EXTENSION ACTIVITY 2 │ 20 minutes

Interest in Your Favor

CCSS Math 5 NBT 7

MATERIALS

- ❏ Citizen Guides
- ❏ Illustration FL-4G, Interest in Your Favor
- ❏ Optional: Online compound interest calculator

1. Ask students if they can tell you the key difference between a credit card and all other methods of payment. (With cash, checks, and debit cards, payments come from money you have; with a credit card, you make payments later for money you borrow now.)

2. Inform your class that using a credit card is a choice some people make to purchase the goods and services they want now. Using a credit card may seem like a quick solution. But when you use a credit card, you will likely pay more for the purchase because you have to pay interest, a fee to borrow the money.

3. To illustrate this point, project or display Page 97, Illustration FL-4G, Interest in Your Favor, and have the students turn to their Citizen Guides, Page 25. (Answer key is on Page 98.) Walk the class through the calculator charts, using the following helps and talking points to discuss the cost of buying a mountain bike on credit or saving for it and using the power of compound interest. Refer to the compound interest calculator chart for questions a through c and the credit card calculator chart for d and e.

   a. To find out how long it would take to save $400 to buy the mountain bike, divide: 400/16 = (25 months).

   b. Locate the balance on the compound interest calculator. ($403.62)

   c. To find the total interest, subtract the total deposit from the balance: $ 403.62 – $400 = ($3.62).

      • If students comment that $3.62 is not much in interest, mention that if they continued to save at this same rate, in 10 years they

would have $2,025.77. Also, while interest rates are low now on savings accounts, that has not always been the case historically and may not be in the future.

- In 20 years, if students kept saving that $16 a month and used the power of compound interest, they would have $4,224.73, enough to buy a used car instead of a bike.

d. Now, if students choose to buy the bike on credit, how long would it take to pay off the $400 loan? Use the amount from the "Months to Pay" line on the chart. (32 months)

e. To calculate the interest they would pay at an 18 percent interest rate, subtract the $400 price of the bike from the total payments: $505.12 – $400 = ($105.12). **Note to teacher:** The final monthly payment will be $9.12 because of compound interest.

4. Show students that the interest paid using a credit card was more than a quarter of the value of the bike.

- 105/400 = .2625; .25 = 1/4

- Not only would buying the bike on credit be more expensive, it would take nine months longer of paying $16.00 a month to own it free and clear.

5. Ask students if they think getting the bike sooner is worth the extra money they would spend.

INTEREST IN YOUR FAVOR

You want a new mountain bike that costs $400. You need to decide if you want to buy the bike now using credit, or wait and save the money to buy the bike, meanwhile earning interest on your savings. You know that you can afford about $16.00 a month from your allowance and lawn jobs.

EARNING INTEREST

You decide to save $16.00 a month to buy the bike. Every month you put $16.00 into a savings account, you earn 0.9 percent interest, compounded monthly.

    a.   How many months will it take to save $400? _____

    b.   What will the balance be at the end of the savings period? _____

    c.   How much will you earn in interest? _____

COMPOUND INTEREST CALCULATOR	
Current Principal:	$16.00
Annual Addition:	$192.00
Years to Grow:	2
Interest Rate:	0.9%
RESULTS	
Balance:	$403.62

PAYING INTEREST

You decide to buy the bike now using a credit card. You will pay $16.00 a month to the credit card company. The company will charge 18% interest to borrow the $400.

    d.   How many months will it take to pay off the loan? _____

    e.   How much will you pay in interest? _____

CREDIT CARD CALCULATOR	
Current Debt:	$400
Interest Rate:	18%
Your Monthly Payments:	$16
RESULTS	
Months to Pay:	32
Total Payments:	$505.12

INTEREST IN YOUR FAVOR

You want a new mountain bike that costs $400. You need to decide if you want to buy the bike now using credit, or wait and save the money to buy the bike, meanwhile earning interest on your savings. You know that you can afford about $16.00 a month from your allowance and lawn jobs.

EARNING INTEREST

You decide to save $16.00 a month to buy the bike. Every month you put $16.00 into a savings account, you earn 0.9 percent interest, compounded monthly.

    a.   How many months will it take to save $400? _____**25**_____
    b.   What will the balance be at the end of the savings period? _____**$403.62**_____
    c.   How much will you earn in interest? _____**$3.62**_____

COMPOUND INTEREST CALCULATOR	
Current Principal:	$16.00
Annual Addition:	$192.00
Years to Grow:	2
Interest Rate:	0.9%
RESULTS	
Balance:	$403.62

PAYING INTEREST

You decide to buy the bike now using a credit card. You will pay $16.00 a month to the credit card company. The company will charge 18 interest to borrow the $400.

    d.   How many months will it take to pay off the loan? _____**32**_____
    e.   How much will you pay in interest? _____**$105.12**_____

CREDIT CARD CALCULATOR	
Current Debt:	$400
Interest Rate:	18%
Your Monthly Payments:	$16
RESULTS	
Months to Pay:	32
Total Payments:	$505.12

Teacher note: The final monthly payment will be $9.12

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