

Interest: The Cost of Borrowing Money

LESSON DESCRIPTION (Background for the Instructor)

In this lesson, students will learn about interest, which is the cost of using someone else's money. That "someone" who lends money includes a traditional financial institution (e.g., bank, credit union), an "alternative" financial services outlet (e.g., pawn shop, payday lender), or a friend or family member. Students will learn about the cost of interest paid over time using a variety of credit sources.

The lesson includes five activities that instructors can select from. In these activities, students will:

- ◆ View the YouTube video *Credit Card Game Show* and answer debriefing questions about interest costs
- ◆ Create and explain a table of data derived from an online credit card minimum payment calculator
- ◆ Complete a student loan prepayment activity to see the impact of making regular extra payments
- ◆ Analyze data derived from an online mortgage amortization/principal prepayment calculator
- ◆ Listen to a YouTube song about credit card interest and answer debriefing questions about interest costs

The lesson also contains 10 assessment questions (5 multiple choice and 5 True-False), learning extensions (i.e., suggested learning activities beyond the scope of the lesson plan), and references and resources.

INTRODUCTION (Background for the Instructor)

Credit is the present use of future income. In other words, individuals who use credit (a.k.a., borrowers) use someone else's money today (i.e., "OPM" or "other people's money") with an obligation to pay the borrowed amount back in the future. Because a company that lends money (e.g., bank) does not have access to the money that is lent and needs to make a profit, borrowers must pay a fee, called interest, to receive a loan. Family or friends that lend money may or may not charge interest. Many people think getting credit is a right, but it is actually a responsibility that must be earned.

Credit can be either secured or unsecured. *Secured credit* is backed by property or cash, known as collateral. For example, when you take out a loan to buy a car, the loan is backed by the car. The same is true for a mortgage on a home. The loan is backed by the value of the property. Collateral reduces the risk of non-payment to lenders so consumers generally pay less for secured credit than unsecured credit.

Unsecured credit is backed only by a borrower's ability to repay. An example is purchases made on a credit card. If you bought gas, groceries, and a red sweater on your credit card, the lender is not going to be able to take back these purchases. This is what generally makes unsecured credit more costly than secured credit. Unsecured credit involves a higher risk to lenders that they won't be repaid.

Three basic forms of credit are service credit, revolving credit, and installment credit. *Service credit* is short-term credit related to the purchase of a service that can't be priced ahead of time (e.g., cell phone data use). Utility and doctor bills are examples of service credit. You receive a service first and then pay for it.

Revolving credit allows you to continue to add purchases to an outstanding balance. A MasterCard, or store credit card are examples of revolving credit. You can make purchases, pay off a certain amount, and then charge more (up to a specified maximum limit). The amount you owe will change over time.

Installment credit is usually used for major purchases such as a car or a home. Borrowers pay certain amount each month for a specified number of months (e.g., \$400 car payment for 60 months). Installment credit is a fixed expense while service credit and revolving credit are flexible expenses in a family budget. Installment loans are amortized. The payment will be the same each month but the proportions of principal and interest in the payments will change. Interest owed is the larger part of early payments.

As an amortized installment loan is repaid, the amount of principal within each payment increases until the last payment is almost 100% principal. The monthly payment is always the same. Paying a loan off earlier than its scheduled last payment by making extra principal payments saves money because interest is based on the amount of principal owed. The principal prepayment strategy is often used with home mortgages.

Creditors send a statement showing how much you owe, purchases made, and any fees, interest, and penalties charged. Credit card statements must also include information showing the impact of paying just the minimum payment. Billing statements must have a chart showing the time it takes to pay off the balance and interest if only minimum payments are made. They must also indicate the monthly payment needed to pay the balance off in three years, along with the interest paid on a 36-month repayment plan.

Debt is the accumulated amount that someone owes. Experts suggest that total monthly credit payments (i.e., consumer debts such as credit cards, student loan payments, and car loan payments) should not exceed 20% of monthly net income (i.e., take home pay). You calculate a debt-to-income ratio by adding up all monthly consumer debt payments and dividing this total by total monthly net income. For example, \$300 of consumer debt payments with a \$2,600 net income produces a consumer debt-to-income ratio of 12%.

