

Name \_\_\_\_\_

Date \_\_\_\_\_

**NOW YOU TRY STUDENT WORK SHEET**  
**11<sup>th</sup> - 12<sup>th</sup> Grade**

**ANNUAL INTEREST**

1. Taylor wants to invest her **\$7,500** college fund at her bank. She picks an **annual certificate of deposit (CD)** that will pay her **3%** annually. She has a three year timeframe until she will need her college money. (Remember, **3% interest** is .03 when written as a decimal.)

A. Fill in the table to find out how Taylor's investment grows:

	Beginning Balance	3% Interest	Ending Balance
Year 1	\$7,500		
Year 2			
Year 3			

- B. If Taylor chose a **statement savings account, compounding quarterly**, how would her account **balance** increase in the first year?

	Beginning Balance	3% Interest	Ending Balance
1 <sup>st</sup> Quarter	\$7,500		
2 <sup>nd</sup> Quarter			
3 <sup>rd</sup> Quarter			
4 <sup>th</sup> Quarter			

- C. Compare the **APY** Taylor's accounts would earn depending on which account type she chose:

**Annual CD APY:**

**Statement Savings APY:**

Name \_\_\_\_\_ Date \_\_\_\_\_

## ANNUAL vs. QUARTERLY

### Compound Interest Formula

There is a formula you can use to calculate the ending balance of an investment if you know certain facts about the investment, such as: **principal**, **APR**, **compounding periods**, and **the number of years the investment lasts**.

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Where: A = Accumulated Balance  
P = Principal  
r = APR expressed as a decimal  
n = number of compounding periods/year  
t = number of years the investment lasts

Let's look again at Taylor's situation:

Taylor wants to invest her **\$7,500** college fund at her bank. She has a three-year timeframe until she will need her college money. **Annual compounding CDs and quarterly compounding statement savings accounts** are **BOTH** offering an **APR** of **3%**. (Remember, **3% interest** is .03 when written as a decimal.)

1. Complete Taylor's information below.

**Principal =**

**APR =**

**Number of years the investment lasts = 3**

Use the **compound interest formula** to compute her balance at the end of the investment. Do the calculation for the annual **CD** and the quarterly statement savings account.

**Annual CD**

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

**Quarterly Statement Savings**

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Name \_\_\_\_\_ Date \_\_\_\_\_

**ANNUAL vs. QUARTERLY vs. MONTHLY**

1. Andrea wants to invest **\$2,500** at her bank. **Annual certificates of deposit, statement savings accounts, and money market savings accounts** are all offering a **3% APR**. Andrea will not need the funds in this investment for 5 years. (Remember, **3% interest** is .03 when written as a decimal.)

Use the **compound interest formula** to calculate the ending balance of each investment:

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

2. In the space below, explain what investment advice you'd give Andrea and why.