

## Lesson 7

# Chapter 1: Investing concepts

**Recommended course:** Building the entrepreneurial mindset

**Recommended course code:** BEM10

**Previous course:** Introduction to business,  
Grade 9 or 10, Open

**Focus:** Personal finance

**Time:** One 75-minute period

**Topic:** The power of compounding



## Curriculum Connections

### OVERALL EXPECTATIONS:

- Demonstrate an understanding of income and spending issues facing individuals and businesses.
- Demonstrate an understanding of how banks and other financial institutions operate.
- Demonstrate an understanding of effective investment practices.
- Analyze the role and importance of credit in personal and business finance.

## Curriculum expectations

### A1.2

Use a project management process to manage the main aspects of a business project, including goals, key performance indicators, resources, delegation of tasks and responsibilities, progress of tasks, deadlines and risks, while demonstrating a leadership style appropriate to each situation.

### A1.3

Evaluate tasks and projects on a regular basis in terms of goals, key performance indicators and outcomes, taking into account feedback gathered from a variety of sources.

### A2.1

Identify a variety of existing and emerging digital technologies, tools and applications designed to support the completion of various business-related tasks and projects.

### A2.3

Select and use the most appropriate digital technologies, tools and applications to complete a variety of business-related tasks and projects.

### A3.1

Describe ways in which problem solving and creative and critical thinking can be applied to address local and global real-world opportunities and challenges.

### A3.4

Create and maintain a portfolio that illustrates business competencies and growth as an entrepreneur.

### C1.2

Research, synthesize and organize information from a variety of sources to support the topic and purpose of various business texts and to provide accurate and credible communication.

**BBI10/20 EXPECTATIONS:**

- Assess the factors that will affect the value of investments over time (e.g., compound interest, rate of inflation, diversification of portfolio).
- Explain the advantages and disadvantages of both consumer credit and business credit.
- Describe the process of establishing a credit rating and applying for and obtaining credit.
- Calculate the total cost of a variety of loans (e.g., balance carried on credit cards, car loan, mortgage).

**21<sup>ST</sup> CENTURY/GLOBAL COMPETENCIES:**

- Digital literacy: Selecting and using appropriate digital tools to collaborate, communicate, create, innovate and solve problems.
- Critical thinking and problem solving: The ability to analyze information, think critically and develop creative solutions to complex problems.
- Communication: Effectively conveying ideas, information and data through various mediums, including written, oral and visual communication.
- Collaboration and teamwork: Working effectively with diverse groups of people, recognizing the value of different perspectives, and achieving common goals.
- Financial literacy: Understanding basic financial concepts and the ability to make informed financial decisions.



## Assessment and evaluation

### Assessment/success criteria:

Students will

- use formulas to calculate simple and compound interest using a calculator and spreadsheet to consolidate understanding of compound interest
- compare returns of simple and compound interest over different time horizons
- make conclusions as to why compound interest allows individuals to earn more money
- understand why investing early and often, and diversifying, are effective strategies for managing risk and maximizing return
- demonstrate how compound interest can affect future loan balances

### Assessment tools: (Assessment FOR/AS learning)

- Observation (through observing students as they complete the investigation).
- Conversation (discuss before, during and after the investigation).
- Product (investigation worksheet may be collected and assessed, and exit card may be assessed).

