MIDDLE SCHOOL
Game Activity

Title

Borrowing Olympics

LEARNING OBJECTIVE(S)

Students will be able to:

- **Use** the Simple Interest Formula to calculate the cost of **borrowing over time.**
- **Compare** loan options by analyzing terms such as interest rate, loan length, and fees.
- **Explain** how different repayment strategies (e.g., minimum payments, balloon payments) affect total repayment.
- **Evaluate** trade-offs between short-term affordability and long-term loan cost.
- **Make** informed borrowing decisions by interpreting and comparing real-world financial scenarios.

Content Area

Math: Expressions and Equations

Grades

6–8

Overview

How do our borrowing choices affect how much we pay? In this lesson, students warm up with a series of "Would You Rather?" questions that get them thinking about borrowing in everyday life. Then they take on the role of financial athletes in the Borrowing Olympics—rotating through a series of real-world borrowing scenarios involving interest rates, loan terms, repayment strategies, and credit options. At each station, students choose a challenge level (bronze, silver, or gold), solve a math-based problem, and reflect on the financial trade-offs involved. The lesson wraps up with a medal tally and group discussion, helping students connect their problem-solving to the bigger picture of making smart borrowing decisions.

Themes

Personal Finance: Borrowing

Math: Expressions, equations, percents

Common Core Math Standards

- **MP1**: Make sense of problems and persevere in solving them.
- **MP2**: Reason abstractly and quantitatively.
- **MP3**: Construct viable arguments and critique the reasoning of others.
- **CCSS.Math.Content.7.EE.B.3**: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply

properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

- **CCSS.Math.Content.7.EE.B.4**: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
- **CCSS.Math.Content.8.EE.C.7**: Solve linear equations in one variable.
- **CCSS.Math.Content.6.EE.B.7**: Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.
- **CCSS.Math.Content.6.EE.C.9**: Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.
- **CCSS.Math.Content.7.NS.A.3**: Solve real-world and mathematical problems involving the four operations with rational numbers.
- **CCSS.Math.Content.7.RP.A.3**: Use proportional relationships to solve multistep ratio and percent problems.

National Standards for Personal Financial Education

Council for Economic Education and Jump$tart Coalition, 2021

- **V. Managing Credit 8-1**: Interest rates and fees vary by type of lender, type of credit, and market conditions.
- **V. Managing Credit 8-2**: Financial institutions advertise loan costs to potential borrowers using the Annual Percentage Rate (APR), expressed as an annual percentage of the loan principal. Low introductory rates offered to attract customers may increase later.
- **V. Managing Credit 8-3**: The longer a loan repayment period and the higher the interest rate, the larger the total amount of interest paid by a borrower.

National Standards for Business Education

National Business Education Association, 2023

- **Personal Finance VII.1.8** Define interest as a cost of credit and explain why it is charged.
- **Personal Finance VII.1.10** Explain how the amount of principal, the period of the loan, and the interest rate affect the amount of interest charged.
- **Personal Finance VII.1.15** Calculate interest based on various calculation methods.

Connect

How does this connect To Financia: A Dice Quest?

In ***Financia***, students can borrow dice to improve their chances of success—but they have to pay back even more dice later. This lesson encourages students to think strategically by showing how different borrowing choices, like interest rates or payment plans, affect what you owe in the end.

How does this connect to students?

Many students have borrowed or lent money—from or to a friend, a parent, or another family member. This lesson helps them understand what happens when interest is added, what terms to look out for, and why choosing how to borrow can be just as important as choosing how to spend.

How does this connect to middle school math?

Students apply expressions, equations, percentages, and proportional reasoning to solve real-world loan problems. They practice using formulas, comparing values, and reasoning with variables—all key skills in middle school math.

Key Terms

Personal Finance: borrowing, loan, interest, simple interest, APR (annual percentage rate), teaser rate, fees, loan term, minimum payment, credit card, balloon payment, installment loan, monthly payment, repayment, principal, fixed payment, total cost, credit score, compound interest, risk, lender, borrower, debt, payment plan

Math: Equation, variable, percent, rate, Simple Interest Formula ($I = P \times r \times t$), table

Prepare

Background: Borrowing money is a common part of financial life—from small personal loans to large purchases like homes or college tuition. Borrowing generally comes with a cost—**interest**. In this lesson, students focus on **simple interest**, which is calculated by multiplying the **principal** (amount borrowed) by the **interest rate** (as a decimal) by the **time** (in years). Through a series of "events" modeled after the Olympic Games, they work through real-world scenarios involving different types of loans and see how loan **terms**, **fees**, and **payment** options can impact how much they repay over time. They also consider trade-offs and risks, like **balloon payments** and **minimum credit card payments**, that can make borrowing more or less manageable depending on the borrower's choices.

Each event includes three challenge levels (bronze, silver, and gold) offering students the ability to self-differentiate. More challenging problems are awarded more points. Before conducting the lesson, review the **Borrowing Olympics Student Handouts** and **Educator Guide** and determine which you will use based on the level of your students.

