LESSON MAKER PRO

Chance in Action

Use trial results to estimate what might happen next.

GRADE 7 · MT.7.SP.6

MT.7.SP.6 "Find the experimental probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency..."

NAME _____ DATE _____

USE WHAT HAPPENED

To find an experimental probability, divide the number of times an event happens by the total number of trials. As you record more trials, the relative frequency can give a steadier estimate of what may happen in future trials.

WORKED EXAMPLE

A spinner lands on blue 11 times in 25 spins. What is the experimental probability of blue?

1. Count 11 blue outcomes and 25 total spins.
2. Divide: 11/25.

Answer: 11/25

PRACTICE 6 problems

1 A student draws a marble from a bag, records its color, and puts it back each time. The marble is blue 6 times in 20 draws. What is the experimental probability of blue?

ANSWER _____

2 The table shows the results of spinning a color wheel. What is the experimental probability of red?

COLOR WHEEL RESULTS

Color	Times
Red	8
Yellow	12
Green	10

ANSWER _____

3 A coin lands on tails 18 times in 40 flips. What is the experimental probability of tails?

ANSWER _____

4 The table shows results from one spinner after 10 spins and after 60 spins. Find the experimental probability of landing on the star after each number of spins.

STAR RESULTS SO FAR

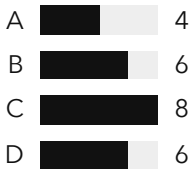
Spins so far	Star results so far
10	3
60	32

ANSWER _____

_____

5 A student draws one letter tile, records it, and puts it back each time. The bars show the results. What is the experimental probability of drawing A or B?

LETTER TILE RESULTS



draws

ANSWER _____

6 One group gets heads 4 times in 10 coin flips. Another gets heads 39 times in 80 flips. Which group's experimental probability would you use to estimate the long-run frequency of heads? Explain why.

ANSWER _____

_____

APPLY IT Show your work

1 Students make bookmarks for a Montana library display of books by Blackfeet and Salish authors. They test a spinner to choose a bookmark color. It lands on orange 18 times in 48 spins. What is the experimental probability of orange? Based on these results, about how many orange outcomes would you predict in 16 more spins?

WORK SPACE

ANSWER _____

2 At a local skate park, a student tests a wheel in a phone game. It lands on a bonus space 9 times in 54 spins. What is the experimental probability of a bonus? Based on these results, about how many bonuses would you predict in 30 more spins?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Students test a spinner in two sets of spins. A student says the experimental probability of landing on blue across both sets is the average of 3/12 and 21/48. Is that correct? Find the experimental probability across all the spins and explain.

SPINNER TEST RESULTS

Set	Blue results	Total spins
First	3	12
Second	21	48

WORK SPACE AND ANSWER

ANSWER KEY

Chance in Action

GRADE 7 · MT.7.SP.6

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A student draws a marble from a bag, records its color, and puts it back each time. The marble is blue 6 times in 20 draws. What is the experimental probability of blue?	**6/20 = 3/10**
2	The table shows the results of spinning a color wheel. What is the experimental probability of red?	**8/30 = 4/15**
3	A coin lands on tails 18 times in 40 flips. What is the experimental probability of tails?	**18/40 = 9/20**
4	The table shows results from one spinner after 10 spins and after 60 spins. Find the experimental probability of landing on the star after each number of spins.	**After 10 spins: 3/10. After 60 spins: 32/60 = 8/15.**
5	A student draws one letter tile, records it, and puts it back each time. The bars show the results. What is the experimental probability of drawing A or B?	**10/24 = 5/12**
6	One group gets heads 4 times in 10 coin flips. Another gets heads 39 times in 80 flips. Which group's experimental probability would you use to estimate the long-run frequency of heads? Explain why.	**The group with 80 flips, 39/80. An estimate based on more trials is usually steadier.**

PART 2 · APPLY IT

1. **18/48 = 3/8; about 6 orange outcomes** Divide 18 by 48 to get 3/8. Then find 3/8 of 16, which is 6.
2. **9/54 = 1/6; about 5 bonuses** Divide 9 by 54 to get 1/6. Then find 1/6 of 30, which is 5.

CHALLENGE

No. Across both sets, blue occurred 3 + 21 = 24 times in 12 + 48 = 60 spins, so the experimental probability is 24/60 = 2/5. The two sets have different numbers of spins, so averaging their probabilities does not give the combined probability.

Accept equivalent fractions. Predictions in the word problems are estimates, not guaranteed outcomes.