

# Simple and Compound Interest

$$y = Prt \text{ AND } y = P \left( 1 + \frac{r}{n} \right)^{nt}$$



**PACIFIC NW**  
FEDERAL CREDIT UNION

Name \_\_\_\_\_

# Compound Interest

**Lesson:** Compound Interest - Math

**Grade Level:** High School

**Goal:** Students will be able to:

- Define interest and compound interest.
- Describe how compound interest can help or harm your finances.
- Calculate the benefits and cost of compound interest using an online calculator.
- Search online to identify financial institutions that pay the highest interest rates on savings accounts.
- Calculate simple and compound interest.

**Procedure:**

1. Begin with the PowerPoint presentation.
2. Have students review what compound interest is in slide 1-6.
3. If possible, lead a discussion to answer any questions students have before assigning the first 2 worksheets.
4. Assign worksheet 1 – *Motivate Me!* and worksheet 2 – *Discovering Interest – A Web Quest*
5. Give students time to complete this portion of the lesson.
6. The second half of the lesson teaches the mathematical component of compound interest.
7. Allow students time to review the rest of the PowerPoint (starting with slide 7).
8. If possible, lead a discussion to show students how to work through the equation and answer any questions they have.
9. Assign *Simple and Compound Interest Practice* worksheet and the *challenge problem*.
10. Allow students time to complete the worksheet and review the work.

## Motivate Me!

A local television station is doing a feature story to encourage viewers to reduce debt and save money for their future. They are having a contest to find the best “sound bite” (i.e., a short phrase that is easy to remember) about compound interest that they can use in their savings campaign.

### Criteria:

- No more than 15 words
- Motivational
- Must include the words “interest” or “compound interest.”
- Easy to understand.
- Broad appeal to diverse audiences

Write a short phrase or slogan to persuade people to reduce debt and/or save money. To get started, think about your feelings regarding money. What would motivate you to pay off debt quickly and save?

## Discovering Interest – A Web Quest

Compound interest is your best friend when you earn interest on your savings. It is even a better friend when you earn the best available interest rate. In this activity, you will conduct an online search to identify financial institutions that pay the highest interest rates to maximize the power of compound interest.

### Instructions:

1. Go to an online search engine (e.g., Google, Bing) and search for “sources of highest interest rate savings accounts.”
2. Read three articles (not paid advertisements) that describe ways to earn a higher interest rate on savings.
3. When you are done reading, complete the table below by listing three key pieces of information.
4. Be prepared to discuss the information you found with the entire class.

| Information Source | Advice About Earning Higher Interest Rate on Savings |
|--------------------|--|
|                    |  |
|                    |  |
|                    |  |

## Simple and Compound Interest Practice

**Directions:** Calculate the simple and compound interest for each scenario.

1. You invest \$20,000 at 5% for 10 years; compounded monthly.

Simple \_\_\_\_\_ Compound \_\_\_\_\_

2. You invest \$20,000 at 5% for 20 years; compounded monthly.

Simple \_\_\_\_\_ Compound \_\_\_\_\_

3. You invest \$20,000 at 5% for 30 years; compounded monthly.

Simple \_\_\_\_\_ Compound \_\_\_\_\_

4. Complete the chart for the following scenario: You invest \$30,000 at 7%; compounded semi-annually.

| Years | Simple Interest | Compounded Interest |
|-------|-----------------|---------------------|
| 10    |                 |                     |
| 20    |                 |                     |
| 30    |                 |                     |
| 40    |                 |                     |

5. What do you notice about the difference in your investment as the length of the investment increases?