

# learning focus:

- ✓ represent sample spaces and determine probabilities for simple & compound events
- ✓ solve problems involving qualitative and quantitative data
- ✓ select and use simulations and make predictions for simple & compound events

## PROBABILITY UNIT

9 DAY TEKS-ALIGNED UNIT



PROBABILITY  
PACING GUIDE

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A MANEUVERING THE MIDDLE® RESOURCE

# PROBABILITY



a 9 day TEKS-aligned unit

TEKS: 7.6A, 7.6B, 7.6C, 7.6D, 7.6E, 7.6H, 7.6I

ready-to-go, scaffolded  
student materials

## PROBABILITY UNIT

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# PROBABILITY



a 9 day TEKS-aligned unit

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## student friendly + real-world application

interactive practice

Unit: Probability  
Student Handout 6

Name \_\_\_\_\_  
Date \_\_\_\_\_ Pd \_\_\_\_\_

### DEPENDENT EVENTS

Coach Cruz is responsible for randomly selecting a captain and co-captain for the volleyball game to participate in the coin toss. There are 12 players to select from. Coach Cruz says that each team member has a one in twelve chance of being selected. Determine if you agree or disagree with Coach Cruz. Justify your thinking.

**INDEPENDENT PROBABILITY**

- When the outcome of the first event does not affect the outcome of the second event, the events are independent.

**DEPENDENT PROBABILITY**

- When the outcome of the first event affects the outcome of the second event, the events are dependent.

P(A) = \_\_\_\_\_

1. Read each situation below and determine if the events are independent or dependent.
- Flipping two coins repeatedly
  - Anita reaches into a bag and draws a red marble, then she draws a blue marble.
  - You draw a joker from a deck of cards, then you draw another card.
  - You draw a queen from a deck of cards, then you draw another card.
  - A three-digit password

Use your understanding of dependent probability to solve the problem below.

2. Neil goes to the pet shop and selects a bone for his dog. He chooses one and then chooses another. What is the probability that Neil selects a bone and then a ball?



bone • ball = \_\_\_\_\_

Read each situation carefully. Determine if the events are independent or dependent and find the probability of the events occurring.

4. Mrs. Moore is doing laundry and has various pieces of clothing in her laundry basket.



- a. What is the probability of selecting a pair of pants?

- b. What is the probability of selecting a striped sock?

- c. What is the probability of selecting a pair of pants again?

- d. What is the probability of selecting a pair of pants and a pair of socks?

- e. What is the probability of selecting a pair of pants and a pair of socks again?

5. Mrs. Wilson tells her 4<sup>th</sup> period class that tomorrow there are 20 desks with a probability that the first two people to enter the name of the student who did this class.

SAMANTHA

$$\frac{5}{20} \cdot \frac{5}{20} = \frac{1}{16}$$

COLTON

$$\frac{5}{20} \cdot \frac{5}{19}$$

Summarize today's lesson:

Unit: Probability  
Homework 6

Name \_\_\_\_\_  
Date \_\_\_\_\_ Pd \_\_\_\_\_

error analysis

# PROBABILITY



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## streamline your planning process with unit overviews

### PROBABILITY OVERVIEW



#### READINESS STANDARDS

**7.6H** Solve problems using qualitative and quantitative predictions and comparisons from simple experiments.

**7.6I** Determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces.

#### SUPPORTING STANDARDS

**7.6A** Represent sample spaces for simple and compound events using lists and tree diagrams.

**7.6B** Select and use different simulations to represent simple and compound events with and without technology.

**7.6C** Make predictions and determine solutions using experimental data for simple and compound events.

**7.6D** Make predictions and determine solutions using theoretical probability for simple and compound events.

**7.6E** Find the probabilities of a simple event and its complement and describe the relationship between the two.



key vocabulary



vertical alignment



sample  
pacing  
calendar

#### BIG IDEAS

- Probability describes the likelihood of an event occurring.
- A ratio of the event occurring to the total number of outcomes.

#### ESSENTIAL QUESTION

- How can the sample space be used to determine the probability of an event?
- When would an event have a probability of 0 or 1?
- How do theoretical and experimental probabilities compare?

