

## Lesson 4: Why Do Banks Pay YOU to Provide Their Services?

### Classwork

#### Example 1

Kyra has been babysitting since 6<sup>th</sup> grade. She has saved \$1,000 and wants to open an account at the bank so that she will earn interest on her savings. Simple Bank pays simple interest at a rate of 10%. How much money will Kyra have after 1 year? After 2 years, if she does not add money to her account? After 5 years?

Raoul needs \$200 to start a snow cone stand for this hot summer. He borrows the money from a bank that charges 4% simple interest per year.

a. How much will he owe if he waits 1 year to pay back the loan? If he waits 2 years? 3 years? 4 years? 5 years?

b. Write a formula for the amount he will owe after  $t$  years.

**Example 2**

Jack has \$500 to invest. The bank offers an interest rate of 6% compounded annually. How much money will Jack have after 1 year? 2 years? 5 years? 10 years?

**Example 3**

If you have \$200 to invest for 10 years, would you rather invest your money in a bank that pays 7% simple interest or in a bank that pays 5% interest compounded annually? Is there anything you could change in the problem that would make you change your answer?

**Lesson Summary**

**Simple Interest:** Interest is calculated once per year on the original amount borrowed or invested. The interest does not become part of the amount borrowed or owed (the principal).

**Compound Interest:** Interest is calculated once per period on the current amount borrowed or invested. Each period, the interest becomes a part of the principal.

**Problem Set**

1. \$250 is invested at a bank that pays 7% simple interest. Calculate the amount of money in the account after 1 year, 3 years, 7 years, and 20 years.
2. \$325 is borrowed from a bank that charges 4% interest compounded annually. How much is owed after 1 year, 3 years, 7 years, and 20 years?
3. Joseph has \$10,000 to invest. He can go to Yankee Bank that pays 5% simple interest or Met Bank that pays 4% interest compounded annually. After how many years will Met Bank be the better choice?