45 mins.

Upper Secondary

Understanding compound interest

In this lesson students learn how compound interest works and why saving now can help you later.

Outcomes

Students:

- understand the impact of compound interest and apply it to saving scenarios
- explore options for good savings practices
- recognise how to better manage money into the future

Curriculum links v9.0

English

AC9E9LY02

Mathematics

AC9M9N01

AC9M9M04

AC9M10A04

HASS

AC9HE8K05

AC9HE9K01

AC9HE10K03

General Capabilities

Digital Literacy

Locate information Level 6

Numeracy

Proportional thinking Level 6–7

Understanding money Level 8–10

Number patterns and algebraic thinking Level 9

Other resources

Video - Making money decisions (1.12)

Simple ways to save money

Tax, Super + You

ATO's Super

Moneysmart's How super works

Getting Started (15 mins)

Open a conversation with your class using the following questions:

- How do you make your money work for you? Explore what this might mean.
- What is the difference between simple interest and compound interest?

This very short video is a great introduction - Maximise your savings - Youtube (1:11)

Discovery (30 mins)

Exploring compound interest

Have students watch ABC video: My five cents: What is compound interest? (2:08) (video transcript below)

a. As the video plays, ask students to list every term that relates to money (for example: compound interest, compounding, financial funds, superannuation, retirement.)

b. Research the definitions where appropriate.

Question 1: Use the Moneysmart Compound interest calculator to complete the following:

In the video, after 10 years, Romesh has $13,439 while Lucia has $27,196. They both have accounts that earn 3% interest, compounded annually.

a. Romesh begins to deposit $100 monthly into the account. How much does he accumulate after 12 years?

b. Lucia stops depositing $100 monthly after 10 years. How much does she accumulate after 12 years?

c. How much should Romesh deposit every month in those 12 years to exceed Lucia's amount at the end of the 12 years?

Question 2: You open a savings account with $10,000. Over the span of 10 years, which savings option is better to grow your money?

a. Depositing $10 per week

b. Depositing $15 per fortnight

c. Depositing $50 per month

Share your reasoning using your calculations on the Compound interest calculator.

Question 3: When can compound interest work against you?

moneysmart.gov.au

Understanding compound interest

Extension (15 mins)

Superannuation

Share with your students the following information: When you begin working, superannuation (or super) is money that your employer puts into an investment fund - a super fund. Although these funds are not designed for you to access until you retire, it is your money so you should know how it works. Because your super is a long-term investment, it is a good way to understand how compound interest can work for you.

Watch this short video on Understanding superannuation (1:12). Read through the ATO's Super and Moneysmart's How super works webpages to find out more.

Question 1: Find out the following information. You will need it for the next activity.

a. Define the term, 'superannuation' and describe how it works.

b. What is the current minimum superannuation guarantee employers must pay?

c. What is the average weekly income for a full-time worker in Australia (to the nearest dollar?)

Question 2: Investigate Wen's super balance at retirement using Moneysmart's superannuation calculator based on the following information:

a. Wen is currently 22 years old and will probably retire at the age of 67. Calculate his total fortnightly gross income (assume he is paid an average weekly income).

b. His employer pays the superannuation guarantee to Wen's chosen superannuation fund every fortnight. Using the superannuation calculator, what will be Wen's super balance when he retires?

c. What percentage of Wen's super balance goes towards fees?

d. Examine how much super someone might need to retire comfortably. How much super you need - Moneysmart.gov.au

Parts of this resource were developed with ABC Education

Understanding compound interest

Video transcript - My five cents: what is compound interest?

[music plays]

Gen Fricker: Saving for the future. Everyone tells you to start now, but the future is ages away, so why? I'll give you one good reason. Compound interest, it works like this.

When you put money into a savings account, you'll earn extra money called interest. If you leave that interest in the account along with the original amount, it compounds. In other words, because there is now more money in the account, you'll earn even more interest next year, and if you don't touch your savings, they will keep growing.

Lucia and Romesh got $10,000 each from their grandma when they turned 19. They each put their money into savings accounts that earn 3% interest. Lucia decides to save more, so she adds $100 per month. Romesh just leaves his money to earn interest. After 10 years, Lucia has twice as much money as Romesh. Wow!

Romesh decides it's time for him to start saving, so he copies Lucia and puts in $100 per month. Lucia on the other hand, stops putting money into her savings account for now. She knows her money will keep growing because of compound interest.

Here's the kicker. Even though Romesh adds $100 a month, he will deposit more money for much longer than she did. It's all because she started earlier and compounding works over time.

As well as savings accounts, compound interest is used by all sorts of financial funds. For example, it's one of the key building blocks for superannuation, which is the compulsory retirement savings scheme in Australia.

My five cents on compound interest is, time is money. So the sooner you start, the better off you'll be. Cha-Ching!

Solutions.

Question 1

a. Romesh begins to deposit $100 monthly into the account. How much does he accumulate after 12 years? **$36,191**

b. Lucia stops depositing $100 monthly after 10 years. How much does she accumulate after 12 years? **$38,775**

c. How much should Romesh deposit every month in those 12 years to exceed Lucia's amount at the end of 12 years? **Depositing at least $116 per month will allow Romesh to exceed Lucia's amount.**

Question 2

- Depositing $10 per week, $17,884
- Depositing $15 per fortnight, $16,460
- Depositing $50 per month, $18,760

Question 3

If you have a loan or credit card, compound interest can quickly add up. Your interest rate compounds daily, so the quicker you can pay these off, the quicker you can get compound interest working positively on your savings.

Extension

Question 1

a. Superannuation definition from Moneysmart - Money that you and your employers put into a special fund during your working life to provide you with money to live on when you retire.

b. Superannuation guarantee - currently 10.5% of an employee's gross income (as of November 2022).

c. The average Australian weekly gross (before tax) income for a full-time worker is $1,769.80.

As these figures can slightly change, please use the following links to cross check: ABS Average Weekly Earnings, Australia for the latest data.

Question 2

a. Total fortnightly gross income = $3,539.60

b. Estimate super balance (including fees) (age 67) = $619,378

c. Percentage of super as fees is approximately 23%

As figures may differ over time, check with your teacher for the most recent data.