### PROBABILITY PACING GUIDE



DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Simple Probability and Its Complement	Sample Space	Experimental and Theoretical Probability	Simulations and Predictions	Probability Quiz
Student Handout 1 Homework 1	Student Handout 2 Homework 2			
DAY 6	DAY 7			
Independent Events	Dependent Probability			
Student Handout 5 Homework 5	Student Handout 6 Homework 6			

### PROBABILITY OVERVIEW



TOPIC	TEACHING TIPS
Sample Space	<ul style="list-style-type: none"><li>• Bring in four t-shirts, three pairs of shorts, and a pair of socks. Use the clothing to model the various options and sketch the sample space.</li></ul>
Simple Probability	<ul style="list-style-type: none"><li>• Grab a bag of Jolly Ranchers at the store. Place 10 like-colored Jolly Ranchers in various boxes/bags. Tell students that there are 10 in each bag. Then, ask students to come to the front, select from a bag, and take note of the color. The goal is for students to begin to notice a pattern and to be able to connect the "likeliness" of selecting various colors to the Jolly Ranchers in the bag. Then, ask students to predict what they think is in the bag. Discuss their predictions as a class.</li></ul>
Experimental and Theoretical Probability	<ul style="list-style-type: none"><li>• Students need to understand that over time (long-run), the experimental probability will approach the theoretical probability.</li><li>• Have students roll die or spin spinners if those are available to you in order to test out this concept.</li></ul>
Independent and Dependent Probability	<ul style="list-style-type: none"><li>• Search <a href="http://www.pbslearningmedia.org">www.pbslearningmedia.org</a> for "Compound Probability" to see a quick video using playing cards and compound probability.</li><li>• I encouraged students to jot down how many events were occurring and what the outcome was on each problem before solving.</li></ul>

teaching  
ideas





# PROBABILITY



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## unit study guide + assessments



quizzes



editable unit test

Unit: Probability  
Quiz

Name \_\_\_\_\_  
Date \_\_\_\_\_ Pd \_\_\_\_\_

### QUIZ: PROBABILITY

Use the following information to answer questions 1-3.

A laundry basket has 24 t-shirts in it. Four are navy, 12 are red, and the remaining are white. Find the following probabilities of choosing one shirt at random.

1.  $P(\text{red})$

2.  $P(\text{white})$

3.  $P(\text{green})$

Use the table below to answer questions 4-6.

Mrs. Irons places the names of each of the students in the class in a bag. She randomly draws a name, places it back, and repeats the process. The results are shown in the table below.

	#1	#2	#3	#4
NAME	Ella	Jake	Alex	Alex

4. What is the theoretical probability of selecting Ella's name?

5. What is the experimental probability of selecting Jake's name?

6. Students standing in line for lunch were asked to choose a meal. The results are shown below. If one student is picked at random, what is the probability of selecting a student who chose pizza?

MEAL	# OF STUDENTS
Pizza	26
Pasta	8
Fajitas	16

- A. The student who chose pasta.  
B. The student who chose fajitas.  
C. The student who chose pizza.  
D. The student who chose a meal not listed.

Answers

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Unit: Probability  
Review

Name \_\_\_\_\_  
Date \_\_\_\_\_ Pd \_\_\_\_\_

### PROBABILITY UNIT STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure to ask questions if you need more help with a topic.

**I CAN SELECT AND USE SIMULATIONS TO REPRESENT SIMPLE & COMPOUND EVENTS. 7.6B**

- On a true-false question, there is a 50% chance of getting the answer correct.
- The weather report shows that there is a

3. Twenty-five percent of the time you go to school.

**I CAN DETERMINE THE PROBABILITY OF A SIMPLE EVENT.**

5. There are three different colored candies: red, green, and white. The probability of selecting a red candy is  $\frac{2}{5}$ , and the probability of selecting a green candy is  $\frac{1}{4}$ . What is the probability of selecting a white candy?

7. In Mr. Martinez's sixth period class, there are 8 bus riders and 12 walkers. What is the probability of randomly selecting a student who walks to school?

9. The numbers 1-12 are written on a spinner and placed in a bag. What is the probability that a number divisible by 3 is drawn? What number represents its complement?

SEVENTH GRADE CURRICULUM

# PROBABILITY

UNIT EIGHT: ANSWER KEYS

answer keys  
included



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