The activity can be structured as a series of rotating **stations** or a **seated activity**. For a high-energy experience, stations can be set up around the room, with students working in small teams and rotating after completing each event. A classroom timer or a signal can be used to cue movement. Alternatively, if space or time is limited, the activity can be completed at desks by distributing all handouts at once, working through one event at a time as a class, or providing digital copies of the events for students to access on their own. Another option is to add physical activity to the lesson. For example, students could be given a starting point for each event station. On a start cue, one or more members of a team could "sprint" to solve the problem.

By the end of the lesson, students will not only understand that borrowing money often costs more than what's received upfront, but they'll also be able to analyze how different borrowing choices affect their financial future. The lesson encourages

them to ask critical questions before borrowing: *How long will I be paying this back? Will I pay more in the long run? What's the best option for my situation?* These skills will serve them well whether they're borrowing dice in a game like ***Financia*** or managing real-world money choices as they grow.

Materials

- **Borrowing Olympics** Student Handouts—for stations: one of each; for seated work: one per student/group or a shared electronic copy
- Tape—if using stations
- **Borrowing Olympics Student** Capture Sheet—one per group or student
- **Borrowing Olympics Educator Guide** Handout—one copy for reference
- **Borrowing Olympics Medals** Handout—one cut in thirds (optional)
- Financia: A Dice Quest (optional)

Engage

- Tell students they're about to participate in a fast-paced financial challenge—the Borrowing Olympics—where they'll compete in events exploring different kinds of loans and borrowing decisions. As with any sporting event, this requires a "warm-up." In this case, that will be a quick round of "Would You Rather?" focused on borrowing.
- Explain that when people borrow money, their decisions—like how long it takes to repay or which loan they choose—can make a big difference in how much they pay overall.
- Designate one side of the room as Side A and the other one as Side B. Let students know that they will need to move to one side or the other for each "Would You Rather?" question you pose. Alternatively, students can stay seated for choice A and stand up at their seat for choice B.
- Select questions from those below and give students time to move to one side or the other for each one. Invite a few volunteers to briefly explain their reasoning before moving to the next prompt.
    - Would you rather borrow $100 and
        - A) pay it all back in one month or
        - B) borrow $100 and pay it back slowly over the next year?
    - Would you rather borrow money from
        - A) a friend or
        - B) a family member?
    - Would you rather
        - A) save enough money to get something you really want or
        - B) borrow money from someone to get it now, knowing you'll need to pay it back with interest?
    - Would you rather borrow money
        - A) without reading all the fine print or
        - B) read every single detail before you commit?

- Would you rather borrow money with
  - A) equal monthly payments or
  - B) small payments now and a big one later?
- Direct students to return to their seats and let them know you think they are now warmed up for the Borrowing Olympics.

Teach

- Ask students if they have ever watched the summer Olympics. Follow up to see if anyone has watched gymnastics.
- Share that the Borrowing Olympics will be much like a true Olympic event—specifically gymnastics—because they will rotate from one event to another, learning more about borrowing at each one and then facing a choice of problems to solve.
- Explain that they can pick a challenge level (bronze, silver, or gold) at each event:

Bronze = Beginner = 1 point

Silver = Moderate = 2 points

Gold = Challenging = 3 points

- For whichever level they select, they will need to solve the problem correctly and answer the discussion question to get the medal and points.
- Provide additional directions based on your preferences.
  - Small groups or individual effort: If in groups, divide students or let them select their groups.
  - Stations or seated:
    - Stations: Let students know if they will be rotating from one station to another with a timer or if they can move independently once they finish with a station.
    - Seated: Distribute copies of the **Borrowing Olympics Student** Handouts to each student or small group or share an electronic copy.
  - One level per event or multiple: Tell students if they can attempt more than one medal per event or if they must choose one.
- Circulate to support student thinking. Use the **Borrowing Olympics Educator Guide** to check their work, offer hints, or extend thinking with follow-up questions.
- When students have finished or a time limit has been reached, review the answers for each event, calling on students to share their responses and process for achieving the correct answers. Use the Teaching Tips and Optional Follow-Up Questions from the **Borrowing Olympics Educator Guide** as time allows.

Conclude

- Invite students to tally their medals and points.
- If desired, recognize students who achieved the most points with a short medal ceremony, distributing a bronze, silver, or gold **Borrowing Olympics Medal** to the students or groups with the most points.
- Invite students to answer one or more of the questions below aloud or using a preferred exit-ticket strategy.
    - What is one thing you learned about borrowing that surprised you?
    - What factors increase the cost of borrowing?
    - What advice would you give a friend about borrowing money for something they want now but can't afford yet?
    - What makes borrowing with a loan feel like a good or bad choice?