## Prior learning

Prior to this lesson, students will have an understanding of

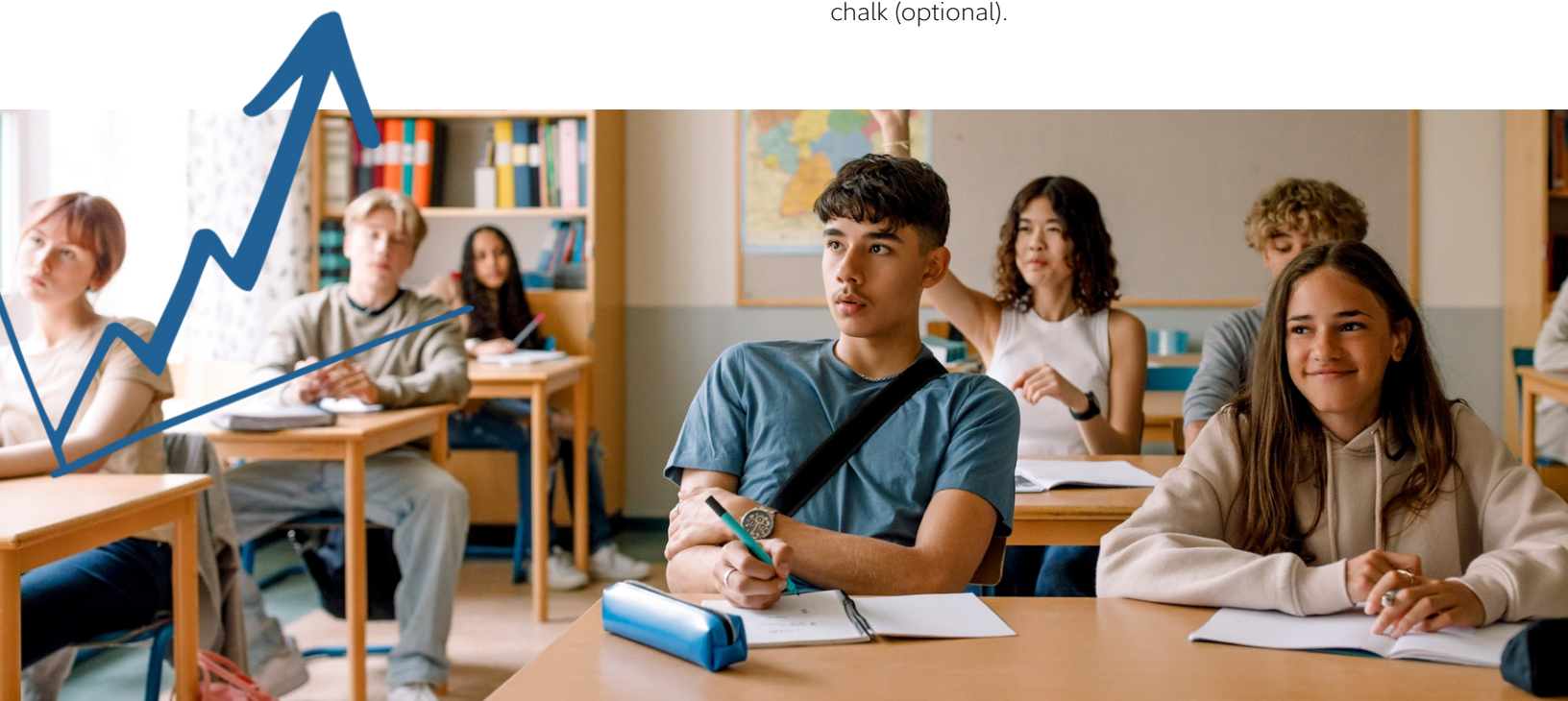
- the difference between saving and investing
- basic asset classes, including cash, equities, bonds, crypto, real estate
- the importance of setting goals and time horizons
- how to use Excel or another spreadsheet app

## Instructional strategies

- Direct instruction.
- Teacher modelling.
- Small group work.
- Class discussion.
- Presentation.
- Scaffolding.
- Questioning.
- Debate.

## Materials and resources

- Fake money or cheques.
- Handout with PowerPoint slides.
- Student devices with access to spreadsheet software.
- Whiteboard and whiteboard markers or blackboard and chalk (optional).





### MINDS ON (15 minutes)

1. Ask students, "Would you rather start with a penny and double your money daily for 30 days or have \$1 million?"
2. If students choose to take the \$1 million, give them \$1 million in fake money or a fake cheque.
3. Show students Slide 3; discuss any surprises.

