

 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

Use the case study to help Camryn choose a credit option to fund her business idea.

1. Read about Camryn's dilemma and identify key details that distinguish each offer.
2. Calculate the interest charged, total amount of the loan, and monthly payments for each offer.
3. Compare offers.
4. Describe which credit offer you would choose for Camryn and discuss the factors you evaluated as you considered the options.

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 shop 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 identified?"

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. However, 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 that 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: "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: "Third, I got a new credit card offer in the mail last week, so 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 offer. Also, you should know that in order to take advantage of that credit card offer you've told me about, because of your age and lack of ability to support yourself, you probably need me to cosign your application. That puts my credit record at risk if you don't make the payments. Also, 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%	12%
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 strategy to help her apply the simple interest formula: Interest = principal x rate x term of loan ($I = P \times R \times T$) 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 = Term: the 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 is an oversimplified formula meant to give her a basic idea of what she’d owe, but she needs to be prepared that the actual loan payments may vary from her calculations.

Compare Options 1, 2, and 3

Help Camryn figure out her monthly payment for all three 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 principal column with the # in the interest charged column	Divide the # in the "Total amount paid" column by the # in the term column (expressed in years)

	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 change the loan?

Camryn remembered that the new credit card offer included a special incentive of one year no interest. Recalculate Camryn's costs for Option 3 factoring in this incentive.

Option 3	Principal	Rate	Term	Interest charged	Total amount paid	Monthly payment
Incentive 1			2 years with 1 year no interest			

What is the benefit of the "zero interest" offer that goes with the new credit card? What are some potential challenges with this new credit card solution? What happens at the end of the "zero interest" time period?

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?