

Objective

Using Arrays to Organize Outcomes

Warm-Up



Solve each proportion for the unknown value.

1. $\frac{x}{150} = \frac{1}{12}$

2. $\frac{12}{x} = \frac{1}{36}$

3. $\frac{1}{8} = \frac{x}{100}$

4. $\frac{x}{16} = \frac{1}{4}$

GETTING STARTED

Tossing Coins

Suppose you and a partner each flip a coin at the same time. What are the different outcomes that could occur?

- Use an array to list the possible outcomes of tossing two coins into the air at the same time.

		Student 1	
		Heads	Tails
Student 2	Heads		
	Tails		

- Use your array to write the sample space for tossing two coins at the same time.

- Conduct this experiment for 30 trials and record the results.

- Calculate the experimental probability of each outcome in the table.

Outcome Student 1	Outcome Student 2	Tally	Total	Probability	Class Probability
Heads	Heads				
Heads	Tails				
Tails	Heads				
Tails	Tails				

b. Combine the results of your experiment with those of your classmates. Then calculate the experimental probability of each outcome and record the class probabilities in the table.

4. Which probability is more accurate: the probabilities from the experiment with your partner or the class probabilities? Explain your reasoning.

5. Use your table to predict the actual probabilities of each outcome. Create a probability model table to display your predictions.



Joel and Hiram are playing a game using 2 six-sided number cubes. The number cubes are rolled, and the sum of the 2 numbers shown is calculated. If the sum is even, Joel wins a point. If the sum is odd, Hiram wins a point.

1. Make a list of all possible outcomes when rolling 2 six-sided number cubes.
2. Use your list to create the sample space for the possible sums in the game.
3. Do you think each of the outcomes in the sample space is equally likely? Explain your reasoning.
4. Predict who has a better chance of winning this game. Explain your reasoning.

**LESSON 11.1a**
Events of Odds?**Objective****Using Arrays to Organize Outcomes**

Review

1. Since 1903, the National League has played the American League in the World Series. The World Series is usually won by the team winning the best out of 7 games. The table shows the number of games that were played to win each series during the first 100 World Series.

Number of Games	Number of Series Won in Given Number of Games
4 games	17 series
5 games	24 series
6 games	21 series
7 games	33 series
8 games	5 series

a. What is the probability that the next World Series will take 7 games to determine a winner?

b. What is the probability that the next World Series will take 4 games?

c. Is this theoretical or experimental probability? Use a complete sentence to explain.