



# Peer to Peer

Modeling

SKILL: 119

NAME: \_\_\_\_\_

Practice Standard: Model with mathematics.

## INTRODUCTION

READ THIS PAGE INDEPENDENTLY AND DO THE WARM-UP WHILE YOU'RE WAITING FOR YOUR PARTNER(S).

### Warm-Up Your Math Mind.

Fill in the missing information in the table.

Ratio		1 : 4
Fraction	1/5	
Decimal		0.25
Percent	20%	

### What is this skill?

This skill is about determining the probability of an outcome.

### What is the learning goal?

Your goal is to model probability.

### Why is this learning goal important?

This learning goal is important because probability is used in everyday life in games, sports, and weather.

Materials needed: pen/pencil, deck of cards

### What mathematical vocabulary is important for this activity?

**Probability:** The possibility of an event occurring

**Outcome:** A possible result

**Likelihood:** The chance that an outcome may occur

***As soon as everyone is ready to go – turn the page and get started!***



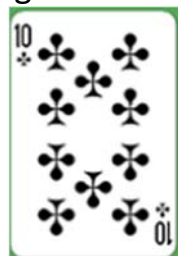
INDEPENDENTLY, READ THE INFORMATION BELOW OR ONE PERSON CAN READ ALOUD.

# Playing with Probability

Xavier is playing with a deck of cards. He has these cards out:



3 of Hearts  
3♥



10 of Clubs  
10♣



Queen of  
Hearts Q♥



King of  
Diamonds  
K♦



7 of  
Spades 7♠



4 of  
Diamonds  
4♦

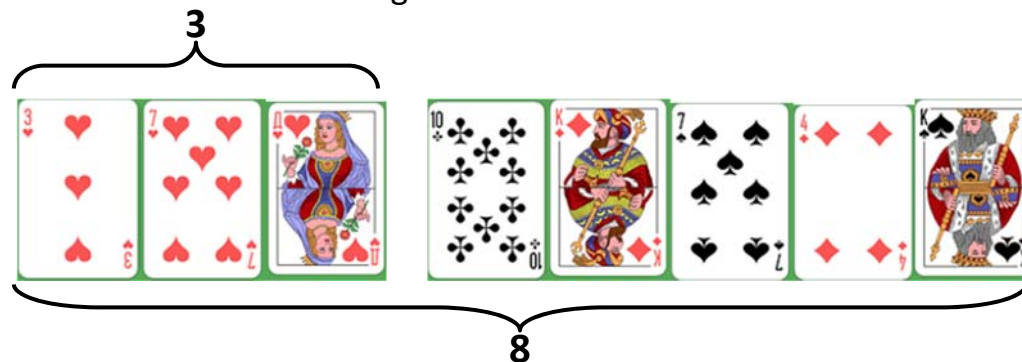


King of  
Spades K♠



7 of Hearts  
7♥

Xavier wants to know the chances of choosing a heart from the cards he has selected.



Since there are 3 hearts out of a total of 8 cards The probability can be written as a fraction **3/8**, with a colon **3:8**, or because Xavier also knows that  $3 \div 8 = 0.375$ , as a percent, **37.5%**.



**TALK ABOUT IT:** What are the different ways Xavier could write the probability of choosing a spade from the cards he has selected?



< 5 minutes

## TIP!

Probability is the number of favorable outcomes to the total number of possible outcomes. (Example: The probability of choosing Hearts is  $3/8$  because there are 3 Hearts out of 8 cards total.

## TIP!

Probability can be written in fraction, ratio, decimal, or percent form:  
 $2/8 = 2:8 = 0.25 = 25\%$

## Quick Check:

☐ I have read the information on this page with my group.

Go on to the next page.





INDEPENDENTLY, SOLVE OR ANSWER THE QUESTIONS.

# Independent Solving

Cards we have chosen:

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Chances of selecting a club ♣?

Fraction \_\_\_\_\_

Colon \_\_\_\_\_

Percent \_\_\_\_\_

Chances of selecting a red card?

Fraction \_\_\_\_\_

Colon \_\_\_\_\_

Percent \_\_\_\_\_

Chances of selecting a face card? (Jack, Queen, King, Ace)

Fraction \_\_\_\_\_

Colon \_\_\_\_\_

Percent \_\_\_\_\_

Chances of selecting a number less than 5?

Fraction \_\_\_\_\_

Colon \_\_\_\_\_

Percent \_\_\_\_\_



10 minutes

**TIP!**

Remember that probability can be written in various equivalent formats (fraction, ratio, decimal, percent).

**TIP!**

Probability can be simplified, so  $\frac{1}{2}$  does not always indicate one favorable outcome out of two possible total outcomes.

**Quick Check**

☐ Each of the spinners I created matches its description of probability.

*Go on to the next page when everyone is ready.*



# Talk About Your Learning

TOGETHER, TALK ABOUT EACH QUESTION. WRITE DOWN THE BEST ANSWER BASED ON YOUR DISCUSSION.

**TALK ABOUT IT:** Is it possible to have a probability of 0? Give an example.

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**TALK ABOUT IT:** If you picked a different number of cards what would you have to do to get the same ratio of clubs?

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**TALK ABOUT IT:** Math Practice Standard: Model with mathematics. If you were choosing from a full deck of 52 cards which suit, diamonds, clubs, hearts, or spades, has the highest chance of being selected. What is the probability how do you know?

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10 minutes

## Quick Check

☐ We discussed each question.

## Skill Check

After your discussions, how well do you NOW understand determining probability of outcomes using different forms?

1 = low  
5 = high

## Quick Check

☐ We wrote our best answers for each question.

Go on to the next page.



INDEPENDENTLY, COMPLETE THE PEER REVIEW.

## Peer Review

Write your partner's name: \_\_\_\_\_  
 (IF YOU WORKED WITH 2 CLASSMATES, CHOOSE ONE.)

What is one thing you *taught* to your partner? Explain.

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What is one thing you *learned* from your partner today? Explain.

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**Rate your classmate for today's task:**

	Low			High
• Math work and thinking	1	2	3	4
• Working together with you	1	2	3	4
• Working independently by him/herself	1	2	3	4

Comments:



5 minutes

**Quick Check**

☐ I completed my peer review.

*Go on to the next page.*



INDEPENDENTLY, SOLVE THE PROBLEM.

## Ending Problem

Reed has a bag of marbles. 1 marble is black. 3 marbles are blue. 5 marbles are yellow. 4 marbles are green. 2 marbles are white. 1 marble is pink. If Reed randomly chooses one marble from the bag, what is the probability that the marble will be white?

- a)  $3/16$
- b)  $1/16$
- c)  $1/8$
- d)  $2/8$

***What is the probability that the marble Shelby chooses is NOT white?***

**REFERENCES:**

<https://pixabay.com/en/atlasnye-deck-playing-cards-game-884206/>



&lt; 5 minutes

**TIP!**

This question is similar to the types of questions you'll see on your skill assessment.

**Clean-Up Check**

☐ I've cleaned up my working space and put all materials away.