Extend

- **Presentation**: Ask students to create a "Borrowing Breakdown" infographic or short presentation that explains each variable in the Simple Interest Formula (e.g., interest amount, principal, interest rate, and time) to a teen audience. It should include what causes interest payments to increase and what to look for before accepting a loan.
- **Writing**: Invite students to write a first-person narrative titled "The Loan That Taught Me Something" in which they invent a short story about someone who borrows money and learns a lesson about interest, loan terms, or repayment.
- **Research**: Challenge students to investigate current interest rates for credit cards, auto loans, and student loans. Have them compare how rates vary by lender or borrower credit score and summarize findings in a visual chart or short report.
- **Family**: Encourage students to talk to a trusted adult about the first time they borrowed money (from a person or institution). Ask students to reflect on what the adult learned and whether they would make the same choice today.
- **Technology**: Direct students to use a loan calculator (online or spreadsheet-based) to explore how loan amount, interest rate, and loan term impact total cost. Ask them to test three different scenarios and describe what they notice.
- **Creative**: Ask students to design a "Borrowing Olympics Mascot" who teaches teens how to borrow smart. The mascot should have a name, a slogan, and a set of borrowing "rules" or "golden tips." Students can draw, present, or digitally design their mascot.
- **Math**: Challenge students to create a new "Platinum-Level" problem for one of the Borrowing Olympics events, along with a discussion question and answer key.

Borrowing Olympics Event 1: Simple Interest Sprint

Directions: Decide as a team which medal you will attempt. Solve the math problem and be prepared to answer the discussion question. Use this information for all levels:

Interest is the extra money paid for the opportunity to borrow money.

Simple interest is calculated using this formula: **I = P × r × t**.

I is the amount of interest paid, P is the principal or amount borrowed,

r is the interest rate (as a decimal), and t is time (in years).

Bronze: You borrow $300 from your older sister to help pay for a school trip. She charges you 5% simple interest per year, and you agree to pay her back in 2 years.

- **Solve:** How much extra will you owe in interest?
- **Discussion**: Why do people or companies charge interest when they lend money?

Silver: You borrow $200 from your cousin to buy a used gaming console. He charges 6% simple interest per year, and you will repay him after 3 years.

- **Solve:** What is the total amount you'll pay back, including interest?
- **Discussion**: Why might someone borrow money even though they'll have to pay back more than they originally borrowed?

Gold: You plan to borrow money to start a lawn mowing business. A family member agrees to loan you $950 so you can purchase the equipment and supplies you need. They will charge you 4% simple interest. You're trying to decide if you will repay the loan in 2 years or 3 years.

- **Solve:** How much can you save in interest if you pay it off in 2 years instead of 3?
- **Discussion:** How can the length of a loan affect the total amount you repay?

Borrowing Olympics Event 2: Installment Dash

Directions: Decide as a team which medal you will attempt. Solve the math problem and be prepared to answer the discussion question. Use this information for all levels:

An **installment loan** is a loan that is repaid in equal amounts over time—usually monthly.

Loans for cars, homes, and college are usually installment loans with the same payment amount each month.

The total cost of the loan may include interest and fees.

Bronze: You borrow $240 from your aunt to fix your bike. You agree to pay her the same amount each month for 6 months.

- **Solve:** What is your monthly payment?
- **Discussion:** How could paying the same monthly amount be helpful when borrowing?

Silver: You ask to borrow $500 from your grandparents for a new puppy, food, and supplies. They will agree to this deal if you pay them back with interest of $50. You agree to this deal and promise to pay them $25 each month until it is completely paid off.

- **Solve:** How long will it take you to pay off the loan?
- **Discussion:** Why is it important to know how long your loan will last before agreeing to it?

Gold: You're offered a $360 loan at 5% simple interest to pay for summer camp. It must be paid off before next summer in 12 months. Your budget allows no more than $30 per month in loan payments.

- **Solve:** Will this loan fit your budget?
- **Discussion:** What should you consider when deciding how much to borrow?

Borrowing Olympics Event 3: Fine Print Freestyle

Directions: Decide as a team which medal you will attempt. Solve the math problem and be prepared to answer the discussion question. Use this information for all levels:

Important Terms

APR (Annual Percentage Rate): The yearly cost of a loan, including interest and some fees.

Monthly Payment: The amount you owe each month.

Loan Term: The number of months or years to repay the loan.

Fees: One-time extra charges added to the loan.

Teaser Rate: A temporary low rate that increases later.

Loan Comparison Table

Loan	APR (Annual Percentage Rate)	Monthly Payment	Loan Term	Fees
A	10%	$55	12 months	$0
B	6% for 6 months, then 12%	$50	12 months	$20
C	9%	$53	12 months	$15

Bronze: You are thinking about using Loan A to borrow $600 for a new bike.

- **Solve:** What will the total cost of the loan be over 12 months?
- **Discussion:** Why do you need to look at more than just the APR when deciding which loan to choose?

Silver: You are comparing Loan B and Loan C to see which is the better deal for borrowing $600..

