

Chance Check

Build and use probability models from outcomes and trials.

GRADE 7 • 7.SP.C

CCSS.Math.Content.7.SP.C "Investigate chance processes and develop, use, and evaluate probability models."

NAME _____

DATE _____

MODEL THE CHANCE

For equally likely outcomes, probability = favorable outcomes / total outcomes. You can also use experimental results to estimate a probability when you have data from repeated trials. For independent events that both must happen, multiply their probabilities.

WORKED EXAMPLE

A jar holds 5 blue beads and 8 gold beads. What is the probability of choosing a blue bead at random?

1. Count all beads: $5 + 8 = 13$.
2. Count favorable outcomes: 5 blue beads.
3. Write favorable/total: $5/13$.

Answer: $5/13$

PRACTICE 6 problems

1 A fair coin is flipped once. What is $P(\text{tails})$?

ANSWER _____

2 A fair number cube has faces numbered 1 through 6. What is $P(\text{even})$?

ANSWER _____

3 A bag has 2 red counters, 1 yellow counter, and 3 green counters. What is $P(\text{not red})$?

ANSWER _____

4 A spinner is spun 21 times and lands on blue 6 times. Use the results to estimate $P(\text{blue})$ on the next spin.

ANSWER _____

5 A spinner has 4 equal sections. Two sections are orange, one is white, and one is black. What is $P(\text{not orange})$?

ANSWER _____

6 You flip a fair coin and spin a spinner with 3 equal sections. Exactly 1 section is green. What is $P(\text{heads and green})$?

ANSWER _____

APPLY IT Show your work

- 1** A music app randomly selects 1 of 10 warm-up songs, and 3 of the songs are favorites. The app says each song is equally likely. What is the probability that the next song is a favorite? If you use the app 30 times, how many favorite songs should you expect?

WORK SPACE

ANSWER _____

- 2** At free-throw practice, Jordan makes 18 of 24 shots. Use this experimental probability model to predict how many of the next 16 shots Jordan will make.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A bag contains 3 red tokens, 4 blue tokens, and 2 yellow tokens. You draw a token, replace it, and draw again. What is the probability of drawing exactly one red token? Explain by describing the color orders that work.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A fair coin is flipped once. What is P(tails)?	1/2
2	A fair number cube has faces numbered 1 through 6. What is P(even)?	1/2
3	A bag has 2 red counters, 1 yellow counter, and 3 green counters. What is P(not red)?	2/3
4	A spinner is spun 21 times and lands on blue 6 times. Use the results to estimate P(blue) on the next spin.	2/7
5	A spinner has 4 equal sections. Two sections are orange, one is white, and one is black. What is P(not orange)?	1/2
6	You flip a fair coin and spin a spinner with 3 equal sections. Exactly 1 section is green. What is P(heads and green)?	1/6

PART 2 • APPLY IT

1. **P(favorite) = 3/10; expected favorite selections = 9.** Use 3 favorable songs out of 10 total songs. Multiply 30 by 3/10 to get 9 expected selections.
2. **12 shots** The experimental probability of a make is $18/24 = 3/4$. Multiply 16 by 3/4 to predict 12 makes.

CHALLENGE

4/9. The working orders are red then not red, or not red then red. Each order has probability $1/3 \times 2/3$, so the total is $2/9 + 2/9 = 4/9$.

Accept equivalent fractions, such as 3/6 for problem 2 and 2/4 for problem 5. In the word problems, accept the stated expected values as predictions, not guarantees.