Chapter 1: Investing concepts

Recommended Course: Grade 9 destreamed math

Recommenced Course Code: MTH1W

Strand: Financial literacy

Time: One 75-minute period

Topic: The difference between saving and investing

Curriculum Connections

OVERALL EXPECTATIONS:

- Build their financial literacy by learning to manage finances, such as working with budgets and understanding appreciation and depreciation of assets.
- Analyze various financial situations and learn how math can be applied to make informed decisions (for example, understanding shifts in the stock market).
- Examine how interest rates, down payments and other factors impact purchasing decisions.

SPECIFIC EXPECTATIONS:

- F1.1 identify a past or current financial situation and explain how it can inform financial decisions, by applying an understanding of the context of the situation and related mathematical knowledge.

21ST CENTURY/GLOBAL COMPETENCIES:

- 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 differentiate between saving and investing.
- Students will identify the benefits and risks associated with saving and investing.
- Students will apply their knowledge to make informed financial decisions.

Assessment tools: (Assessment FOR/AS learning)

- Questioning
- Observation
- Exit card

Prior learning

Prior to this lesson, students will have an understanding of how to

- construct a table of values
- represent linear equations graphically
- solve linear equations

Instructional strategies

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

Materials and resources

- Computer, speakers, classroom digital video projector, internet access, document camera (if not using chart paper)
- Video: "The difference between saving and investing" (embedded in slide deck)
- Whiteboard and markers, chalk and chalkboard, or equivalent
- PowerPoint presentation: "The difference between saving and investing" (embedded in slide deck)
- Student devices, classroom computers or shared computers, tablets, laptops, etc.
- Paper and pencil or chart paper and markers

MINDS ON (20 minutes)

GROUPS OF 2 OR 3: THINK, PAIR, SHARE (USE HETEROGENEOUS GROUPINGS)

1. Groups respond to these questions:
   - What are some things you would like to purchase in the near future?
   - Look up each item on the internet and find cost with sales tax.
   - Suggest plans to achieve your goal to purchase the item or items.
   - Brainstorm: What are some strategies to save for your future purchase?
   - Explain that today's lesson will delve deeper into these concepts and explore the benefits and risks of both saving and investing.

2. Facilitate a class discussion based on the group activity. Encourage students to share their findings and reasoning.

3. <u>Watch Money Gains</u>: *"The difference between saving and investing."*

4. Ask students:

   a. What is the difference between saving and investing?

   b. Why might someone choose to save money? Why might someone choose to invest money?

5. Review the concepts from the video with the PowerPoint slides.

6. Summarize the differences between saving and investing, emphasizing that saving involves setting aside money for future use, while investing entails using money to generate potential returns or profits.

7. Provide additional examples of saving and investing to ensure students have a clear understanding.

Note: All instructions, along with visual aids, will be explained by the teacher and also presented visually on PowerPoint slides.

ACTION (40 minutes)

PARTNER ACTIVITY: CASE STUDY

Groups select from one of the two scenarios below, and then students calculate how long it takes to achieve their goal given each of the savings and investing options below. Represent each savings and investment option using a table of values, linear equation and line graph.

Some suggestions for scenarios:

1. Your goal is to purchase a gaming computer that will cost you $2,550. You have $2,000 saved up. How long does it take to earn enough to buy the computer?

2. You start with $1,200 in your bank. How long will it take you to save money for a $1,800 vacation to Mexico?

Saving and investing options:

1. You keep your money under your mattress.

2. Savings account: You open a savings account with a simple annual interest rate of 3%.

3. Stocks: Your parents help you invest your money in the stock market. Your return on investment is 8% per year.

MONEY GAINS — **MAKING IT COUNT**

Note: We will set aside compound interest and concentrate solely on examining simple interest.

Example: Your goal is to purchase a car that costs $5,000. You have $4,000 saved up. You invest in the stock market and earn an average of 6% annually.

Represent with an equation:

Let "t" be the number of years it will take to reach your goal, and "FV" (Future Value) the total amount of money you have saved after "t" years. You start with $4,000, and your investment in the stock market earns 6% interest annually. So, the equation would be:

FV=4000+0.06*4000*t

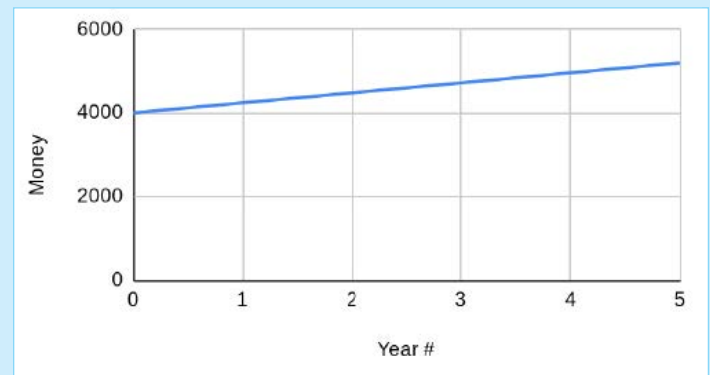Simplifying the equation:

FV=4000+240t

This equation represents the linear relationship between the number of years (t) and the amount of money you have saved (M).

Represent the situation with a table:

Year #	Money
0	4,000
1	4,240
2	4,480
3	4,720
4	4,960
5	5,200

Represent the situation graphically

Money vs. Year #

The point where the line intersects the y-axis (t=0) represents your initial savings of $4,000. The line has a slope of 240, which means you are saving an additional $240 each year.

To find out how many years it will take to reach your goal of $5,000, you can set FV equal to $5,000 and solve for t:

4000+240t=5000

Subtract 4000 from both sides:

240t=1000

Divide both sides by 240:

t=1000/240

t≈4.17

So it will take approximately 4.17 years to reach your goal of $5,000 with your initial savings of $4,000 and earning 6% annual interest in the stock market.

Low floor → Determine the time to buy the item with one savings and one investment option.

High ceiling → Determine how long it will take to achieve each goal if the price of the item increases by 4% each year.

CONSOLIDATION AND CONNECTION (15 minutes)

GROUP PRESENTATIONS:
While students are working through the action, select at least one pair for each scenario to prepare their solution for presentation to the class. Provide chart paper or document camera for presentation purposes. Students will show and explain which option allows them to achieve their financial goals more quickly.

Homework

INDIVIDUAL REFLECTION:
Students answer individually in their journals (home) or on an exit card:

- What is the difference between saving and investing?
- How can you reduce the amount of time it takes you to reach your savings goals?
- Why is investing riskier than savings?

Accommodations

- Offer extra support or guidance to struggling students during the group and individual activities.
- Use visual aids, such as charts or diagrams, to help visual learners understand the concepts better.
- Students can be supported throughout 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 they present their findings.

- Provide organizers/notes:
  - Students will be provided with a handout with a graphic organizer to display their scenarios using a table of values, linear equation and line graph.
- Chunking/scaffolding
  - The teacher will model how to perform risk analysis.
- 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 exit card for homework if needed.
  - The teacher can be available for extra help.

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