

## Lesson 4-2

## Problem

**RECREATION** One-third of the fish in a pond are small mouth bass. If three random fish are caught, what is the probability that at least one of them is a small mouth bass?

- Design an experiment to simulate the situation.
- Perform 20 trials of the experiment, and calculate the probability.

## Solve the Problem

- To model a ratio of  $\frac{1}{3}$ , use a number cube. Since there are six outcomes on a number cube, write a ratio equivalent to  $\frac{1}{3}$  with a denominator of 6.

$$\frac{1}{3} = \frac{2}{6}$$

Let 1 and 2 represent catching a small mouth bass. Let 3, 4, 5, and 6 represent catching another type of fish. Since there are three fish caught, roll three number cubes at a time.

- The following results indicate the three numbers rolled for each trial. The asterisk (\*) indicates trials containing at least one of the numbers 1 or 2.

*516	*561	544	*523	336	*423	*122	534	*541	*124
*316	665	*133	*632	*113	545	*416	*243	365	466

Since 13 out of the 20 trials resulted in at least one small mouth bass, the experimental probability of catching at least one small mouth bass is  $\frac{13}{20} = 0.65 = 65\%$ .