

Name:

IN THIS LESSON, YOU WILL:

- Calculate the future value of a periodic investment
- Analyze exponential growth rate using a real-world scenario about loan repayment and investment returns.
- Explain the difference between private and Federal loans, and summarize the different types of Federal loans
- Consider strategies to minimize student loan debt
- Understand the different loan repayment options available
- Analyze sample graduate profiles and choose the repayment option that works best in the context of an individual's situation



INTRO

CONSIDER: Previewing Student Loans

Before we dive into student loans, consider what you already know about them and what you're curious to learn more about. Any level of familiarity is okay here, whether you're brand-new to the topic or an expert.

- 1. Complete the first two columns of the chart with what you know and what you want to know about student loans.**

Know	Want To Know	Learned



LEARN IT

VIDEO: [Federal vs. Private Student Loans](#)

There are many different student loans you can use to pay for your education, but they generally fall into two categories: Federal and private student loans. Watch the video and answer the questions.

1. **As you watch the video, complete the t-chart comparing federal and private student loans.**

Federal Student Loans	Private Student Loans

2. **Why do the video recommend you explore your federal loan options before private loan options?**

ARTICLE: [Choosing a Loan That's Right for You](#)

Now that you have an overview of federal and private student loans, learn about the different types of federal loans and the detailed steps for how to choose a loan. Read the article and answer the questions.

1. **Which student loan does NOT charge you interest while you're in school as an undergraduate?**
 - a. Direct Subsidized
 - b. Direct Unsubsidized
 - c. Direct PLUS
 - d. Private
2. **What is the first step the article identifies for getting a federal student loan?**
3. **If you need to get a private student loan, what steps does the article recommend?**

DATA CRUNCH: [What's the Distribution of Federal Student Loan Debt in the U.S.?](#)

How much should you expect to have in student loans? That answer will depend on personal factors, but we can still learn a lot from data on the distribution of student loan balances. Analyze the data and answer the questions on this worksheet to complete the Data Crunch.

ARTICLE: [How To Reduce Student Loan Debt While You're in School](#)

You've learned about your student loan options; now, consider some of these ways you might be able to reduce your overall student loan debt. Follow your teacher's directions to read a portion of this article and answer the questions.

- 1. Read the article portion assigned to you by your teacher and write 2-3 tips for reducing student loan debt in the chart below. As your classmates share out their findings, complete the chart with 2-3 additional tips.**

Before College	During College

- 2. Which tip would be the most useful for YOU personally? Why?**

VIDEO: [Repayment: What to Expect](#)

What happens when it's time to repay your student loans? After graduation, you'll have a number of federal student loan repayment plans to choose from, based on your financial situation. Watch this video to learn when and how you can expect to repay your federal student loans. Remember - private loans will have their own terms and repayment options.

Note: You can likely disregard informations specific to Perkins loans, unless you you are currently repaying a Perkins loan. Schools are no longer offering new Perkins loans.

1. When do you have to start repaying your loan if you have a federal direct subsidized loan or a federal direct unsubsidized loan?
2. What does a loan servicer do?
3. What are some reasons someone might switch from the standard repayment plan to a graduated, extended, or income-based plan?

ACTIVITY: COMPARE: Which Repayment Option is Best?

Let's explore the different repayment options. In this activity, you'll use a loan simulator to compare which repayment option is the best for different scenarios. Follow the directions on the worksheet to complete this activity.



MATH CONNECTION - FUTURE VALUE OF A PERIODIC INVESTMENT

Are Additional Loan Payments Worth It?



Lin recently graduated with \$24,983 in federal student loans at a 3.73% annual interest rate. Her monthly student loan payment is \$250.

Lin has some flexibility in her budget and is deciding whether she should pay off her student loans more quickly or invest more. She can afford to pay additional \$150 per month towards her student loan balance, beyond the minimum payment. Or, she could invest that extra \$150 and make only the minimum payment.

Part I: Repayment Options

1. Review the table summarizing Lin's repayment options.

	Option 1: \$250 monthly payment (minimum payment only)	Option 2: \$400 monthly payment (\$250 minimum + \$150 additional)
Total interest paid	\$4,987	\$2,838
Total cost of the loan	\$29,970	\$27,821
Time to repayment	10 years	5 years and 10 months

- a. How much faster would Lin pay off her student loans if she makes the additional payment?
- b. How much more does Lin's loan cost if she makes the minimum \$250 payment?
- c. Why does Lin's loan cost more if she only makes the \$250 minimum payment?

Part II: Investment Value

Lin wants to invest any additional money that she isn't putting towards student loans. We can use the following formula to estimate the future value of Lin's investment if she deposits the same amount each month.

Future Value of a Period Deposit Formula

$$B = \frac{D \left(\left(1 + \frac{r}{n} \right)^{n \cdot t} - 1 \right)}{\frac{r}{n}}$$

B = balance at the end of the investment period

D = periodic deposit amount

r = annual interest rate or rate of return

n = number of times interest is compounded annually

t = length of investment in years

2. **If Lin makes the minimum \$250 payment on her loan, she can invest the additional \$150 per month. Assume she makes these investments for 10 years and earns an 8% annual rate of return, compounded monthly, on her investments**
 - a. Identify the variables in the formula above for Lin's investment

D =

r =

n =

t =
 - b. Use the Future Value of a Periodic Deposit Formula to calculate her investment's predicted value after 10 years
3. **However, if Lin pays \$400 towards her student loans now, she'll be done repaying her loan sooner and can then invest the full \$400. Calculate Lin's investment value at the end of the same 10-year period if she invests \$400 per month, starting in the month after her student loans are paid off.**
4. **Should Lin make additional loan payments or invest that money? Justify your reasoning. If you're unsure, what additional information would you need to decide?**



EXIT TICKET

Follow your teacher's instructions to complete the Exit Ticket.

Teachers, you can find exit ticket questions on the Lesson Guide.