- **Solve:** Which loan will cost you less in total over 12 months?
- **Discussion:** Why might a loan with a lower starting payment end up costing more?

Gold: You want the best deal overall for borrowing $600 and are willing to do the math!

- **Solve:** Calculate the total cost of all three loans and identify the one with the lowest total repayment.
- **Discussion:** What lessons can you learn about borrowing by comparing all the loan offers?

Borrowing Olympics Event 4: Interest Rate Race

STUDENT HANDOUT

Directions: Decide as a team which medal you will attempt. Solve the math problem and be prepared to answer the discussion question. Use this information for all levels:

> **Interest** is the extra money paid for the opportunity to borrow money.
>
> The **interest rate** tells you how much you'll be charged, and it can vary between lenders.
>
> **Simple interest** is calculated using this formula: **I = P × r × t**.
>
> I is the amount of interest paid, P is the principal or amount borrowed,
>
> r is the interest rate (as a decimal), and t is time (in years).

Bronze: You and a friend each borrow $500 to start a small business. You each have one year to pay it back. You pay 6% simple interest, and your friend pays 10%.

- **Solve**: How much more does your friend pay in interest than you?
- **Discussion**: How can a seemingly small difference in interest rate make a big difference in what you pay?

Silver: You plan to borrow $600 for a class trip and repay it over 2 years. You compare two simple interest loan offers: Loan A with 6% interest and Loan B with 9% interest.

- **Solve**: Which loan costs less in interest and by how much?
- **Discussion**: Why is it important to calculate interest amounts?

Gold: You are borrowing $1,000 to start a summer business. Three lenders offer the same loan term (2 years), but different rates, each for a simple interest loan. The first one you visit offers a rate of 10%. The second offers an interest rate of 7%, and the third offers 5%.

- **Solve**: How much more would you have paid in interest if you'd gone to the first two lenders? How much did you save by visiting all three?
- **Discussion**: What can this tell you about shopping around before borrowing?

Borrowing Olympics Event 5: Loan Term High Jump

Directions: Decide as a team which medal you will attempt. Solve the math problem and be prepared to answer the discussion question. Use this information for all levels:

The **term** of a loan is how long you have to repay what you borrowed, and it plays a significant role in the **total cost** of a loan.

Simple interest is calculated using this formula: **I = P × r × t**.

I is the amount of interest paid, P is the principal or amount borrowed,

r is the interest rate (as a decimal), and t is time (in years).

Bronze: You borrow $400 at 8% simple interest. You can choose to repay it in 1 year or 2 years.

- **Solve:** How much more interest would you pay if you choose the 2-year plan instead of the 1-year plan?
- **Discussion:** Why might someone choose to take longer to pay back a loan?

Silver: You plan to borrow $600 at 10% simple interest. Loan A has a term of 6 months. Loan B has a term of 1 year.

- **Solve:** How much will you pay in interest for each loan?
- **Discussion:** What are the trade-offs between a short-term and a long-term loan?

Gold: Your family borrows $2,000 for home repairs at a simple interest rate of 5%. They can repay it over 2, 4, or 6 years.

- **Solve:** Create a table showing the following information for each loan: the term (in years), the interest paid, total cost of the loan, and the monthly payment amount.
- **Discussion:** When might a longer-term loan be worth the extra cost? When is it not?

Borrowing Olympics Event 6: Balloon Payment Balance Beam

Directions: Decide as a team which medal you will attempt. Solve the math problem and be prepared to answer the discussion question. Use this information for all levels:

> A **balloon loan** allows a borrower to make small monthly payments at first, followed by one large payment at the end—called a **balloon payment**.

Bronze: You take a $600 loan for school supplies. You pay $50/month for 11 months and then the final balloon payment is $100.

- **Solve**: What is the total amount you will repay?
- **Discussion:** Why do you think it is called a balloon payment?

Silver: You plan to spend $800 on a laptop. Loan A has $50 monthly payments for 12 months plus a $240 balloon payment. Loan B will have $80 monthly payments for 12 months and no balloon payment.

- **Solve**: Which loan costs more in total and by how much?
- **Discussion**: Why might a balloon loan look cheaper than it actually is?

Gold: You borrow $720 to fix your bike. You pay $40/month for 12 months and then owe a $240 balloon payment.

- **Solve:** What percentage of the total repayment is the balloon payment?
- **Discussion**: Why should you plan ahead for the end of a balloon loan?

Borrowing Olympics Event 7: Minimum Payment Moguls

Directions: Decide as a team which medal you will attempt. Solve the math problem and be prepared to answer the discussion question. Use this information for all levels:

> Credit cards often let you pay a small **"minimum payment"** each month instead of the full amount. The payment is smaller, but this stretches out your payments and increases how much you pay in interest.

Bronze: You buy clothes with a credit card and owe $600. The minimum payment is 3% of the balance.

- **Solve**: What is your minimum payment this month?
- **Discussion**: Why do credit card companies offer such low payment options?

Silver: Your credit card balance is $500.

- **Solve:** How much more would the payment be if the minimum payment went from being 2% of the balance to 3%?
- **Discussion**: How do minimum payment percentages affect how fast you pay off your debt?

Gold: You owe $1,200. Your credit card minimum payment is the greater of 2% of the balance or $35.

- **Solve**: What is your minimum payment this month?
- **Discussion**: Why might a credit card company use a fixed minimum amount instead of a percentage?

Borrowing Olympics

STUDENT CAPTURE SHEET

Directions: Fill in the table with the stations you visited and your answers to the math problem and discussion questions. Use scrap paper to show your work for the math problems.

Station Number	Medal Choice	Math Solution	Discussion Question Answer

Borrowing Olympics: Event Overviews

1. **Simple Interest Sprint**: Students explore simple interest using the formula I = P × r × t. Each scenario builds on the last—starting with calculating interest, then total repayment, and finally comparing repayment periods to see how time impacts cost. This event strengthens algebraic reasoning and helps students understand that interest adds real cost to borrowing.

2. **Installment Dash**: This event introduces installment loans, emphasizing predictable monthly payments. Students apply division, proportional reasoning, and budgeting concepts. Problems increase in complexity—from calculating a monthly payment, to determining a loan duration, to evaluating loan affordability under budget constraints.

3. **Fine Print Freestyle**: Students practice calculating total repayment amounts and comparing loan offers. This event introduces teaser rates and fees, showing that loan costs go beyond just the monthly payment. Bronze starts with one-loan calculation, Silver adds teaser rate math and comparison, and Gold asks students to analyze all three options.

4. **Interest Rate Race**: Students explore how interest rates affect total cost using the Simple Interest Formula (I = P × r × t). They calculate and compare interest amounts at different rates, reinforcing percentage operations and the importance of evaluating loan options. This event strengthens both mathematical reasoning and financial decision-making.

5. **Loan Term High Jump**: In this event, students explore how the term of a loan—the length of time you have to repay it—affects the total cost of borrowing. Using the Simple Interest Formula (I = P × r × t), students calculate and compare interest costs as the loan term increases. This activity builds proportional reasoning and helps students evaluate the real trade-offs between short- and long-term loans.

6. **Balloon Payment Balance Beam**: This event introduces students to the concept of balloon loans, which start with smaller monthly payments but require a large payment at the end. Students will apply arithmetic, percentage, and comparison skills to analyze how balloon payments affect total repayment and why they can be risky. This event also supports financial decision-making by helping students look beyond the monthly payment.

7. **Minimum Payment Moguls**: In this event, students are introduced to credit card minimum payments—small payments that allow borrowers to delay full repayment but increase interest and repayment time. Students calculate minimum payments based on percentages and flat minimums and explore why credit card companies structure payments this way. This event encourages critical thinking about repayment strategies and the long-term benefits and trade-offs of small payments.

Borrowing Olympics Event 1: Simple Interest Sprint

Answers:

Bronze: You borrow $300 from your older sister to help pay for a school trip. She charges you 5% simple interest per year, and you agree to pay her back in 2 years.

- **Solve:** How much extra will you owe in interest? I = 300 × 0.05 × 2 = **$30**
- **Discussion**: Why do people or companies charge interest when they lend money? Lenders can make a profit by lending money and charging interest. However, there is also a risk that they won't get paid back. The potential for profit can outweigh the risk of not being repaid.

Silver: You borrow $200 from your cousin to buy a used gaming console. He charges 6% simple interest per year, and you will repay him after 3 years.

- **Solve:** What is the total amount you'll pay back, including interest? I = 200 × 0.06 × 3 = $36; Total Repayment = 200 + 36 = **$236**
- **Discussion**: Why might someone borrow money even though they'll have to pay back more than they took out? Borrowing can help pay for things immediately (emergencies, sudden opportunities) or something big (car, house, college education). Borrowing might be the only option if a person doesn't have enough money saved. The benefit of having the item now may outweigh the extra cost later.

Gold: You plan to borrow money to start a lawn mowing business. A family member agrees to loan you $950 so you can purchase the equipment and supplies you need. They will charge you 4% simple interest. You're trying to decide if you will repay the loan in 2 years or 3 years.

- **Solve:** How much can you save in interest if you pay it off in 2 years instead of 3? 2 years: $950 × 0.04 × 2 = $76; 3 years: $950 × 0.04 × 3 = $114; Interest Savings: $114 – $76 = **$38**
- **Discussion:** How can the length of a loan affect the total amount you repay? Longer loans cost more in interest, even at the same rate.

Teacher Tips:

- Reinforce that the Simple Interest Formula is linear.
- Emphasize real-world connections. Students might borrow from family or friends now, but banks operate with the same basic math.