Growth of a penny that doubles daily for 30 days			
Day	Amount	Day (cont'd)	Amount (cont'd)
1	\$0.01	16	\$327.68
2	\$0.02	17	\$655.36
3	\$0.04	18	\$1,310.72
4	\$0.08	19	\$2,621.44
5	\$0.16	20	\$5,242.88
6	\$0.32	21	\$10,485.76
7	\$0.64	22	\$20,971.52
8	\$1.28	23	\$41,943.04
9	\$2.56	24	\$83,886.08
10	\$5.12	25	\$167,772.16
11	\$10.24	26	\$335,544.32
12	\$20.48	27	\$671,088.64
13	\$40.96	28	\$1,342,177.28
14	\$81.92	29	\$2,684,354.56
15	\$163.84	30	\$5,368,709.12

4. Give the students who chose to start with a penny \$5,368,709.12 in fake money or a fake cheque.

**ACTION (20 minutes)**

1. Watch Money Gains: “The power of compounding”
2. Ask students:
  - a. What’s the difference between simple and compound interest?
  - b. Why does earning compound interest help protect against the effects of inflation?
  - c. How can compound interest hurt you if you are a borrower?
3. Introduce the compound interest formula on Slide 5.
4. Progress to Slide 6. Invite students to come up and show how much interest would be earned from simple vs. compound interest after ten, 20, 30 and 40 years.
5. Progress to Slide 7. Ask students, “What advice should young investors follow to take advantage of the power of compounding?”
6. Go through Slides 8–10, explaining the important of investing early, investing often, and diversifying.
7. Progress to Slide 11 and ask students about the benefits of using a credit card. Briefly discuss rewards and the importance of building a strong credit score.
8. Progress to Slide 12, and ask students how compound interest can hurt debtors. Prompt students to consider how compound interest can cause debt to grow significantly over time, especially when one is unable to pay off the full balance regularly. Prompt students to identify how credit cards often come with high-interest rates, and when compound interest is applied, it can make it challenging for individuals to escape the cycle of debt.
9. Go through Slides 13 and 14, to explain the dangers of compound interest when it comes to debt.
10. Navigate to Slide 15. Give students one minute to discuss and try to figure out how the compound interest formula would be altered to calculate monthly interest. Reveal the formula and explain.

**CONSOLIDATION AND CONNECTION (30 minutes)****Investigation:**

1. Navigate to Slide 16.
2. Explain to students that they will use Excel to calculate how long will it take to pay off a balance of \$1,000 on a credit card charging 20% interest per year, compounded daily, if you only pay \$30 per month.
3. Have students form their hypotheses: How many months will it take?
4. Have students work individually or as partners to calculate the number of months to pay off the balance. The teacher may choose to provide an Excel template that already has the table with embedded formulas created (sheet one in Excel file), or they may have the students start from a blank sheet.
5. Debrief as a class, by projecting Slide 17 and asking students how close their hypotheses were to the actual answer of 50 months.

## Homework

Students should complete a reflection that answers to following questions:

1. What is the difference between simple and compound interest?
2. What are three ways that you can use compound interest in your favour to maximize your investment returns?
3. As a borrower, how can compound interest hurt you? How can you avoid paying interest on credit card balances?

## Accommodations

- Students can be supported throughout these discussions through teacher prompts.
- Differentiated instruction:
  - Content will be provided auditorily and visually.
  - Differentiation through letting students choose which products to investigate during the “minds on,” and which scenarios to analyze, and how to present their findings.
- Provide organizers/notes:
  - Students will be provided with a handout with the compound interest formula and examples of how to calculate earned earned/accrued over time.
  - For the investigation, the teacher may provide students with an Excel template that provides the formulas and chart.
- Chunking/scaffolding: The teacher will model how to calculate compound interest using the PowerPoint slides.
- Students with anxiety about presenting may be accommodated by either presenting from their seat or presenting privately to the teacher.
- Peer learning partners: Strategic heterogeneous grouping (grouping students of various abilities) will help to better encourage conversation and collaboration learning skills as they help and advocate for each other in understanding and communicating their ideas.
- Extra time/adjust pace:
  - Students can complete the task for homework if needed.
  - The teacher can be available for extra help.

## References

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