► ACTIVITY 8.6

Group Activity for use with Lesson 8.6

Developing Concepts

SET UP Work in a small group.

MATERIALS

100 penniescup

Investigating Exponential Decay

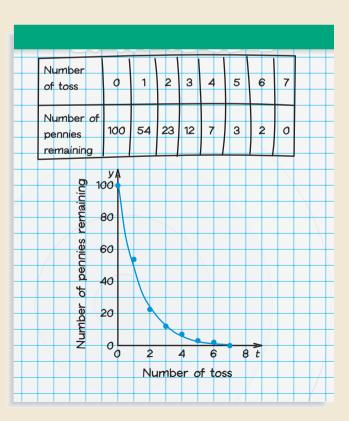
QUESTION Can an exponential decay model show a decreasing amount?

EXPLORING THE CONCEPT

1 Make a table to record your results.

Number of toss	0	1	2	3	4	5	6	7
Number of pennies remaining	?	?	?	?	?	?	?	?

- Place the pennies in the cup. Shake the pennies in the cup then spill them onto a flat surface. Remove all of the pennies that land face up. Count and record the number of pennies remaining.
- 3 Repeat Step 2 until there are no pennies left in the cup.
- Make a scatter plot of the data you have collected.



DRAWING CONCLUSIONS

- **1.** Describe any patterns suggested by the scatter plot.
- **2.** Look at your data and scatter plot to complete the following statement.

Each time the cup is emptied, the number of pennies you remove is about <u>?</u> of the number in the cup.

- **3.** Write an exponential equation to model this situation.
- **4.** Compare your equations and graphs with those of other groups. Describe any patterns you see.