Optional Follow-Up Questions:

- What would happen if the interest rate doubled?
- How does interest add to the cost of borrowing?
- How might interest rate changes affect your decisions to borrow?
- How does changing one variable in the formula (like time) affect the total interest?

Borrowing Olympics Event 2: Installment Dash

Answers:

Bronze: You borrow $240 from your aunt to fix your bike. You agree to pay her the same amount each month for 6 months.

- **Solve:** What is your monthly payment? $240 ÷ 6 months = **$40 per month**
- **Discussion:** How could paying the same monthly amount be helpful when borrowing? It can help people stay on track financially, because they can plan for the same payment over and over again. Predictable payments reduce stress and make it easier to avoid falling behind.

Silver: You ask to borrow $500 from your grandparents for a new puppy, food, and supplies. They will agree to this deal if you pay them back with interest of $50. You agree to this deal and promise to pay them $25 each month until it is completely paid off.

- **Solve**: How long will it take you to pay off the loan? $500 + $50 = $550; Number of months: $550 ÷ $25 = **22 months**
- **Discussion:** Why is it important to know how long your loan will last before agreeing to it? Knowing this helps people consider the total time they'll be responsible for repaying. Long loan periods might seem easier each month, but they can make the debt feel never-ending. A clear repayment timeline helps people make smarter financial commitments.

Gold: You're offered a $360 loan at 5% simple interest to pay for summer camp. It must be paid off before next summer in 12 months. Your budget allows no more than $30 per month in loan payments.

- **Solve**: Will this loan fit your budget? I = $360 x 0.05 x 1 = $18, Total amount = $360 + $18 = $378, Monthly payment = $378 ÷ 12 = $31.50, $31.50 › $30, **No—you cannot afford the loan amount**. It would fit if the loan term were extended to 13 months.
- **Discussion**: What should you consider when deciding how much to borrow? Before agreeing to borrow money, it's important to make sure the monthly payments fit your budget. If you borrow too much or choose a loan with a high interest rate, you might not be able to keep up. Borrowers should think about their income, other expenses, and how long they'll be making payments before agreeing to a loan.

Teacher Tips:

- Reinforce the difference between the loan amount and total repayment.
- Share that while the interest here is simple, many real-world installment loans (like car loans) include compound interest and, in many cases, fees.
- Consider using manipulatives or number lines to help students visualize total repayment vs. monthly cost.

Optional Follow-Up Questions:

- How might monthly payments make a loan seem affordable even though it is expensive overall?
- What happens if someone pays more than the monthly amount—could they finish early?
- What might happen if a person can't make one of their monthly payments?

Borrowing Olympics Event 3: Fine Print Freestyle

Answers:

Loan Comparison Table

Loan	APR (Annual Percentage Rate)	Monthly Payment	Loan Term	Fees
A	10%	$55	12 months	$0
B	6% for 6 months, then 12%	$50	12 months	$20
C	9%	$53	12 months	$15

Bronze: You are thinking about using Loan A to borrow $600 for a new bike. 12 × $55 = **$660**

- **Solve:** What will the total cost of the loan be over 12 months?
- **Discussion:** Why do you need to look at more than just the APR when deciding which loan to choose? APR gives a general sense of the loan's cost, but the monthly payment and any extra fees also matter. A higher APR might still be cheaper overall if it comes with no fees or a shorter term.

Silver: You are comparing Loan B and Loan C to see which is the better deal. Loan B has a teaser rate that only lasts for 6 months. After that, the payment increases by $7.

- **Solve:** Which loan will cost you less in total over 12 months? Loan B: (6 × $50) + (6 × $57) + $20 = $300 + $342 + $20 = $662; Loan C: (12 × $53) + $15 = $636 + $15 = $651; $662 - $651 = $11; **Loan C costs $11 less than Loan B.**
- **Discussion:** Why might a loan with a lower starting payment end up costing more? Teaser rates can make a loan seem better than it is. You need to know what the rate changes to and for how long. A consistent, higher monthly payment might end up being cheaper.

Gold: You want the best deal overall and are willing to do the math!

- **Solve:** Calculate the total cost of all three loans and identify the one with the lowest total repayment. Loan A: 12 × $55 = $660, Loan B: (6 × $50) + (6 × $57) + $20 = $300 + $342 + $20 = $662; Loan C: $53 × 12 + $15 = $651; $651 < $660 < $662; Loan C has the lowest cost.
- **Discussion:** What lessons can you learn about borrowing by comparing all the loan offers? Comparing all factors—payment amount, term, fees, and teaser rates—gives a clearer picture. Choosing the lowest monthly payment without doing the math can lead to paying more in the long run.

Teacher Tips:

- Encourage students to annotate or highlight relevant parts of the loan table as they work.
- Emphasize real-world relevance—teaser rates and fees are common in credit card and car loan offers.

