



# MOUNTAIN MONEY ADVENTURES

Teen Camp

Ages  
13-19

## Teens and Credit

{ <http://youth.macu.com> }

Mountain America Credit Union knows that it's never too early to start learning critical money management skills. That's why we've put this information together for teachers and educators to use. *Educating today's youth for a better tomorrow.*



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## Teens and Credit



**Unit Concept:** These lessons will teach teenage learners that credit use has benefits, risks and responsibilities. Students will be able to differentiate between taking out loans for long-term needs, like education and housing, and using credit cards to pay for consumer items.

These lessons are designed to compliment your state standards and are based on recommended Standards from the National Council of Teachers of Mathematics:

### Content Standards:

**Numbers and Operations:** Students will be able to perform computations in different ways. Students should be able to explain their method, understand that many methods exist and see the usefulness of methods that are efficient, accurate and general.

**Data Analysis and Probability:** Students will learn to formulate questions and collect, organize and display relevant data.

**Process Standards:** Students will see mathematical connections in the rich interplay among mathematical topics, in contexts that relate mathematics to other subjects and in their own interests and experience.

And from the National Council on Economic Education's National Standards:

**Standard 10: Role of Economic Institutions:** Students will learn that institutions evolve in market economies to help individuals and groups accomplish their goals. Banks, labor unions, corporations, legal systems and not-for-profit organizations credit unions, are examples of important institutions.

**Standard 12: Role of Interest Rates:** Students will understand that interest rates, adjusted for inflation, rise and fall to balance the amount saved with the amount borrowed, which affects the allocation of scarce resources between present and future uses.

**Lesson Objectives:** Students will understand how interest affects the cost of borrowing on credit.

Students will understand the difference between consumer loans and credit cards.

Students will understand that using credit responsibly will positively impact future buying power.

**Brain Warmers:**

**Credit and Card Cards**

1. When is it a good idea to borrow? To lend?
2. If you lend something to a friend, what responsibilities do they have?
3. When might it be a good idea to buy something with money you don't have (credit)? Is it ever? When would it be a bad idea?
4. If a credit card company gives you a credit limit of \$5,000, what does that mean? Does it mean you can go out and spend that money? What would the consequences be?

**Consumer Loans**

1. What are the biggest purchases you expect to make in your lifetime? How long do you think it would take you to save for these purchases?
2. Could you purchase these items with a credit card?
3. Why do you think lenders are willing to loan large amounts of money?
4. What benefits and risks do you imagine you would experience from taking out a consumer loan?

**Main Points**

- Credit means borrowing money and paying it back at a different time. Your ability to be approved for credit is dependent on your money management history.
- Banks and credit unions evaluate your ability to qualify for credit on your payment history, amount of credit owed and cash on hand. Not everyone qualifies for credit.
- Teens can establish a positive credit history by careful management of a checking account with their bank or credit union.
- Financial institutions lend people money for things like college, buying a home, buying a car or paying off credit cards.
- Credit cards typically charge a higher interest rate than banks and credit unions.
- The interest rate you are offered depends on your credit history.
- A higher interest rate, or taking longer to pay off a loan, will cost you more money over time.

Student Handout 1

Name \_\_\_\_\_

**Lesson #1: Paying for Credit**

Credit cards work on compound interest. That means a percentage is added to both the principal (the amount of your loan or purchase) and to the interest that has already been added to the principal amount. That is why credit cards take such a long time to pay off.

Look at these two examples of different ways interest can be calculated.

**Simple Interest paid on a \$200 loan at 3%**

Quarter	Amount	Interest Paid	Total Amount Owed
1	\$200	3%	$(200 \times .03) + 200 = 206$
2	\$200	3%	$(200 \times .03) + 206 = 212$
3	\$200	3%	$(200 \times .03) + 212 = 218$
4	\$200	3%	$(200 \times .03) + 218 = 224$

**Compound Interest paid on a \$200 loan at 3%**

Quarter	Amount	Interest Paid	Total Amount Owed
1	\$200	3%	$(200 \times .03) + 200 = 206$
2	\$206	3%	$(206 \times .03) + 200 = 212.18$
3	\$212.18	3%	$(212.18 \times .03) + 212.18 = 218.54$
4	\$218.54	3%	$(218.54 \times .03) + 218.54 = 225.10$

*\*Note that the base amount changes in compound interest, while it remains constant in simple interest.*

1) If you loaned someone money, what type of interest would you prefer to receive? Explain why.

2) What type would you prefer to pay on a loan? Explain why.

3) Most consumer and credit card loans have rates much higher than 3%. Some are as high as 18% or even 24%. Explain why it would take you longer to pay off the \$200 loan at these higher rates.

**Lesson #2: Paying for Credit**

Name \_\_\_\_\_

You have just bought an iPod, and you paid for it with your shiny new credit card. At a list price of \$150, plus sales tax of 10.50, that's \$160.50 to christen your new card. Let's figure out how much your iPod really costs you in the end. Your interest rate on the card is 18%.

**Compounding Interest Chart**

Month	Amount	Interest Paid	Total Amount Owed
1	160.50	18%	$(160.5 \times .015) + 160.5 = 162.91$
2	162.91		
3			
4			

To figure out compound interest:

1. Multiply your principal and any accrued interest (the number in the amount column) by the percentage of interest. In month one it's .015:  
 $160.50 \times .015 = 2.41$      $160.50 + 2.41 = 162.91$
2. Add this amount in the total column.
3. Continue. Be certain to start each calculation with the new total.

