

Calculating Interest

Lesson Plan

Grade Level: 3-5

Curriculum Focus: Ratio, Proportion, and Percent

Lesson Duration: One class period

Student Objectives

- A bank pays interest to people who put money in it.
- A bank charges interest to people who borrow money from it.
- A bank charges higher interest to borrowers than it pays to savers.
- Calculate interest amounts.

Materials

- Discovery School video on *unitedstreaming: Math:: Kids and Cash*
Search for this video by using the video title (or a portion of it) as the keyword.

Selected clips that support this lesson plan:

- Segment 1: What's a Bank?
- Paper and pencils

Procedures

1. Ask students what a bank is and why people put some of their money in banks. Elicit from students that two reasons are:
 - to protect the money from thieves; and
 - to make more money by getting interest from the bank.
2. It's important for students to understand what *interest* means. Define interest as "a fee paid for borrowing money." Explain that when a person puts his or her money in the bank, the bank is, in a sense, borrowing the person's money. The bank uses the person's money by lending it to other people or companies. The bank charges interest to the people it lends money to and pays interest to those who put money in the bank. Show students an example such as the following:
 - John puts \$100 in the bank for a year.
 - During that year, the bank lends John's \$100 to Mary. At the end of the year, Mary gives the bank the \$100 plus the interest she must pay, so she gives the bank \$108.

- At the end of the year, John takes out the \$100 he put in earlier plus the interest it earned, so he gets \$105.
3. Ask students, "How much money did the bank make on John's \$100 during the year?" Or ask, "Why does the bank charge Mary \$8 but pay John only \$5?"
 4. Now explain that interest is expressed as a percent. The bank says to John, "If you give us your money for a year, we will give you 5 percent interest at the end of the year. So you will earn \$5 on your \$100." The bank says to Mary, "If you want us to give you money for one year, you will have to give us 8 percent interest at the end of the year. So you will have to pay us back \$108."
 5. Make sure students understand why the bank needs to make money.
 6. Ask students to assume that they each earned \$100 for a job they did. Tell them to figure out in which bank to put their money for at least one year. Here are the details:
 - Bank of Elmont pays 5 percent at the end of the year to someone who starts a new account. Bank of Elmont is in walking distance.
 - Bank of Honeyville pays $5\frac{1}{2}$ percent at the end of the year to someone who starts a new account. It will cost 50 cents to take the bus each way to make the deposit in Honeyville and another 50 cents each way at the end of the year to take out the money and interest.
 - Bank of Lextown pays $4\frac{1}{2}$ percent at the end of the year to someone who starts a new account. In addition, Bank of Lextown will give you a mousepad that it says is worth \$2. Bank of Lextown is also in walking distance.
 7. Ask students to explain how to compare the three banks. They should come up with the following reasoning:
 - If I put my money in Bank of Elmont, at the end of the year, I will have \$105.
 - If I put my money in Bank of Honeyville, at the end of the year, I will have \$105.50, but I will have spent \$2 in bus fare, so I will have only \$103.50.
 - If I put my money in Bank of Lextown, at the end of the year, I will have \$104.50 and a mousepad worth \$2.00.
 8. Ask students to decide which bank they would choose based on the preceding analysis. The class may split between students who choose Elmont and students who choose Lextown. (The choice may depend on whether or not a student needs a mousepad.)
 9. Give students the following problem to work out in writing:
 - Bank of Midtown will pay 4 percent interest and has a setup that allows you to check on your account by phone or online. The bank is in walking distance.
 - Bank of Downtown will pay 5 percent interest on a new account. This bank does not yet have a system that allows you to check on your account by phone or online. The bank is in walking distance.

- Bank of Uptown will pay you 5 percent interest. To deposit your money there, you will use the U.S. Mail; to take your money out at the end of the year, you will spend \$1 in roundtrip bus fare.

10. In writing, tell which bank you will put your money in, and explain your reasoning. Consider how much money you will wind up making. Consider other factors such as convenience.

Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- 3 points: Student's arithmetic is accurate; student shows that he or she has considered numbers as well as other factors such as services and convenience; student's writing is error-free.
- 2 points: Student's arithmetic is accurate; student does not acknowledge other factors such as services and convenience; student's writing has a few errors.
- 1 point: Student does not show grasp of the necessary arithmetic; student does not acknowledge factors such as services and convenience; student's writing has many errors.

Vocabulary

auction

Definition: A sale where items are sold to the person who bids the greatest amount for the item.

Context: At the Tokyo fish market, restaurant wholesalers purchase fish at an auction.

counterfeit

Definition: To forge or make a copy of something.

Context: Engravers create intricate portraits, signatures, and numbers so that it's as difficult as possible to counterfeit money.

denomination

Definition: A specific unit of value in a monetary system.

Context: At the store, purchases can be made with any denomination of coins, as long as they add up to the right amount.

deposit

Definition: Something that is put away to be kept safe.

Context: Tellers help with bank transactions, such as making a deposit or withdrawal.

die

Definition: A device used to cut out, cast, pattern or stamp articles.

Context: A die is put into the coin press to stamp the design on a coin.

interest

Definition: Money charged for a loan.

Context: Banks make money by charging interest on all loans.

reserve

Definition: Something that is set aside for future use, such as savings or resources.

Context: By law, every bank in the country must keep some of its money on reserve.

wampum

Definition: Small beads made from polished clam shells threaded on a string or made into a belt.

Context: The darker the wampum, the more valuable it was in trade.

withdrawals

Definition: Something that is taken away or removed.

Context: Tellers help with bank transactions, such as making deposits or withdrawals.

Academic Standards

Mid-continent Research for Education and Learning (McREL)

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit <http://www.mcrel.org/>.

This lesson plan addresses the following national standards:

- Economics: Understands basic features of market structures and exchanges.
- Mathematics: Understands and applies basic and advanced properties of the concepts of numbers.

Support Materials

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the [Discoveryschool.com](http://www.discoveryschool.com) Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- <http://school.discovery.com/teachingtools/teachingtools.html>