Optional Follow-Up Questions:

- How can a loan with a higher APR end up costing less than one with a lower APR?
- What are some red flags to look for when reading the fine print of a loan offer?
- Why might someone still choose a more expensive loan, even when cheaper options exist?

Borrowing Olympics Event 4: Interest Rate Race

Answers:

Bronze: You and a friend each borrow $500 to start a small business. You each have one year to pay it back. You pay 6% simple interest, and your friend pays 10%.

- **Solve**: How much more does your friend pay in interest than you? Your interest: $500 × 0.06 × 1 = $30; Friend's interest: $500 × 0.10 × 1 = $50; Difference = $50 – $30 = **$20 more**
- **Discussion**: How can a seemingly small difference in interest rate make a big difference in what you pay? Even a small difference in the interest rate adds up. Over time or with larger loans, this difference can be significant—costing or saving someone hundreds of dollars.

Silver: You plan to borrow $600 for a class trip and repay it over 2 years. You compare two simple interest loan offers: Loan A with 6% interest and Loan B with 9% interest.

- **Solve**: Which loan costs less in interest and by how much? Loan A: $600 × 0.06 × 2 = $72; Loan B: $600 × 0.09 × 2 = $108; Difference = $108 – $72 = $36; **Loan A costs $36 less than loan B.**
- **Discussion**: Why is it important to calculate interest amounts? Calculating the actual interest helps borrowers make informed decisions. Rates might seem close, but the actual cost can vary a lot depending on the amount and time.

Gold: You are borrowing $1,000 to start a summer business. Three lenders offer the same loan term (2 years), but different rates, each for a simple interest loan. The first one you visit offers a rate of 10%. The second offers an interest rate of 7%, and the third offers 5%.

- **Solve**: How much more would you have paid in interest if you'd gone to the first two lenders? How much did you save by visiting all three? Lender 1: $1,000 × 0.10 × 2 = $200; Lender 2: $1,000 × 0.07 × 2 = $140; Lender 3: $1,000 × 0.05 × 2 = $100; Difference between Lenders 1 and 3 = $200 – $100 = $100 less, Difference between Lenders 2 and 3 = $140 – $100 = $40 less
- **Discussion**: What can this tell you about shopping around before borrowing? Shopping around for a better interest rate can lead to big savings—especially with large loans or long repayment terms. Taking time to compare options is a smart financial move.

Teacher Tips:

- Help students recognize that even seemingly small percentage differences can add up over time or at higher dollar amounts.
- Reinforce the difference between interest rate and total interest paid.
- Point out that in all three problems, one variable in the equation was being changed—the interest rate.

Optional Follow-Up Questions:

- Some lenders charge higher interest rates to people with a poor history of paying off loans. Why do you think they do this?
- What other factors besides interest rate might affect which loan someone chooses?

Borrowing Olympics Event 5: Loan Term High Jump

Answers:

Bronze: You borrow $400 at 8% simple interest. You can choose to repay it in 1 year or 2 years.

- **Solve**: How much more interest would you pay if you choose the 2-year plan instead of the 1-year plan? 1-year: I = 400 × 0.08 × 1 = $32; 2-year: I = 400 × 0.08 × 2 = $64; Difference: $64 – $32 = **$32 more interest if the loan lasts 2 years**
- **Discussion**: Why might someone choose to take longer to pay back a loan? Someone might choose a longer repayment time to reduce the monthly payment and make it more affordable in the short term—even though it means paying more overall.

Silver: You plan to borrow $600 at 10% simple interest. Loan A has a term of 6 months. Loan B has a term of 1 year.

- **Solve**: How much will you pay in interest for each loan? Loan A: I = 600 × 0.10 × 0.5 = $30; Loan B: I = 600 × 0.10 × 1 = **$60**
- **Discussion**: What are the trade-offs between a short-term and a long-term loan? Short-term loans usually cost less in interest, but they require larger monthly payments. Long-term loans have lower monthly payments which might be easier to pay, but they cost more in interest.

Gold: Your family borrows $2,000 for home repairs at a simple interest rate of 5%. They can repay it over 2, 4, or 6 years.

- **Solve:** Create a table showing the following information for each loan: the term (in years), the interest paid, total cost of the loan, and the monthly payment amount. *Monthly payment = Total cost ÷ Number of Months

Term	Interest Paid	Total Cost	Monthly Payment*
2 years	2,000 × 0.05 × 2 = $200	2,000 + 200 = $2,200	2,200 ÷ 24 = $91.67
4 years	2,000 × 0.05 × 4 = $400	2,000 + 400 = $2,400	2,400 ÷ 48 = $50.00
6 years	2,000 × 0.05 × 6 = $600	2,000 + 600 = $2,600	2,600 ÷ 72 = $36.11

- **Discussion:** When might a longer-term loan be worth the extra cost? When is it not? A longer-term loan may be worth the extra cost if someone is focused on keeping the monthly payments affordable. However, the total cost can rise significantly, so longer terms should be used only when truly needed.

