

# ACTIVITY #2

Name: \_\_\_\_\_

For use with pages 4–5 in the May 2, 2011, issue of Scholastic *MATH* Magazine.

## Interested in Compound Interest?

In the article, you learned how to calculate simple interest, but most bank accounts use *compound interest*, where interest is earned on top of your interest.

Compound interest is calculated a little bit at a time (daily, monthly, etc.), rather than all at once. The formula we use looks complicated, but there are just five variables to know:  $A$  = ending amount of money,  $P$  = principal,  $r$  = annual interest rate (written as a decimal),  $t$  = time in years, and  $n$  = the number of times interest is compounded each year.

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

**IMPORTANT:** To fully complete this activity, you will need a scientific calculator that can handle exponents. (One that can solve equations is even better!)

**1** You open a savings account with an annual interest rate of 2% compounded biannually (twice a year). You deposit \$500 (your principal).

**a.** Write the equation (filling in the values you know) to find your ending amount after 1 year. Don't forget to write the interest rate as a decimal.

**b.** If you have a calculator, solve the equation. What would your ending amount of money be?

**2** You open up a bank account with \$750. Write the equation to find your ending amount after 3 years if you have an annual interest rate of 1% and interest is compounded...

**a.** quarterly:

If you have a scientific calculator, solve the equation, and round your answer to the nearest cent:

**b.** monthly:

If you have a scientific calculator, solve the equation, and round your answer to the nearest cent:

**c.** daily:

If you have a scientific calculator, solve the equation, and round your answer to the nearest cent:

**3a.** You deposit \$3,000 in a bank account. Write the equation to find your ending amount after 4 years with an annual interest rate of 3% and interest compounded weekly.

**b.** If you have a scientific calculator, solve the equation, and round your answer to the nearest cent: