

Less Than Zero

By Stuart J. Murphy / ISBN: 978-0-06-000126-1

Lesson Authors

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Standards and Benchmarks (see page 8)

Lesson Description

In this lesson, students learn about saving, savings goals, interest, and borrowing by reading *Less Than Zero* by Stuart J. Murphy. Students use a number line and a line graph to track spending and borrowing in the story.

Grade Level

2-4

Concepts

Borrowing
Interest
Saving
Savings goal

Objectives

Students will be able to

- define borrowing, saving, savings goal, and interest;
- identify a savings goal;
- explain the difference between saving and borrowing; and
- use a line graph.

Time Required

60-90 minutes

Materials

- *Less Than Zero* by Stuart J. Murphy (ISBN: 978-0-06-000126-1)
 - Handout 1, one copy for each student and one copy for the teacher to use as a visual
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Procedure

1. Explain to the students that you will be teaching a lesson based on a story titled *Less Than Zero*. Ask the students what the title of the book might mean. (*Answers will vary.*)
2. Show students the cover of the book and tell them that the story is about a penguin, Perry, who is trying to save clams to buy a new scooter. Explain that clams for Perry are what pennies, other coins, and dollars are to us. Perry uses clams to buy goods and services.
3. Display *Handout 1: Line Graph*. Ask students what is pictured. (*A graph*) Explain that a graph is a picture that compares two sets of data.
4. Ask the students if they know the correct name or term for numbers that are “less than zero.” (*Negative, or minus, numbers*) Ask students if they know what negative numbers would represent with money. (*Answers will vary.*) Explain that negative numbers with respect to money mean that a person owes money to someone else or that a person spent money that wasn’t his or hers.
5. Distribute a copy of Handout 1 to each student.
6. Begin reading the story. Stop at the end of page 5 and ask the following questions:
 - What did Perry want to buy? (*A scooter*)
 - How much does a scooter cost? (*Nine clams*)
 - What did Perry’s dad say Perry would have to do to buy a scooter? (*Save nine clams.*)
 - How many clams did Perry have? (*Zero*)
7. Tell the students that **saving** means not spending money now but instead keeping the money to buy things in the future. Perry had a **savings goal**. Perry’s goal was to buy a scooter. People usually save with a savings goal in mind. A savings goal is a good or service that you want to buy in the future.

8. Begin reading again. Stop at the end of page 9 and ask the following questions:
 - What did Perry do to earn four clams? (*Perry worked for his mother.*)
 - What kind of graph is Perry making? (*A line graph*)

9. Display Handout 1 again. Tell students that they will create a graph like Perry's. Enter the following on Handout 1 and have students work individually on their graphs.
 - On the left-hand side of the graph, number the lines (not the spaces) from 1-10, going up from 0.
 - On the blank line along the left-hand side, label the y-axis "Number of Clams."
 - On the blank line at the bottom, label the x-axis "Days of the Week."
 - Perry had zero clams on Sunday, so place a dot at the coordinates "Sunday, 0."
 - Perry had four clams on Monday, so place a dot at the coordinates "Monday, 4."
 - Connect the dots.

10. Begin reading again. Stop at the end of page 13 and ask the following questions:
 - On Tuesday, did Perry spend or save? (*Spend*)
 - On what did Perry spend his clams? (*The Ice Circus*)
 - Why does Perry say that he has minus one clam? (*Perry owes Fuzzy one clam.*)
 - How can we show on the graph that Perry had minus one clam? (*Model on your copy of Handout 1: Below the zero line, write numbers -1 to -3 and have students do the same. Place a dot at "Tuesday, -1" and then connect the dots.*)

11. Begin reading again. Stop at the end of page 17 and ask the following questions:
 - The next day, Wednesday, did Perry spend or save? (*Spend*)
 - How did Perry pay for a fishy treat? (*He borrowed two clams from Baldy.*)
 - After borrowing from Baldy, how many clams less than zero was Perry? (*Three*)

12. Show the picture on page 17. On your copy of Handout 1, place a dot at "Wednesday, -3" and have students fill in their graphs.

13. Explain that **borrowing** and saving are opposites. When people save, they put money away to spend in the future. When people borrow, they take money from another person and promise to repay the money in the future. Borrowers then spend the borrowed money now. Perry borrowed from Baldy and will have to repay Baldy in the future.

