

10-12 – Extension Activity for *Borrowing Basics*

Specific Outcome(s)

- Career and Life Management
 - R8. Evaluate the advantages and disadvantages of credit
 - Examine the costs of using credit, the dangers of overextended buying and the impact of credit ratings
- Mathematics 20-3
 - N3. Demonstrate an understanding of compound interest
 - N5. Demonstrate an understanding of credit options, including
 - Credit cards
 - Loans

At the end of this extension activity, students will be able to define and calculate simple interest.

Materials Needed

- Calculators

Materials Provided

- Calculating Simple Interest handout
- [Understanding interest rates](#) by CBC Kids News

Logistics

- Photocopy the Calculating Simple Interest handout 😊
 - Print enough copies for each student.
- Prepare to project the video on the whiteboard/screen for students to see.

Procedure

- Ask students what they already know about credit and interest. Then, ask them what they'd like to learn about credit and interest.
- Review what interest is.
 - Tell students about annual percentage rate (APR).
 - To know how much it costs to borrow money, find out the annual percentage rate (APR). This is the actual rate of interest charged on a loan each year, and it's calculated using standard rules.
 - A lender must tell you the APR before you sign a loan agreement.
 - Discuss variable and fixed interest rates.
 - Variable interest means your interest rate rises and falls with the bank's prime rate.

- Fixed interest means you pay the same interest rate for the entirety of your term.
 - Play the video and pause frequently to reiterate what is being said.
 - Share the difference between simple interest and compound interest.
 - Simple interest is charged only on the principal amount.
 - Compound interest, on the other hand, is interest charged on both the original principal amount and any interest previously accrued. Compound interest is interest on interest!
 - Emphasize that having higher interest rates and more frequent compounding periods means it will cost more to repay loans.
- Give students time to answer the provided questions. They only need to use the formula $I = Prt$.
 - Depending on students' confidence with this formula, you may want to review what each variable is and how to use it.
 - I is interest
 - P is the principal
 - r is the interest rate
 - t is time
 - You may want to guide them through the questions on the back of the handout using the answer key; they are more difficult to solve.
 - Circulate and help students as needed.
- When ready, review the answers with students and what they have learned throughout the lesson. Thank them for their hard work.

Calculating Simple Interest

Use the following formula to calculate simple interest.

$$I = Prt$$

Match each variable to its value.

<u>Variable</u>	<u>Value</u>
Principal	\$500.00
Interest	3.90%
Time	3 years
Rate	\$58.50

Calculate the amount of simple interest on each of the following principal amounts at the rate and term given. **Show all work.**

1. Principal: \$5,000.00 Rate: 2.00% Term: 1 year

2. Principal: \$5,000.00 Rate: 3.00% Term: 1 year

3. Principal: \$5,000.00 Rate: 3.12% Term: 1 year

4. Principal: \$5,000.00 Rate: 4.62% Term: 1 year

What is the total cost of a \$300.00 loan after 2 years? The simple interest rate is 2.65%. **Show all work.**

Maizie is charged 19.50% per annum on her credit card balances. She uses her credit card, which has no previous balance, to purchase a new fridge that costs \$1,783.95. Her next credit card statement is dated March 30, and she pays on the minimum payment (3% of her balance). How much money will Maizie owe on April 5? She makes no other purchases with her credit card. **Show all work.**

Amit charges a cash advance of \$325.00 to his credit card. This withdrawal appears on his monthly statement issued June 5. The next monthly statement is issued on July 5. Amit's bank charges 27.99% annual interest for cash advances starting on the day of the withdrawal. Calculate the interest that Amit is charged for the June 5 cash advance. **Show all work.**

Calculating Simple Interest

Use the following formula to calculate simple interest.

$$I = Prt$$

Match each variable to its value.

<u>Variable</u>		<u>Value</u>
Principal	—————	\$500.00
Interest	—————	3.90%
Time	—————	3 years
Rate	—————	\$58.50

Calculate the amount of simple interest on each of the following principal amounts at the rate and term given. **Show all work.**

1. Principal: \$5,000.00 Rate: 2.00% Term: 1 year

$$I = Prt$$

$$I = (\$5,000.00)(0.02)(1)$$

$$I = \$100$$

2. Principal: \$5,000.00 Rate: 3.00% Term: 1 year

$$I = Prt$$

$$I = (\$5,000.00)(0.03)(1)$$

$$I = \$150$$

3. Principal: \$5,000.00 Rate: 3.12% Term: 1 year

$$I = Prt$$

$$I = (\$5,000.00)(0.0312)(1)$$

$$I = \$156$$

4. Principal: \$5,000.00 Rate: 4.62% Term: 1 year

$$I = Prt$$

$$I = (\$5,000.00)(0.0462)(1)$$

$$I = \$231$$

What is the total cost of a \$300.00 loan after 2 years? The simple interest rate is 2.65%. Show all work.

$$I = Prt$$

$$I = (\$300.00)(0.0265)(2)$$

$$I = \$15.90$$

Maizie is charged 19.50% per annum on her credit card balances. She uses her credit card, which has no previous balance, to purchase a new fridge that costs \$1,783.95. Her next credit card statement is dated March 30, and she pays on the minimum payment (3% of her balance). How much money will Maizie owe on April 5? She makes no other purchases with her credit card. Show all work.

$$\$1,783.95 \times 0.03 = \$53.52$$

$$\$1,783.95 - \$53.52 = \$1,730.43$$

$$I = Prt$$

$$I = (\$1,730.43)(0.1950)(6 \div 365)$$

$$I = \$5.55$$

$$A = \$1,730.43 + 5.55$$

$$A = \$1,735.98$$

Amit charges a cash advance of \$325.00 to his credit card. This withdrawal appears on his monthly statement issued June 5. The next monthly statement is issued on July 5. Amit's bank charges 27.99% annual interest for cash advances starting on the day of the withdrawal. Calculate the interest that Amit is charged for the June 5 cash advance. Show all work.

$$I = Prt$$

$$I = (\$325.00)(0.2799)(30 \div 365)$$

$$I = \$7.48$$