1) Complete the chart

2) What would the total cost of the iPod be if you allowed interest to accrue for four month without making payments?

3) What was the amount of interest charged the first month?

Second?

Third?

Fourth?

Student Handout 3

Name \_\_\_\_\_

**Lesson #3 Paying for Credit**

Month	Amount	Interest Paid	Total Amount Owed
1	\$95	18%	
2			
3			
4			

1) You put \$100 on your credit card for football tickets. Use the above chart to figure out what your balance will be if you only pay off \$5 the first month. Continue to fill in the chart assuming a \$5 payment each month.

2) How much interest have you paid at the end of four months?

$$1.43 + 1.37 + 1.32 + 1.26 = 5.38$$

- Tip: start with your reduced amount.

3) The more you put on your card the more interest you will pay. If you decided to buy a new \$3,500 computer on a credit card at 18% how much would your first payment be? Use only the principal as your starting figure.

What part of this is interest?

Teacher Reference 1

### Lesson #1: Paying for Credit

Credit cards work on compound interest. That means a percentage is added to both the principal (the amount of your loan or purchase) and to the interest that has already been added to the principal amount. That is why credit cards take such a long time to pay off.

Look at these two examples of different ways interest can be calculated.

#### Simple Interest paid on a \$200 loan at 3%

Quarter	Amount	Interest Paid	Total Amount Owed
1	\$200	3%	$(200 \times .03) + 200 = 206$
2	\$200	3%	$(200 \times .03) + 206 = 212$
3	\$200	3%	$(200 \times .03) + 212 = 218$
4	\$200	3%	$(200 \times .03) + 218 = 224$

#### Compound Interest paid on a \$200 loan at 3%

Quarter	Amount	Interest Paid	Total Amount Owed
1	\$200	3%	$(200 \times .03) + 200 = 206$
2	\$206	3%	$(206 \times .03) + 200 = 212.18$
3	\$212.18	3%	$(212.18 \times .03) + 212.18 = 218.54$
4	\$218.54	3%	$(218.54 \times .03) + 218.54 = 225.10$

*\*Note that the base amount changes in compound interest, while it remains constant in simple interest.*

1) If you loaned someone money, what type of interest would you prefer to receive? Explain why.

**Compound. You'd receive more interest.**

2) What type would you prefer to pay on a loan? Explain why.

**Simple. You'd pay less interest.**

3) Most consumer and credit card loans have rates much higher than 3%. Some are as high as 18% or even 24%. Explain why it would take you longer to pay off the \$200 loan at these higher rates.

**Your interest would be higher, and it would accrue more quickly.**

Teacher Reference 2

### Lesson #2 Paying for Credit

Name \_\_\_\_\_

You have just bought an iPod, and you paid for it with your shiny new credit card. At a list price of \$150, plus sales tax of 10.50, that's \$160.50 to christen your new card. Let's figure out how much your iPod really costs you in the end. Your interest rate on the card is 18%.

#### Compounding Interest Chart

Month	Amount	Interest Paid	Total Amount Owed
1	160.50	18%	$(160.5 \times 0.015) + 160.5 = 162.91$
2	162.91	18%	$(162.91 \times 0.015) + 162.91 = 165.35$
3	165.35	18%	$(165.35 \times 0.015) + 165.35 = 167.83$
4	167.83	18%	$(167.83 \times 0.015) + 167.83 = 170.35$

To figure out compound interest:

- Multiply your principal and any accrued interest (the number in the amount column) by the percentage of interest. In month one it's .015:  
 $160.50 \times 0.015 = 2.41$      $160.50 + 2.41 = 162.91$
- Add this amount in the total column.
- Continue. Be certain to start each calculation with the new total.

1) Complete the chart

2) What would the total cost of the iPod be if you allowed interest to accrue for four months without making payments? **170.35**

3) What was the amount of interest charged the first month? **2.41**

Second? **2.44**

Third? **2.48**

Fourth? **2.52**

**Lesson #3: Paying for Credit**

Month	Amount	Interest Paid	Total Amount Owed
1	\$95	18%	$(95 \times 0.015) + 95 = 96.43$
2	$96.43 - 5 = 91.43$	18%	$(91.43 \times 0.015) + 91.43 = 92.80$
3	$92.80 - 5 = 87.80$	18%	$(87.8 \times 0.015) + 87.8 = 89.12$
4	$89.12 - 5 = 84.12$	18%	$(84.12 \times 0.015) + 84.12 = 84.38$

1) You put \$100 on your credit card for football tickets. Use the above chart to figure out what your balance will be if you only pay off \$5 the first month. Continue to fill in the chart assuming a \$5 payment each month.

2) How much interest have you paid at the end of four months?

**$1.43 + 1.37 + 1.32 + 1.26 = 5.38$**

- Tip: start with your reduced amount.

3) The more you put on your card the more interest you will pay. If you decided to buy a new \$3,500 computer on a credit card at 18% how much would your first payment be? (Use only the principal as your starting figure.)

**$\$3552 \ (3500 \times 0.015) + 3500 = 3552$**

What part of that is interest? **52.50**