

 BUILDING BLOCKS STUDENT WORKSHEET

Calculating loan payments

If you ever need to borrow money, you'll likely find credit and loan offers that may seem hard to resist. However, understanding the real costs of borrowing money can help you make informed credit and loan decisions.

Instructions

- 1 Read the case study to help Camryn choose a credit option to fund her business idea.
- 2 Calculate the interest charged, total amount of the loan, and monthly payments for her credit offers.
- 3 Compare offers.
- 4 Describe which credit offer you would choose for Camryn and discuss the factors you evaluated as you considered the options.
- 5 Answer the reflection questions.

Case study: Camryn's car detailing venture

Camryn: "Dad, I've been thinking about starting a car detailing business this summer instead of working at the hot dog stand again. I'm considering getting a small loan to buy the equipment I need. I know I'd need to start with things like a new hose, a wet/dry shop vacuum, cleaning supplies, and a power washer. I figure I'll need to borrow about \$1,500 to get this off the ground. But, if my calculations are right, I can make that back in the first three weeks of running my business."

Dad: "What loan options have you found?"

Camryn: "Well, after doing a bunch of research, I've found three options. First, I can put the cost of these purchases on the credit card that I share with you. A credit card is revolving credit where I can use my card to make additional



purchases as needed, up to my credit limit amount. But if I add any additional purchases on this credit card, it could lengthen the time required to pay off my original debt, and my payments could change from month to month depending on the amount of money I have charged to this account.”

Dad: “This is true. I’m glad you are recognizing that the open lines of credit on a credit card may tempt an individual to use their card too often and definitely could cause you to have different monthly payment amounts, which is hard to budget for. What other options did you research?”

Camryn: “A second option is to open up an account with the supply store down the street. They said I can get a one-time discount of 10 percent off my purchases if I open a new account with them. I like the idea of saving money when I buy some supplies from this store.”

Dad: “It’s always good to look for a discount and ways to save money! But compare the cost of the credit – the annual percentage interest rate, too. A discount on the supplies might be outweighed by an interest rate higher than you could get elsewhere.”

Camryn: “As I was leaving the store, I saw that there’s also a “buy now, pay later” option that would let me buy supplies with little or money up front. I could split the cost of the supplies into four payments every two weeks with no interest.”

Dad: I heard about those. Make sure you research what’s involved with that option. You’d need to make sure you’ll have the money to make the payment every two weeks. Most companies that make “buy now, pay later” loans don’t charge interest, but they do charge late fees. Plus, “buy now, pay later” loans don’t offer the same protections as credit cards if there’s a problem with something you bought. And it can sometimes get complicated if you have to return something before you paid it off. It’s important to understand all the lender’s requirements and policies before signing up for a “buy now, pay later” loan, just like with any other loan.

Camryn: “Hmm, maybe I’ll look into that another time. My third possibility is a new credit card offer I got in the mail last week. I could apply for this new card and use this option. I’d love your help figuring out which is the best way to go.”

Dad: “Well, you need to analyze the details that go with each offer to make the wisest decision. To do this, you’ll need to gather information about each offer so we can compare them and weigh the pros and cons of each one. Also, in order to take advantage of that credit card offer you’ve told me about, because of your age and payment history, you probably need me to cosign your application. That puts

my credit record at risk if you don't make the payments. Another important thing to know is that sometimes new credit card offers have some unexpected twists. So once you analyze that offer, let's take all of these things into consideration."

Here are the details Camryn gathered about the offers:

Features to consider	Option #1: Current credit card with dad	Option #2: Open a credit account with supply store	Option #3: Use new credit card offer
Principal	\$1,500	10% off items purchased (\$1,500 in purchases)	\$1,500
Interest rate (APR)	9.5%	12%	22%
Loan term	2 years	2 years	2 years
Special financing	None	None	1 year no interest

For purposes of explaining how interest can add to the cost of an original purchase amount, Camryn's father introduced her to a simple interest formula – Interest = Principal x Rate x Time ($I = P \times R \times T$) – to help her make informed comparisons.

- I = Interest: the amount of simple interest
- P = Principal: the original amount borrowed
- R = Rate: the interest rate of the loan
- T = Time: the term (length) of the loan, expressed in years (from the start of the loan to full repayment, with periods less than 1 year computed on the basis of 365 days/year)

Camryn's father made sure to explain that this in a simplified formula meant to give her a basic idea of what she'd owe, but she needs to be prepared for the actual loan payments to vary from her calculations. He also explained that to figure out monthly payments, Camryn will need to calculate the number of months in the credit option's term.

Compare Options 1, 2, and 3

Help Camryn figure out her monthly payment for her credit options.

To calculate the "Interest charged" column:	To calculate the "Total amount paid" column:	To calculate the "Monthly payment" column:
$I = P \times R \times T$ The # in the "principal" column x the # in "rate" column (expressed as a decimal) x the # in "term" column	Add the # in the "principal" column and the # in the "interest charged" column	The term is expressed in years. To find the monthly payment, calculate the # of months in the term. Divide the # in the "Total amount paid" column by the # of months.

Review the answers for Option 1 and then do the calculations for Options 2 and 3.

	Principal	Rate	Term	Interest charged	Total amount paid	Monthly payment
Option 1	\$1,500	9.5%	2 years	\$285	\$1,785	\$74.38
Option 2						
Option 3						

How do the different principal amounts and the different interest rates affect the loan?

What is the benefit of the "zero interest" offer that goes with the new credit card?
 What happens when the "zero interest" period ends?

Reflection questions

Based on your calculations and comparisons, which loan option would you recommend to Camryn to cover the cost of starting her business? Why?

What details did you evaluate when making your decision?

Camryn mentioned an option called a “buy now, pay later” loan that was interest-free and would let her pay little or no money up front and divide the cost into four payments. Her dad explained some possible drawbacks to these loans. What are some reasons you would consider a “buy now, pay later” loan for a major purchase? What are some reasons you wouldn't?