

Chance Checkpoint

Use models and data to make probability predictions.

GRADE 7 • TEKS 7.6

7.6 "Proportionality. The student applies mathematical process standards to use probability and statistics to describe or solve problems involving proportional relationships..."

NAME _____

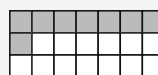
DATE _____

PROBABILITY PLANS

For equally likely outcomes, probability is favorable outcomes divided by total outcomes. A sample space lists every possible outcome. Experimental probability uses results from trials, while theoretical probability uses the model.

WORKED EXAMPLE

At a game booth, a visitor randomly receives one prize-board square. Shaded squares earn a pin. What is the theoretical probability of earning a pin?

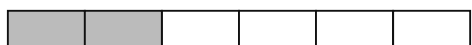


1. Count 21 equal squares.
2. Count 8 shaded squares.
3. Write favorable/total: 8/21.

Answer: 8/21

PRACTICE 4 problems

- 1** A reading app randomly reveals one equal coupon card from the figure. A shaded card gives a bonus bookmark. What is the probability of a bonus bookmark?



ANSWER _____

- 2** A school store tablet randomly shows one equal coupon tile from the figure. A shaded tile gives a free sticker. What is the probability that a tile does not give a sticker?



ANSWER _____

- 3** An esports club tested a random loot box 25 times. It gave a rare item 9 times. Use experimental probability to predict the number of rare items in 100 openings.

ANSWER _____

- 4** A music app randomly picks 1 of 5 genres and 1 of 2 moods. Every pair is equally likely. What is the probability it picks hip-hop and calm?

ANSWER _____

APPLY IT Show your work

- 1** The graph shows club choices from a random sample of students. If the school has 300 students, estimate how many would choose Music Club.

SAMPLE CLUB CHOICES



ANSWER _____

- 2** For a fundraiser, students ran a game 60 times in a trial. Players won 15 times. Use experimental probability to predict wins in 180 plays.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A robot randomly chooses a paint color, red or blue, then a stamp, star or dot. List the sample space. Find the theoretical probability of blue dot. In 40 runs, blue dot appeared 9 times. Use theoretical probability to predict blue dots in 400 runs, and explain why the trial result may differ.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A reading app randomly reveals one equal coupon card from the figure. A shaded card gives a bonus bookmark. What is the probability of a bonus bookmark?	1/3
2	A school store tablet randomly shows one equal coupon tile from the figure. A shaded tile gives a free sticker. What is the probability that a tile does not give a sticker?	7/9
3	An esports club tested a random loot box 25 times. It gave a rare item 9 times. Use experimental probability to predict the number of rare items in 100 openings.	36
4	A music app randomly picks 1 of 5 genres and 1 of 2 moods. Every pair is equally likely. What is the probability it picks hip-hop and calm?	1/10

PART 2 • APPLY IT

- 66 students** The sample shows 11 out of 50 students chose Music Club. Multiply $11/50$ by 300 to get 66.
- 45 wins** The experimental probability is $15/60$, or $1/4$. One fourth of 180 is 45.

CHALLENGE

Sample space: red-star, red-dot, blue-star, blue-dot. Theoretical probability: $1/4$. Prediction: 100 blue dots. The experimental probability is $9/40$, which can differ because random trials do not always match the theoretical probability exactly.

Accept equivalent unsimplified fractions where appropriate, including $2/6$ for problem 1 and $14/18$ for problem 2. For the challenge, accept any complete sample-space list and an explanation that random variation causes experimental results to differ from theoretical probability.