Teacher Tips:

- Encourage students to show their work and clearly label I, P, r, and t in their calculations.
- Reinforce the idea that time and interest are directly proportional in simple interest loans.

Optional Follow-Up Questions:

- If the interest rate stayed the same but you borrowed more money, how would that affect the interest?
- What kinds of purchases might be worth taking out a longer-term loan for?

Borrowing Olympics Event 6: Balloon Payment Balance Beam

Answers:

Bronze: You take a $600 loan for school supplies. You pay $50/month for 11 months and then the final balloon payment is $100.

- **Solve**: What is the total amount you will repay? Monthly payments: 11 × $50 = $550; Balloon payment: $100; Total repayment = $550 + $100 = **$650**
- **Discussion:** Why do you think it is called a balloon payment? The final payment is called a balloon because it's much bigger than the others—it "inflates" at the end. Borrowers might not realize how much they still owe until it's due.

Silver: You plan to spend $800 on a laptop. Loan A has $50 monthly payments for 12 months plus a $240 balloon payment. Loan B will have $80 monthly payments for 12 months and no balloon payment.

- **Solve**: Which loan costs more in total and by how much? Total for Loan A = $840; Total for Loan B = $960; $960 - $840 = $120: **Loan B is $120 more than Loan A**
- **Discussion**: Why might a balloon loan look cheaper than it actually is? Balloon loans often look cheaper upfront because of the small monthly payments. However, people might not budget for the final payment and may need to borrow again to cover it—which can lead to more debt.

Gold: You borrow $720 to fix your bike. You pay $40/month for 12 months and then owe a $240 balloon payment.

- **Solve:** What percentage of the total repayment is the balloon payment? Monthly payments: $40 × 12 = $480; Balloon: $240; Total repayment = $480 + $240 = $720; Percentage from balloon = ($240 ÷ $720) × 100 = 33.33%
- **Discussion**: Why should you plan ahead for the end of a balloon loan? Since balloon payments are due all at once, it's essential to plan ahead. If someone forgets about it or doesn't have the money, they might fall behind or need another loan.

Teacher Tips:

- Emphasize the difference between monthly affordability and total affordability.
- Connect to real-world examples like car leases, interest-only mortgages, or buy-now-pay-later apps, which may delay large costs.
- Ask students how they would feel if they forgot about the balloon payment to address the emotional awareness component of financial planning.

Optional Follow-Up Questions:

- How could a balloon loan get someone into financial trouble?
- Why might a business use a balloon loan even if it costs more later?
- What happens if a borrower can't make the final balloon payment?

Borrowing Olympics Event 7: Minimum Payment Moguls

Answers:

Bronze: You buy clothes with a credit card and owe $600. The minimum payment is 3% of the balance.

- **Solve**: What is your minimum payment this month? Minimum payment = 3% of $600 = 0.03 × $600 = $18
- **Discussion**: Why do credit card companies offer such low payment options? Credit card companies offer low minimum payments to make repayment seem easy and manageable. However, these small payments benefit the lender because they stretch out the time it takes to repay the loan—increasing the total interest they collect from borrowers.

Silver: Your credit card balance is $500.

- **Solve:** How much more would the payment be if the minimum payment went from being 2% of the balance to 3%? 2% of $500 = 0.02 × $500 = $10; 3% of $500 = 0.03 × $500 = $15; Difference = $15 – $10 = **$5 more**
- **Discussion**: How do minimum payment percentages affect how fast you pay off your debt? Even a small change in the percentage can make a big difference over time. Paying a slightly higher percentage helps reduce your balance faster and saves money on interest. Minimum payment percentages can encourage either slow or faster debt repayment depending on how they're set.

Gold: You owe $1,200. Your credit card minimum payment is the greater of 2% of the balance or $35.

- **Solve**: What is your minimum payment this month? 2% of $1,200 = 0.02 × $1,200 = $24; Compare: $24 vs. $35 ⇢ the greater is $35; **Minimum payment this month = $35**
- **Discussion**: Why might a credit card company use a fixed minimum amount instead of a percentage? Credit card companies may set a minimum dollar amount to ensure at least a modest reduction in balance. If payments were based only on percentages, very small balances might result in tiny payments that barely cover interest. A fixed minimum helps prevent the debt from lasting forever.

Teacher Tips:

- Emphasize that minimum payments can lead to longer debt periods and more interest paid.
- Relate this event to Event 5 (loan terms) and Event 6 (balloon payments), reinforcing how payment timing affects total cost.
- Discuss how interest accumulates if you don't pay the full balance—even though interest isn't calculated in these problems, it's critical for context.

Optional Follow-Up Questions:

- What happens if someone only pays the minimum every month for a year?
- Why might a borrower prefer to pay more than the minimum, even if it's not required?
- How does a credit card company benefit when someone makes only the minimum payment?

Borrowing Olympics Medals

Directions: Cut out each medal and distribute to students with the most points at the end of the activity.