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 CCSS-ALIGNED UNIT

7th GRADE

A MANEUVERING THE MIDDLE ® RESOURCE

PROBABILITY

7th GRADE

ready-to-go, scaffolded student materials

PROBABILITY UNIT
Table of Contents

PROBABILITY

7th GRADE

a 9 day CCSS-aligned unit
CCSS: 7.SP.5, 7.SP.6, 7.SP.7a-b, 7.SP.8a-c

student friendly + real-world application

scaffolded concepts

higher level analysis

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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 ... second event, the ... |
| DEPENDENT PROBABILITY | • When the outcome ... |

P(A...

1. Read each situation below and determin...

_____ a. Flipping two coins r...
_____ b. Anita reaches into a...
_____ c. You draw a joker fr...
_____ d. You draw a queen f...
_____ e. A three-digit passw...

Use your understanding of dependent pro...

2. Neil goes to the pet shop and selects a ...
for his dog. He chooses one and then ch...
another. What is the probability that Neil s...
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 sele...

b. What is the probability of sele... striped sock?

c. What is the probability of sele... again?

d. What is the probability of sele...

e. What is the probability of sele... another?

5. Mrs. Wilson tells her 4th period class...
class tomorrow. There are 20 desks w...
probability that the first two people to e...
the name of the student who did this c...

| SAMANTHA | COLTO... |
| $\frac{5}{20} \cdot \frac{5}{20} = \frac{1}{16}$ | $\frac{5}{20} \cdot \frac{5}{...}$ |

Summarize today's lesson:
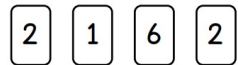

Unit: Probability
Homework 6

Name _____
Date _____ Pd _____

DEPENDENT EVENTS

Use your understanding of probability to answer the questions below.

1. In a board game, students draw a number, do not replace it, and then draw a second number. Determine the probability of each event occurring.

_____ a. An odd number, then drawing a 6

_____ b. A 2, then drawing another 2

_____ c. A number divisible by 3, then drawing a 1

_____ d. A 1, then drawing a 6

_____ e. A prime number, then drawing a composite number

_____ f. A 9, then drawing another 9

_____ g. A 9, then drawing a number divisible by 1

_____ h. An even number, then drawing 1

| 2 | 1 | 6 | 2 |
| 9 | 6 | 6 | 1 |

2. Halston takes two pieces of fruit for a snack. What is the probability that she chooses two pieces of fruit that are not bananas?

FRUIT	AMOUNT
Pear	3
Orange	4
Banana	2

3. Mr. Bauer placed the letters in the word BASKETBALL into a bag. What is the probability of choosing the letter B, not replacing it, and then choosing a vowel?

4. Harmony places the letters in the word HEART into a bag. A letter will be randomly selected and not replaced. Then another letter will be selected. Determine which of the following could represent the probability of Harmony selecting a vowel and then a consonant?

| $\frac{2}{5}$ | 40% | $\frac{1}{10}$ | $\frac{3}{10}$ | $\frac{3}{5}$ | 30% | 25% | $\frac{1}{8}$ |

PROBABILITY

7th GRADE

a 9 day CCSS-aligned unit
CCSS: 7.SP.5, 7.SP.6, 7.SP.7a-b, 7.SP.8a-c

streamline your planning process with unit overviews

✓ key vocabulary

✓ vertical alignment

sample pacing calendar

teaching ideas

PROBABILITY
OVERVIEW

STANDARDS

7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.

7.SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, then explain possible sources of the discrepancy.

7.SP.7a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.

7.SP.7b Develop a probability model by observing frequencies in data generated from a chance process.

7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

7.SP.8a Understand that, just as with simple events, the probability of a compound event is a fraction of outcomes in the sample space for which the compound event occurs.

7.SP.8b Represent for compound events using methods such as organized lists, tables, and tree diagrams. For an event d which composes the eve

7.SP.8c Design and use a

BIG IDEAS

- Probability describes the like
- A ratio of the event occurrin

ESSENTIAL QUESTION

- How can the sample space
- When would an event have a
- How do theoretical and expe

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 Events
Student Handout 5 Homework 5	Student Handout 6 Homework 6

PROBABILITY
OVERVIEW

TOPIC	TEACHING TIPS
Simple Probability	• 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 and 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.
Experimental and Theoretical Probability	• Students need to understand that over time (long-run) the experimental probability will approach the theoretical probability. • Have students roll die or spin spinners if those are available to you in order to test out this concept.
Sample Space	• 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.
Independent and Dependent Events	• Search www.pbslearningmedia.org for "Compound Probability" to see a quick video using playing cards and compound probability.

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PROBABILITY

a 9 day CCSS-aligned unit
CCSS: 7.SP.5, 7.SP.6, 7.SP.7a-b, 7.SP.8a-c

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.

Answers
1. _____
2. _____
3. _____

1. P(red)

2. P(white')

3. P(green)

Use the table below to answer questions

Mrs. Irons places the names of each of
She randomly draws a name, places it b
results are shown in the table below.

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

4. What is the theoretical probability of

5. What is the experimental probability

6. Students standing in line for lunch wer
are shown below. If one student is picke

MEAL	# OF STUDENTS
Pizza	26
Pasta	8
Fajitas	16

A. The student
B. The student
C. The student
D. The student

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 EXPRESS THE LIKELIHOOD OF AN EVENT OCCURRING.

1. Bills are due on the 32nd of the month.	2. It will rain if there is thunder.

3. Scoring a touchdown will result in

I CAN DETERMINE THE PROBABILITY C

5. There are three different colored
red, green, and white. The probabilit
selecting a red candy is $\frac{2}{5}$, and the pr
of selecting a green candy is $\frac{1}{4}$. Wha
probability of selecting a white cand

7. In Mr. Martinez's sixth period clas
are 8 bus riders and 12 walkers. Wh
probability of randomly selecting a st
walks to school?

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

SEVENTH GRADE CURRICULUM

PROBABILITY

UNIT ELEVEN: ANSWER KEYS

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answer keys included →

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