Debt repayment is a major expense for many families. The amount owed is called the principal and the price of borrowing money is called interest. Some people spend a day's pay (or more) per week repaying the interest and principal owed on car loans, credit card bills, student loans, and other consumer debts. Not only is this expensive, but the payments are unavailable for other expenses and/or for savings. Mortgages (loans to buy a home) are especially costly because payments are generally made for 15 to 30 years.

Below are three tips to reduce the cost of borrowing money:

- ◆ Shop for credit, just like other purchases. Compare at least three credit issuers for the lowest annual percentage rate (APR) and fees. Separate borrowing decisions from purchasing decisions. Don't just accept the financing arrangement offered by a merchant (e.g., car dealer). Shop around.
- ◆ Borrow as little money as possible by making the largest down payment you can afford (e.g., to buy a car). When car payments end, continue making the previous monthly payment to yourself to build up a down payment for your next car.
- ◆ Always pay more than the minimum monthly payment. Otherwise, it could take years, even decades to repay a loan. Even small amounts added to minimum payments produce awesome results. For example, pay double the minimum payment (6% of the outstanding balance versus the 3% minimum).

OBJECTIVES

Students will be able to:

- ◆ Define “interest” and explain how interest rates and loan terms affect the cost of borrowed money.
- ◆ Understand the high cost of interest on credit cards when borrowers make only minimum payments.
- ◆ Understand how principal prepayments can decrease the cost of interest on borrowed money.
- ◆ Explain how the amortization process works on installment loans.
- ◆ Explain the difference between secured and unsecured credit and how this affects loan interest rates.
- ◆ Calculate a consumer debt-to-income ratio with information about debt payments and net income.

NEW JERSEY PERSONAL FINANCIAL LITERACY STANDARD

- ◆ Standard 9.1.12.C3: Compute and assess the accumulating effect of interest paid over time when using a variety of sources of credit.
See <http://www.state.nj.us/education/aps/cccs/career/FLFAQ.htm#gradcredit> and <http://www.state.nj.us/education/cccs/2014/career/91.pdf> for information about Standard 9.1

TIME REQUIRED

45 to 180 minutes (depending upon student progress and content depth and number of activities used)

MATERIALS

- ◆ YouTube Video (3:56): *Funny Moneyman Credit Card Game Show*:
https://www.youtube.com/watch?v=g6_YvIhPKMk and *Credit Card Game Show Activity* handout
- ◆ *Credit Card Minimum Payment Calculator* (Bankrate.com):
<http://www.bankrate.com/calculators/credit-cards/credit-card-minimum-payment.aspx>
- ◆ *Credit Card Minimum Payment Calculator Activity* handout
- ◆ *Prepayment Calculator* (FinAid): <http://www.finaid.org/calculators/prepayment.phtml>
- ◆ *Student Loan Prepayment Activity* handout
- ◆ *Mortgage Prepayment Calculator* (HSH.com): <http://www.hsh.com/calc-prepay.html>
- ◆ *Mortgage Prepayment Calculator Activity* handout
- ◆ YouTube Video (2:35): *The Credit Card Song by Old Man Pie*:
<https://www.youtube.com/watch?v=2JwdIWjVHaU>
- ◆ *The Credit Card Song Scavenger Hunt* (debriefing questions)
- ◆ *Monthly Payments Per 1,000 and Total Cost* (HSH.com): <http://www.hsh.com/mopaytable-print.html>
- ◆ *Interest, Credit, and Debt Quiz* (ASSESSMENT)

Teachers are encouraged to use as many of the student learning activities as time permits to provide a fuller understanding of interest, credit, and debt. The activities can also be used for extra credit assignments, homework, or after-school activities.

PROCEDURE

1. To begin the discussion about the cost of interest on various types of credit, download the *Monthly Payments Per 1,000 and Total Cost[Principal and Interest Combined]* table from HSH.com that shows monthly payments per \$1,000 borrowed: <http://www.hsh.com/mopaytable-print.html>.

Cut and paste the table onto a PowerPoint slide, one-page handout, or poster and ask students to describe the take-away message in a one- or two-sentence “elevator statement.”

