

Data Prediction Lab

Use trial results to predict future outcomes.

GRADE 7 • TEKS 7.6.C

7.6.C "make predictions and determine solutions using experimental data for simple and compound events;"

NAME _____

DATE _____

USE THE TRIAL RATE

Experimental probability is observed outcomes divided by total trials. To predict a future amount, multiply the experimental probability by the new number of trials. For a compound event, use the count for that exact combination or event.

WORKED EXAMPLE

A game token lands on a star 14 times in 35 spins. Predict how many star landings in 70 spins.

1. Experimental probability = $14/35 = 2/5$.
2. Multiply the rate by 70.
3. $2/5 \times 70 = 28$.

Answer: 28 star landings

PRACTICE 5 problems

- 1** A coin lands heads 9 times in 15 tosses. Predict the number of heads in 40 tosses.

ANSWER _____

- 2** Two number cubes are rolled 50 times. A sum of 7 occurs 8 times. Predict the number of sums of 7 in 75 rolls.

ANSWER _____

- 3** A bag is sampled 24 times, with replacement. A green chip is picked 6 times. Predict green chips in 60 picks.

ANSWER _____

- 4** Two coins are tossed 30 times. Two heads occur 6 times. Predict two heads in 65 tosses.

ANSWER _____

- 5** A player wins 16 of 32 rounds in a game. Predict wins in 90 rounds.

ANSWER _____

APPLY IT Show your work

- 1** A music app tests its shuffle feature 45 times. A song from your favorite artist plays first 9 times. If the app is used 120 more times, how many times should that artist's song play first?

WORK SPACE

ANSWER _____

- 2** At a robotics club, a randomizer chooses a color and a shape. In 55 tests, it chooses a blue star 11 times. In 100 tests, how many blue stars should you predict?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A game gives one of four results. In 72 trials, blue circle occurred 15 times, blue square occurred 9 times, red circle occurred 18 times, and red square occurred 30 times. Predict how many results will be blue or a circle in 144 trials. Explain which results you counted.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A coin lands heads 9 times in 15 tosses. Predict the number of heads in 40 tosses.	24
2	Two number cubes are rolled 50 times. A sum of 7 occurs 8 times. Predict the number of sums of 7 in 75 rolls.	12
3	A bag is sampled 24 times, with replacement. A green chip is picked 6 times. Predict green chips in 60 picks.	15
4	Two coins are tossed 30 times. Two heads occur 6 times. Predict two heads in 65 tosses.	13
5	A player wins 16 of 32 rounds in a game. Predict wins in 90 rounds.	45

PART 2 • APPLY IT

1. **24 times** Use $9/45 = 1/5$. Then $1/5 \times 120 = 24$.
2. **20 blue stars** Use $11/55 = 1/5$. Then $1/5 \times 100 = 20$.

CHALLENGE

84 results. Count blue circle, blue square, and red circle: $15 + 9 + 18 = 42$. Then $42/72 \times 144 = 84$.

Accept equivalent fraction work and predictions stated with the event name. For the challenge, do not count blue circle twice.