14. Begin reading again. Stop at the end of page 21 and ask the following questions:
 - Why didn't Perry want to go outside? (*Perry's friends all had scooters and he didn't.*)
 - Where did Perry find a clam? (*Under the couch*)
 - What did Perry do after he found the clam? (*Perry started a clam search.*)
 - How many clams did Perry find on his search? (*Eight clams*)
 - How many clams will Perry have after he repays Baldy and Fuzzy? (*Five clams*)
15. Show the picture on page 21. On your copy of Handout 1, place a dot at "Thursday, 5" and have the students fill in their graphs.
16. Ask the students why Perry wished he hadn't borrowed the three clams. (*If Perry hadn't borrowed the clams, he would have eight clams and would need to save only one more to buy a scooter.*)
17. Begin reading again. Stop at the end of page 25 and ask the following questions:
 - What happened? (*Perry lost all eight clams.*)
 - What do you think will happen next? (*Answers will vary.*)
18. On your copy of Handout 1, place a dot at "Friday, -3" and have the students fill in their graphs.
19. Finish reading the story. Ask the following questions:
 - What happened? (*Mr. Spike found the lost clams and gave them to Perry.*)
 - How did Perry get the rest of the clams he needed to buy the scooter? (*Mr. Spike gave Perry the clams, but Perry agreed to work for Mr. Spike.*)
 - How many clams did Perry earn each day for shoveling snow? (*One clam*)
 - How many days did he have to work to reach a total of nine clams? (*Four days*)
20. On your copy of Handout 1, place a dot at "Saturday, 5" and have the students fill in their graphs.
21. Ask the students if they have ever had a savings goal like Perry's. (*Answers will vary.*) Explain that people save to buy things in the future. Ask the students to identify a savings goal—something for which they would like to save. Suggest to the students that they can begin to save coins in a piggy bank, jar, or small box. When the container is full, they can have a relative take them to a bank to open a savings account with the money saved.

22. Explain to the students that when people save in a savings account at a bank, the bank pays **interest**. Interest is money a bank pays its customers for keeping their savings in that bank. Earning interest from the bank helps people reach their savings goals more quickly.
23. Discuss the following:
- How would putting his clams in a savings account at a bank have helped Perry? (*Answers will vary, but should include the following: Perry would have earned interest, so he would have reached his goal more quickly. His money would have been safe. He wouldn't have lost his eight clams. He would have been less tempted to spend the clams if they were in the bank.*)
 - How did borrowing for the Ice Circus and for fishy treats keep Perry from reaching his goal? (*Before Perry could continue saving money for the scooter, he had to earn money to repay what he borrowed, so it took him longer to reach his goal.*)
24. Have students create and write their own titles on their graphs.
25. Display students' graphs on a bulletin board titled *Perry's Saving Story*.
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Closure

26. What is saving? (*Saving is not spending money now but instead keeping the money to buy things in the future.*)
27. What is a savings goal? (*A savings goal is a good or a service that you want to buy in the future.*)
28. What is interest? (*Interest is money a bank pays its customers for keeping their savings in that bank.*)
29. What is the difference between saving and borrowing? (*When people save, they put money away to spend in the future. When people borrow, they take money from another person and promise to repay the money in the future. Borrowers then spend the borrowed money now.*)

Assessment

30. Ask the students to complete one or both of the following:

- Write a paragraph describing what advice Perry should give to other penguins who want to buy something but don't have the money to do so. Include the ideas of saving, savings goal, interest, and borrowing.
- Write about a time when you had to borrow money to buy something or for an activity (a "less than zero" experience). In your story, explain why borrowing is the opposite of saving. Include how you repaid the loan. If you have never borrowed, write a fictional story that involves borrowing.

Handout 1: Line Graph

Title: _____



Standards and Benchmarks

National Standards in Economics

Standard 10: Institutions evolve and are created to help individuals and groups accomplish their goals. Banks, labor unions, markets, corporations, legal systems, and not-for-profit organizations are examples of important institutions. A different kind of institution, clearly defined and enforced property rights, is essential to a market economy.

- **Benchmark 2, Grade 4:** Saving is the part of income not spent on taxes or consumption.

National Standards in Personal Finance

Saving and Investing Overall Competency: Implement a diversified investment strategy that is compatible with personal goals.

- **Benchmark 1, Grade 4:** People save for future financial goals.
- **Benchmark 2, Grade 4:** Every saving decision has an opportunity cost.

Planning and Money Management Overall Competency: Organize personal finances and use a budget to manage cash flow.

- **Benchmark 2, Grade 4:** People pay for goods and services in different ways.

Credit and Debt Overall Competency: Maintain creditworthiness, borrow at favorable terms, and manage debt.

- **Benchmark 2, Grade 4:** Borrowing money to buy something usually costs more than paying cash, because there is a fee for credit (interest).
- **Benchmark 3, Grade 4:** Responsible borrowers repay as promised, showing that they are worthy of getting credit in the future.

Common Core State Standards: English Language Arts, Grades 2-4

Reading: Literature

- **Key Ideas and Details**

RL.2.1, RL.3.1, RL.4.1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

RL.3.2, RL.4.2: Determine a theme of a story, drama, or poem from details in the text; summarize the text.

RL.2.3, RL.3.3, RL.4.3: Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).

- **Craft and Structure**

RL.3.4, RL.4.4: Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).

- **Integration of Knowledge and Ideas**

RL.3.7, RL.4.7: Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.

Writing

- **Text Types and Purposes**

W.2.1, W.3.1, W.4.1: Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

W.4.1a: Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.

W.4.1b: Provide reasons that are supported by facts and details.

W.2.3, W.3.3, W.4.3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

W.4.3a: Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.

Speaking and Listening

- **Comprehension and Collaboration**

SL.2.2, SL.3.2, SL.4.2: Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

Common Core State Standards: Mathematics

Operations & Algebraic Thinking, Grade 2

- **Add and subtract within 20.**

2.OA.B.2: Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

Measurement & Data, Grade 4

- **Represent and interpret data.**

4.MD.B.4: Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*