Answers will likely vary. Students may or may not have much experience paying interest. The first key message is that the cost of monthly payments increases as the interest rate increases (e.g., from 2% to 7.875% in the table). The second key message is that 30-year mortgages are more expensive than 15-year mortgages. The total amount paid is larger because interest payments are made for an additional 15 years.

2. **Activity 1:** Show the YouTube video *Funny Moneyman Credit Card Game Show*: https://www.youtube.com/watch?v=g6_YvIhPKMk and distribute the *Credit Card Game Show Activity* handout. Ask students to work together in small groups to answer the following questions:

Who paid the least amount of money for the \$284 mp3 player? How much?

Angela paid the \$284 amount in full on her first billing statement after she made the purchase. As a “convenience user” of credit, she paid no interest so her total cost was the \$284 sales price.

Who paid the second lowest amount of money for the \$284 mp3 player? How much?

Greg revolved a balance from month to month and made minimum payments at 9% interest. This resulted in a total cost of \$339.36, \$55.36 more than the original sales price.

Who paid the highest amount of money for the \$284 mp3 player? How much?

Stephanie missed a payment and the annual percentage rate (APR) on her credit card shot up from 9% to 26.5%. She also made minimum payments. This resulted in a total cost of \$480, \$196 more than the original sales price and \$140.64 more than Greg paid.

How much must someone pay each month on their credit card bill to remain in good standing?

Borrowers must pay at least the minimum payment required by the creditor by the due date shown on their billing statement to remain in good standing. Otherwise, they could be charged a late fee and/or a penalty like Stephanie in the video was.

What is the key take-away message from this video?

There is technically nothing wrong with making minimum payments on a credit card as Greg and Stephanie did. In fact, creditors like people to make minimum payments because they earn more interest. However, the smartest debt repayment strategy is to pay an outstanding balance in full when the billing statement arrives. No balance is revolved to the following month and no interest is charged.

Another take-away message is to pay attention to your billing dates and pay credit card bills promptly to avoid punitive increases in the interest rate (APR) that is charged as was shown by Stephanie’s story.

3. **Activity 2:** Direct students to the *Credit Card Minimum Payment Calculator* from Bankrate.com: <http://www.bankrate.com/calculators/credit-cards/credit-card-minimum-payment.aspx>.

Distribute the *Credit Card Minimum Payment Calculator Activity* handout. Ask students to work together in small groups to input (by typing or using the sliders) the following data into the online calculator: \$1,000 credit card balance, 18% credit card (interest) rate, **3%** (of the outstanding balance) minimum payment. Ask them to write the data for balance payoff time and total payments in the first table on the handout. Repeat the process with balances of \$5,000, \$10,000, and \$20,000.

Next, have students input the following data into the online calculator: \$1,000 credit card balance, 18% credit card (interest) rate, **6%** minimum payment. Ask them to input data for balance payoff time and total payments in the second table as well as the interest savings vs. payments shown in Table 1. Repeat the process with balances of \$5,000, \$10,000, and \$20,000. Finally, have students write one to two sentences about what they learned and debrief the activity.

Answers for the data in the two tables are shown below:

Table 1: Making Minimum Payments: 3% of the Outstanding Balance

Outstanding Balance	Total Payments	Balance Payoff (Months/Years)
\$1,000	\$1,698.38	92 months/7.67 years
\$5,000	\$9,698.44	198 months/16.5 years
\$10,000	\$19,698.16	244 months/20.33 years
\$20,000	\$39,698.45	290 months/24.17 years

Table 2: Making Double the Minimum Payment: 6% of the Outstanding Balance

Outstanding Balance	Balance Payoff (Months/Years)	Total Payments	Savings vs. Making 3% Minimum Payments
\$1,000	49 months/4.08 years	\$1,289.87	\$408.51
\$5,000	84 months/7 years	\$6,623.22	\$3,075.22
\$10,000	99 months/8.25 years	\$13,289.85	\$6,408.31
\$20,000	114 months/9.5 years	\$26,623.18	\$13,075.27

Student answers during the debriefing may vary but they should recognize that both repayment time and interest costs are reduced by making a larger monthly payment and that the difference between the 3% and 6% (of balance) repayment strategies is especially magnified for large outstanding balances.

4. **Activity 3:** Direct students to the *PrePayment Calculator* for student loan debt by FinAid:
<http://www.finaid.org/calculators/prepayment.phtml>.

