the activities provided.

You may choose to adapt the examples to make them more relatable for your class and can also copy and paste them into another format, eg. PowerPoint, Word doc or Google doc to share with your class.

Please provide the appropriate formula for your students based on their knowledge level and your approach as a teacher. We have not provided specific formulae in the student workbook to ensure this does not clash with your own approach, or prior learning undertaken by your students.

Activities

The activities have been:

- Designed to practice maths skills in everyday financial contexts.
- Help students to meet the curriculum knowledge and practice statements for financial mathematics.
- Support learning statements from other sections of the mathematics and statistics learning area.

For each section, an extension activity is provided for those students wanting to learn more and give you extra time for students who may need support.

Run through

Section	Specific teaching notes
1. Getting set-up	Spend some time going through the curriculum statements and get students to think about why this information might be important in every-day life. Students will have an opportunity to reflect on this more, if you use the self-assessment tool.
2. Finding proportions of costs	It is important that this section comes first in the student workbook so that students develop strong proportional thinking. Pre-learning could include an explanation of measurement quantities. You may like to continue the learning with more interactive shopping and budgeting activities such as the Supermarket Shopper on Sorted in Schools.
3. Currency conversion	The examples and activities in this section will support students to work with quantity and exchange rate value, then practise multiplying or dividing. Pre-learning could include a discussion on how currency works and why exchange rates fluctuate.
4. Compound interest	Understanding the power of compound interest can make a big impact in the lives of young people because they have plenty of time to grow their money. You may also like to talk to your students about compound interest and debt. Learning activities could include a recap of simple interest from the Year 9 student workbook. This section includes information, videos and tools from the Sorted website. Head to the sorted.org.nz to find more blogs, guides and tools to keep learning about compound interest.
5. Wrapping it up	This is an opportunity to think about how this learning applies to real-life. It brings the learning together from each topic and encourages students to reflect on how this could apply to them if they were to plan for an overseas trip in the future. This activity may challenge thinking, so some students might need extra support.

Vocabulary

Key concepts have been explained (eg, compound interest) with other essential vocabulary provided. We recommend spending some time checking the students' knowledge of the key vocabulary before you start each section.

Additional activities have been provided to support the acquisition of the language needed to understand the concepts, suggestions for vocabulary specific activities are listed below.

Class or group discussions give students an opportunity reinforce their understanding of key words. A vocabulary list has been provided at the end of this booklet.

Suggestions for familiarising your learners with this vocabulary prior to starting the learning:

1. Get students to create **'word squares'** for some of the more difficult terms. Provide your students with a blank template. Here is an example of a completed word square:

WORD	
Definition (students' own words)	Opposite/antonym
Picture representation	Use the word or a version of the word in a sentence (eg. School, schools, schooling, schooled).

EARN	
Getting money when you do work or get interest from savings.	Spend
	Mark earned $20 interest from his savings account this year.

2. Quizlet

Create a list on *Quizlet* with the key vocabulary provided in this booklet. This can be used for learning or revision in class or at home.

Supplementary resources

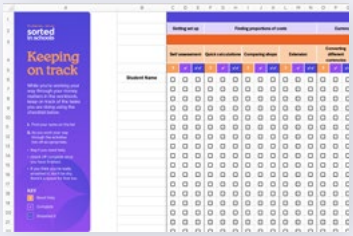
Self-assessment

The self-assessment is intended to be used at both the beginning and end of the learning allowing students to see their progress and document their understanding.

These statements and steps can also be used as a way to:

- Assign learners into diverse learning groups with a range of confidence levels and abilities.
- Utilise as a bus-stop activity or a challenge eg. a station for each step in the self-assessment tool. This could be done individually or in teams.
- Complete a task to show you can evidence that statement before moving along.

Keeping on track



This tracking tool can be used as an excel document or converted to a google sheet.

The teacher can use the tracker to see who requires extra support, who may be able to offer it, and how the class is tracking in general. Columns can be removed or added to customise the learning plan to your class.

Encourage students to categorising themselves as ‘smashing it’ to support others struggling with a particular task.

Challenge slides

This presentation is intended to be used at the end of the learning as a final activity or to revisit the learning later.

On each slide is a challenge, these are designed to be completed in pairs or teams and can be adapted to suit your individual environment and learners.

