Making Predictions with Experimental Probability

? **ESSENTIAL QUESTION**

How do you make predictions using experimental probability?

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Using Experimental Probability to Make a Prediction

Scientists study data to make predictions. You can use probabilities to make predictions in your daily life.

EXAMPLE 1 *Real World*   TEKS **7.6.C**

Danae found that the experimental probability of her making a bull's-eye when throwing darts is $\frac{2}{10}$, or 20%. Out of 75 throws, about how many bull's-eyes could she predict she would make?

Method 1: Use a proportion.

$\frac{2}{10} = \frac{x}{75}$ *Write a proportion. 2 out of 10 is how many out of 75?*

$\frac{2}{10} = \frac{x}{75}$
$\times 7.5$

$\frac{2}{10} = \frac{15}{75}$ *Since 10 times 7.5 is 75, multiply 2 times 7.5 to find the value of x.*
$\times 7.5$

$x = 15$

Method 2: Use a percent equation.

$0.20 \cdot 75 = x$ *Find 20% of 75.*

$15 = x$

You can write probabilities as ratios, decimals, or percents.

Danae can predict that she will make about 15 bull's-eye throws out of 75.

YOUR TURN

1. A car rental company sells accident insurance to 24% of its customers. Out of 550 customers, about how many customers are predicted to

   purchase insurance? _____

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