Distribute the *Student Loan Prepayment Activity* handout and ask students to use the Internet and the online calculator to answer the questions on the handout. Answers to the questions are as follows:

What is principal prepayment?

Principal prepayment is the process of making extra payments to reduce the principal balance of a loan such as a home mortgage or student loans. Principal pre-payment reduces the amount owed (i.e., the loan balance), resulting in a loan being repaid in less time than was originally scheduled. The total cost of interest payments is also reduced. Some people prepay principal on a regular basis as part of their household budget and some use large, irregular lump sums such as cash gifts or income tax refunds.

What are the advantages of principal prepayment?

Big advantages include time and interest savings. Many people also use principal prepayment as part of an overall financial planning strategy. For example, they prepay principal to pay off their mortgage before they retire or before their children attend college.

What are the disadvantages of principal prepayment?

Prepaying principal requires a larger loan payment that would otherwise be the case. This entails reduced spending in other areas of an individual's or family's budget. Another disadvantage is that someone might forgo the opportunity to use the money allocated for principal prepayment for another purpose such as making deposits into a mutual fund investment. This is known as an opportunity cost.

If Jane borrows \$35,000 for student loans at an interest rate of 4% with a loan term of 10 years, how much will she pay monthly, and in total, without any extra principal prepayments?

Jane will make 120 payments of \$354.36 for a total of \$42,877.26 in payments, \$7,877.26 of which is interest.

If Jane borrows \$35,000 for student loans at an interest rate of 4% with a loan term of 10 years, how much will she pay monthly, and in total, with a \$100 monthly principal prepayment?

Jane will make 90 payments for a total of \$40,517.11 in payments, \$5,517.11 of which is interest.

If Jane borrows \$35,000 for student loans at an interest rate of 4% with a loan term of 10 years, how much will she pay monthly, and in total, with a \$300 monthly principal prepayment?

Jane will make 60 payments for a total of \$38,613.08 in payments, \$3,613.08 of which is interest.

How can Jane “find” the extra money needed to prepay the principal on her student loans?

Jane can try to find ways to increase her income, reduce her expenses, or do both. For example, she might be able to earn extra money by freelancing her work-related skills as a consultant, finding a second job, or working overtime. To reduce expenses, she can look for ways to save money for various types of variable household expenses. For example, she might use coupons to save on food shopping, shop for clothing at a thrift shop, and turn down the thermostat to reduce utility costs.

5. **Activity 4:** Direct students to the *Mortgage Prepayment Calculator* from HSH.com: <http://www.hsh.com/calc-prepay.html> and distribute the *Mortgage Prepayment Calculator Activity* handout. Ask students to complete the tables on the handout with data from the calculator. For Table 1, have students enter \$100,000 for the mortgage loan amount, 30 years for the loan term, 3.5% for the interest rate, and 15 years for the desired length of the loan. Press “Calculate” to determine the standard monthly payment (principal + interest), the extra payment per month, and the interest saved. Do the same calculation for 20 and 25 years and complete the table as shown below. Debrief the activity.

Table 1: Principal Prepayment on a \$100,000, 30 Year, 3.5% Mortgage (By Desired Length of Loan)

Loan Term	Standard Monthly Payment (Principal + Interest)	Extra Payment Per Month	Total Payment (Standard Payment + Extra Payment)	Interest Saved by Prepaying Principal
15 Years	\$449.04	\$268.88	\$717.92	\$33,148.20
20 Years	\$449.04	\$132.59	\$581.63	\$22,644.92
25 Years	\$449.04	\$52.62	\$501.66	\$11,655.82

Student answers will vary but should include the fact that the shortest term mortgage (15 years) has the greatest interest savings and the highest total payment because the \$100,000 loan amount is being spread over 180 payments versus the originally scheduled 360 payments (30 years).

For Table 2, have students enter the same loan amount, loan term, and interest rate, and \$500 for the desired monthly payment. Press “Calculate” to determine the standard monthly payment (principal + interest), the extra payment per month, interest saved, and time to pay off the loan. Do the same calculation for \$600, \$700, and \$800 monthly payments and complete the table as shown below. Debrief the activity.