Getting to know the content

Age and stage	When teaching young people about money, it is important to consider their age, developmental stage and lived experiences. Ensuring there is safety around money conversations and no assumptions are made. This is important for engagement in this real-world context for learning. Below are the six best practices for financial education (with detail) and how they apply to the learning in this financial mathematics unit for Year 10 students.
Is relevant to the lives of students	At this age students may have had experience earning or purchasing. Finding opportunities for them to apply the calculations in this workbook to their own experiences is useful.
Provides the building blocks towards financial wellbeing	Utilising online tools, such as the Sorted tool used in Part 2 of the workbook, provides learners with the opportunities to access tools that are safe and trusted, and return to this information at a later date. Providing with opportunities in class to investigate current interest rates for borrowing and savings, ensures the figures are up to date and they have the ability to do this in the future.
Offers practical and varied learning opportunities	The activities in this workbook are set out in a way that repeats similar calculations and problems. Encouraging engagement in the wrapping up activity will also allow students to apply this knowledge elsewhere.
Is developed and refined based on research, evidence and evaluation	By using the self-assessment tool, as well as prior assessment of the mathematics skills required to access this learning, you will be able to target any further support or need for extension. The tracker will also help to support you to manage differing ability levels and speeds of learning in the class.
Prioritises support for educators	The information contained in this section is intended to support you in the safe and effective delivery of mathematics in a financial context. The links to Sorted guides and tools is intended to support you with up to date and impartial information on topic which may be covered through the course of this learning.
Leverages partnerships for greater impact	Partnering this learning with other learning happening in your school or across your mathematics programme will further enhance its effectiveness by boosting its relevance to the learners.

These best practices were developed by us Te Ara Ahunga Ora Retirement Commission, and supported by the Ministry of Education and Financial Education Provider Advisory group as part of the Implementing Financial Education – A guide for schools in Aotearoa New Zealand set to be released in 2026

Sorted guides

The following Sorted guides offer relevant, up-to date information on topics which are covered or may come to the surface during the learning undertaken in the Student Workbook.

Savings: See the following information from Sorted for more information about interest on savings.

How to save your money » Sorted

Invest in term deposits » Sorted

Borrowing: The idea of simple interest on debt was introduced in Year 9. You may like to talk more with your class about compound interest on debt. Talking to young people about borrowing can bring up emotions and personal experiences with debt. **Sorted.org.nz** has a large amount of information on different types of debt and borrowing that may be relevant to the lives of your learners. It's important to avoid talking about 'good' and 'bad' debt and instead focus on decision making and the impact of interest.

Help with reducing debt - advice, guides & free tools » Sorted

Supplementary learning

Money Stories (part 2 - honouring giving) has more information about exchange rates and sending money to other countries:
Money stories - Pacific edition | Sorted in Schools

Other financial education resources for Year 9

Sorted in Schools offers a wide suite of financial education resources that can be used around this learning. Below is a snapshot of some of these that may connect to your mahi in class.

Supermarket Shopper: **Supermarket Shopper - Interactive Activities | Sorted in Schools**

Bite-size learning activities:
Bite size learning activities | Sorted in Schools

Starter pack:
Starter Pack for Students - Interactive Activities | Sorted in Schools

Extra bits

Glossary

Earn - Getting money when you do work or get interest from savings.

Exchange rate - how much one unit of a currency is worth in another currency

Compound interest - Compound interest is the amount of interest you earn on both the money you have in your savings, and on the interest you've already earned. In other words, you earn interest on interest. Over time, compound interest makes your money grow like a snowball rolling downhill.

Cost - The amount of money you pay to buy goods or services.

Currency – The money used in each country e.g. dollars, euros, yen.

Currency conversion - the process of changing one currency into another using an exchange rate.

Interest – Interest is the cost of money over time. If you're borrowing, the longer you do the more interest you pay. If you're saving, you're giving your money to a bank to lend, so they pay you interest.

Interest rate – The cost of money over time expressed as a percentage. Money can be more or less expensive to borrow, so rates can be higher or lower.

Invest - This is when you buy something (an asset) that has the potential to increase in value over time and grow your money. Examples include buying shares of a company, property, bonds, or a business.

Ratio - A ratio tells you how much of one thing there is compared to another. It's a way of comparing quantities to understand their relationship.

Proportion – A part as it compares to the whole. This can also be a figure or a share as it compares to the entire amount or value.

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