

## Extension

Use after Lesson 13.1

# Perform Simulations



**GOAL** Perform simulations to make predictions.

### Key Vocabulary

- simulation

A **simulation** is an experiment that you can perform to make predictions about real-world situations.

### EXAMPLE 1 Perform a simulation

**CONCESSION PRIZES** Each time you buy an item from the concession stand at a baseball stadium, you receive a prize coupon, chosen at random. There is an equal chance of winning each prize from the following list: hot dog, popcorn, peanuts, pretzel, ice cream, and small drink. About how many times must you buy an item from the concession stand before you win each prize at least once?



#### Solution

You can perform a simulation to answer the question.

**STEP 1** Write each prize on a separate piece of paper. Put the pieces of paper in a container.

**STEP 2** Draw a piece of paper from the container at random. Record the result in a table like the one shown. Put the piece of paper back in the container. Repeat until you put a tally mark in the last empty cell of the table.

Prize	Hot dog	Popcorn	Peanuts	Pretzel	Ice cream	Small drink
Tally						

The sum of all of the tally marks is the number of times you must buy an item from the concession stand before you win each prize at least once.

- In this simulation, you must buy an item from the concession stand 20 times.

**USING A GRAPHING CALCULATOR** You can also use the random integer generator on a graphing calculator to perform simulations.

The random integer generator is found by pressing the **MATH** key and selecting the PRB menu. It is the fifth item on the list and is displayed as randInt(.