Table 2: Principal Prepayment on a \$100,000, 30 Year, 3.5% Mortgage (By Desired Monthly Payment)

Desired Monthly Payment (Standard Payment + Extra Payment)	Standard Monthly Payment	Extra Payment Per Month	Interest Saved by Prepaying Principal	Time to Pay Off Loan
\$500	\$449.04	\$50.96	\$11,356.80	25 Years, 1 Month
\$600	\$449.04	\$150.96	\$24,502.33	19 Years, 1 Month
\$700	\$449.04	\$250.96	\$32,108.31	15 Years, 6 Months
\$800	\$449.04	\$350.96	\$37,093.01	13 Years, 0 Months

Student answers will vary but should include the fact that, the higher the amount of the principal prepayment, the greater the amount of interest saved by prepaying principal and the shorter the time required to pay off a mortgage loan. Even an extra \$51 a month added to the required principal plus interest payment will save over \$11,000 in interest and almost five years of payments.

- 6. Activity 5:** Play the YouTube video of the song *The Credit Card Song* by *Old Man Pie*: <https://www.youtube.com/watch?v=2JwdIWjVHaU> and distribute *The Credit Card Song Scavenger Hunt* (debriefing questions). Have students work together in small groups to answer questions based on the content of the video. Consider providing small prizes to members of the first team that answers all of the questions correctly. Answers to the nine questions on the Scavenger Hunt are as follows:

First Spending Item Mentioned in the Song: Shoes

Second Spending Item Mentioned in the Song: Phones

Third Spending Item Mentioned in the Song: Guitars

Definition of a Need: Something that people need to buy to survive (e.g., food and housing)

Definition of a Want: Everything else (things that are nice to have, but not necessary to survive)

First Disadvantage of Credit Cards Shown in the Video: Encourages overspending

Second Disadvantage of Credit Cards Shown in the Video: High interest costs to borrow money

Third Disadvantage of Credit Cards Shown in Video: Buy Now, Pay Forever (“perma-debt”)

Definition of Paying Never, Never, Never: Postponing debt repayment and paying ongoing interest

CLOSURE

Ask students if they have any remaining questions about interest charged on various sources of credit. Remind them that interest can be a person’s best friend (when they earn interest on savings accounts) or worst enemy (when they pay interest on loans and credit cards). The amount of interest that someone pays depends on three key factors: the amount of money borrowed, length of the loan, and the interest rate.

There is nothing wrong with using credit, per se, but it does come with a price: interest. Interest charges increase the cost of goods and services. It is important to keep spending under control so the amount owed (debt) does not exceed one’s ability to pay it back. Total monthly payments for consumer debts should not exceed 20% of monthly net (i.e., take home) income. Asking whether something is a need or a want can help prioritize spending and keep credit card debt in check.

GLOSSARY

Annual Percentage Rate (APR)- The total cost of credit on an annual basis expressed as a percentage (e.g., an 18% APR on a credit card).

Collateral- Property (e.g., bank account savings, home, car) required by a lender to guarantee repayment of a loan. If a borrower fails to make payments, the collateral can be seized to make loan payments.

Consumer Debt-to-Income Ratio- A measure of a consumer’s ability to take on existing debt. It is calculated by adding up all monthly consumer debt payments (e.g., credit cards, auto and student loans, family loans) and dividing this total by total monthly net (take-home) income. For example, \$300 of consumer debt payments with a \$2,600 net income produces a consumer debt-to-income ratio of 12%.

Credit- The present use of other people's money, via loans and credit cards, with an obligation to pay the borrowed amount back in the future, plus interest. For example, someone might buy a car or furniture or a computer on credit and make monthly payments of principal plus interest until the loan is repaid.

Credit Card- A plastic card used by consumers to purchase goods and services on credit. Credit cards are a type of open-end credit because borrowing can occur on a continuous basis and payments can vary between the minimum payment and the full balance owed.

Creditor- An individual (e.g., family member) or institution (e.g., bank) that lends money to people.

Debt- The accumulated amount of borrowed money that is owed by individuals, businesses, and government entities. Debt includes principal plus interest and exists as a result of prior use of credit.

Fixed Interest Rate- An interest rate that remains the same throughout the life of a loan (example: 4% fixed rate mortgage).

Installment (Closed-End) Credit- A type of credit where borrowers pay the same amount each month for a specified number of months (e.g., \$400 car payment for 60 months) to repay what they owe.

Interest- The price that people pay to borrow money. When people make loan payments, interest is a part of the payment.

Interest Rate- The cost of borrowing money expressed as a percentage of the amount borrowed (principal). Typically, low-risk borrowers with good credit scores pay the lowest interest rates.

Minimum Payment- The amount required by a creditor to be paid monthly to keep a credit card account in good standing. Borrowers must make at least the minimum payment by the billing statement due date.

Penalty APR- A high rate of interest charged on credit cards, typically between 20% to 30%, when consumers violate contract terms (e.g., making late payments).

Principal- The original amount of money borrowed, or the amount still owed, on a loan or credit card. When borrowers make payments, a portion of their payment is principal and another portion is interest.

Revolving (Open-End) Credit- A type of credit that allows borrowers to continue to add purchases to an outstanding balance. Credit cards are an example. You can make purchases, pay off a certain amount, and then charge more (up to a specified maximum limit). The amount borrowers owe will change over time.

Secured Loans- Loans that are backed with some type of collateral (e.g., bank account, house, car). Secured loans typically charge lower interest rates than unsecured loans.

Service Credit- Short-term credit related to the purchase of a service that can't be priced ahead of time (e.g., cell phone data use). Utility and doctor bills are examples of service credit.

Unsecured Loans- Loans that are simply backed by a borrower's promise to repay them and do not contain any collateral. Unsecured loans typically charge higher interest rates than secured loans.

Variable Interest Rate- An interest rate that can change (increase or decrease) throughout the life of a loan (examples: a variable rate credit card and an adjustable rate mortgage). Variable rates are typically set according to some type of index, plus an additional percentage (e.g., prime rate + 12.99% on a credit card).

LEARNING EXTENSIONS

If time permits, the following activities can be used to extend the depth of this lesson:

- ◆ Incorporate material from the Federal Reserve Bank of St. Louis curriculum *Cards, Cars, and Currency*: <https://www.stlouisfed.org/~media/Education/Curriculum/pdf/Cards-Cars-and-Currency-Complete-Unit.pdf>.
- ◆ Incorporate material from the Council for Economic Education lesson plan *What Happens When a Bank Makes a Loan?*: <http://www.pathwaytofinancialsuccess.org/wp-content/uploads/2014/04/UpperElementarylesson31.pdf>.
- ◆ Teach the *All About Interest* lesson (Lesson 14) from the Council for Economic Education *Financial Fitness for Life* Grades 9-12 curriculum: <http://fffl.councilforeconed.org/book-overview.php?gradeLevel=9-12>.
- ◆ Invite a representative from a local bank or credit union to visit your class and discuss how interest rates are set for various sources of credit.
- ◆ Have students do the *Loan Calculation Activity* in the New York Public Library *Money Matters Pro* program. **Lesson:** <https://sites.google.com/a/nyppl.org/money-matters/home/curriculum/credit--debt-2>. **Activity:** <https://docs.google.com/viewer?a=v&pid=sites&srcid=bnlwbC5vcmd8bW9uZXktbWF0dGVyc3xneDozMWUyNmEwY2Q2MDg1Yzdm> **Answer sheet:** <https://docs.google.com/viewer?a=v&pid=sites&srcid=bnlwbC5vcmd8bW9uZXktbWF0dGVyc3xneDo3OGQ5ZGUzN2M0ZmQ0YTc0>
- ◆ Play the YouTube rap song *Credit Card Rap (Plastic Money)* and debrief the key messages: https://www.youtube.com/watch?v=U_5hOH4Xv7Q
- ◆ Incorporate material from the *What's Up in Finance?* lesson plan *Pay Credit When Credit is Due*: <http://www.thirteen.org/finance/educators/lesson3.html>.
- ◆ Incorporate material from the *Borrowing Money: Remember the Interest* lesson from Money Instructor: <http://lesson.moneyinstructor.com/136/remember-interest.html>.
- ◆ Have students watch the documentary film *In Debt We Trust* (1:26) and discuss its key messages: <https://www.youtube.com/watch?v=Cltc4Og6HKo>
- ◆ Order cardboard *Credit Card Smarts* calculators from Advantage Publications to teach students about the high cost of interest from making minimum payments on credit cards: <http://www.advantagepublications.com/finances.html>.
- ◆ Have students create an interest-saving debt repayment scenario with PowerPay: <https://powerpay.org/>.

ASSESSMENT: *Interest, Credit, and Debt Quiz*

Instructors are encouraged to use the questions below for content review or as a pre-and/or post-test to determine gains in student knowledge about interest, credit, and debt after teaching this lesson.

Correct answers to the multiple choice and True-False questions are shown in boldface type.

Multiple Choice Questions

1. Suzanne has a monthly net (take-home) income of \$2,000. She pays \$400 a month rent as part of a group of friends sharing an apartment and has a \$200 monthly student loan payment. What is her consumer debt-to-income ratio?
 - a. **10%**
 - b. 20%
 - c. 30%
 - d. 40%
2. What type of credit is typically offered by medical facilities and utility companies such as cell phone and electricity providers?
 - a. Revolving credit
 - b. **Service credit**
 - c. Installment credit
 - d. No credit
3. Which type of credit generally charges borrowers the highest rate of interest?
 - a. Amortized mortgage
 - b. Collateralized loan
 - c. Secured loan
 - d. **Unsecured loan**
4. A comparison of interest rates charged by different credit cards is best done by comparing the
 - a. Discounted present value
 - b. Compound rate of return
 - c. Annual percentage yield (APY)
 - d. **Annual percentage rate (APR)**
5. The last payment of an amortized installment loan, such as a mortgage, is comprised of what percentage of the principal and interest?
 - a. 50% principal, 50% interest
 - b. 75% principal, 25% interest
 - c. **Almost 100% principal**
 - d. Almost 100% interest

True-False Questions

1. A disadvantage of using credit is the temptation to overspend (**TRUE: Credit makes it easy to overspend because consumers can postpone payment until a later date. The ability to use OPM- other people's money- comes with a price, however, and that price is interest**)
2. Installment credit allows borrowers to add additional purchases to their outstanding balance (**FALSE: Installment (or closed-end) credit payments, which include both principal and interest, are fixed for a specific period of time. Revolving (or open-end) credit, such as credit cards, allows borrowers to add to their existing balance up to a specified maximum limit**)
3. The least expensive loans are often provided by family members (**TRUE: Financial institutions will always charge interest to lend people money. The interest rate is usually set according to current market interest rates. Family members may or may not charge interest to lend someone money**)
4. Credit card companies can raise the interest rate on your credit card if you make a late payment (**TRUE: Penalty annual percentage rates (APRs) are high interest rates that can be triggered by late payments. Often these APRs range from 20% to 30%. Lenders can increase borrowers' interest rate significantly and profit from their mistakes. Details are spelled out in "the fine print" of a credit card disclosure statement and CARD Act regulations**)
5. Monthly payments on loans and credit cards are partially determined by the age of a borrower (**FALSE: Apart from being old enough to qualify to receive credit in the first place, age does not generally impact credit card interest rates. The three key factors that influence credit card payments the most are: current market interest rates, length of a loan repayment period, and amount borrowed**)

REFERENCES AND RESOURCES

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Credit Card Game Show Activity

Directions: Watch the video, form a small group, and work together to answer the following questions.

Video Link: https://www.youtube.com/watch?v=g6_YvIhPKMk

Who paid the least amount of money for the \$284 mp3 player? How much?

Who paid the second lowest amount of money for the \$284 mp3 player? How much?

Who paid the highest amount of money for the \$284 mp3 player? How much?

How much must someone pay each month on their credit card bill to remain in good standing?

What is the key take-away message from this video?

Credit Card Minimum Payment Activity

Pull up the *Credit Card Minimum Payment Calculator* from Bankrate.com:

<http://www.bankrate.com/calculators/credit-cards/credit-card-minimum-payment.aspx>.

Work together in small groups to input (by typing or using the sliders) the following data into the online calculator: **\$1,000** credit card balance, **18%** credit card (interest) rate, **3%** (of the outstanding balance) minimum payment. Write the data for balance payoff time and total payments in Table 1. Repeat the process with balances of **\$5,000**, **\$10,000**, and **\$20,000**.

Next, input the following data into the online calculator: **\$1,000** credit card balance, **18%** credit card (interest) rate, **6%** minimum payment. Input data for balance payoff time and total payments in the second table as well as the interest savings vs. payments shown in Table 1. Repeat the process with balances of **\$5,000**, **\$10,000**, and **\$20,000**.

Write one to two sentences about what you learned from this activity.

Table 1: Making Minimum Payments: 3% of the Outstanding Balance

Outstanding Balance	Total Payments	Balance Payoff (Months/Years)
\$1,000		
\$5,000		
\$10,000		
\$20,000		

Table 2: Making Double the Minimum Payment: 6% of the Outstanding Balance

Outstanding Balance	Balance Payoff (Months/Years)	Total Payments	Savings vs. Making 3% Minimum Payments
\$1,000			
\$5,000			
\$10,000			
\$20,000			

Summary Statement:

Student Loan Prepayment Activity

Instructions: Go online and pull up the PrePayment *Calculator* for student loan debt by FinAid: <http://www.finaid.org/calculators/prepayment.phtml>. Use the Internet and the online calculator to answer the questions below:

What is principal prepayment?

What are the advantages of principal prepayment?

What are the disadvantages of principal prepayment?

If Jane borrows \$35,000 for student loans at an interest rate of 4% with a loan term of 10 years, how much will she pay monthly, and in total, without any extra principal prepayments?

If Jane borrows \$35,000 for student loans at an interest rate of 4% with a loan term of 10 years, how much will she pay monthly, and in total, with a \$100 monthly principal prepayment?

If Jane borrows \$35,000 for student loans at an interest rate of 4% with a loan term of 10 years, how much will she pay monthly, and in total, with a \$300 monthly principal prepayment?

How can Jane “find” the extra money needed to prepay the principal on her student loans?

Mortgage Prepayment Calculator Activity

Pull up *Mortgage Prepayment Calculator* from HSH.com: <http://www.hsh.com/calc-prepay.html>. Work together in a small group to complete the tables below using data from the calculator.

For **Table 1**, enter **\$100,000** for the mortgage loan amount, **30 years** for the loan term, **3.5%** for the interest rate, and **15 years** for the desired length of the loan. Press “Calculate” to determine the standard monthly payment (principal + interest), the extra payment per month, and the interest saved. Do the same calculation for **20 and 25 years** and complete the table below.

Table 1: Principal Prepayment on a \$100,000, 30 Year, 3.5% Mortgage (By Desired Length of Loan)

Loan Term	Standard Monthly Payment (Principal + Interest)	Extra Payment Per Month	Total Payment (Standard Payment + Extra Payment)	Interest Saved by Prepaying Principal
15 Years	\$449.04			
20 Years	\$449.04			
25 Years	\$449.04			

For **Table 2**, enter the same loan amount, loan term, and interest rate, and **\$500** for the desired monthly payment. Press “Calculate” to determine the standard monthly payment (principal + interest), the extra payment per month, interest saved, and time to pay off the loan. Do the same calculation for **\$600, \$700, and \$800** monthly payments and complete the table below.

Table 2: Principal Prepayment on a \$100,000, 30 Year, 3.5% Mortgage (By Desired Monthly Payment)

Desired Monthly Payment (Standard Payment + Extra Payment)	Standard Monthly Payment	Extra Payment Per Month	Interest Saved by Prepaying Principal	Time to Pay Off Loan
\$500	\$449.04			
\$600	\$449.04			
\$700	\$449.04			
\$800	\$449.04			

Summary Statement:

The Credit Card Song Scavenger Hunt

Play the YouTube video of the song *The Credit Card Song* by *Old Man Pie*:

<https://www.youtube.com/watch?v=2JwdIWjVHaU>

Work together in small groups to answer nine questions below that are based on the content of the video.

First Spending Item Mentioned in the Song	Second Spending Item Mentioned in the Song	Third Spending Item Mentioned in the Song
Definition of a Need	Definition of a Want	Definition of Paying Never, Never, Never
First Disadvantage of Credit Cards Shown in the Video	Second Disadvantage of Credit Cards Shown in the Video	Third Disadvantage of Credit Cards Shown in the Video



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