

Chance Check

Count outcomes and name the likelihood.

GRADE 4 • 4.PS.2

4.PS.2 "The student will model and determine the probability of an outcome of a simple event. Describe probability as the degree of likelihood of an outcome occurring using terms such as impossible, unlikely, equally likely, likely, and certain..."

NAME _____

DATE _____

PROBABILITY STEPS

Count every equally possible outcome. Probability is favorable outcomes / total outcomes. A fraction near 0 is unlikely, $\frac{1}{2}$ is equally likely, and a fraction near 1 is likely. Zero is impossible, and 1 is certain.

WORKED EXAMPLE

A spinner has 8 equal sections. Three sections have stars and 5 sections have circles. What is $P(\text{star})$?

1. Count 8 total sections.
2. Count 3 star sections.
3. Write $\frac{3}{8}$. Fewer than half the sections have stars.

Answer: $\frac{3}{8}$, unlikely

PRACTICE 5 problems

- 1** A bag holds 4 red tiles and 2 blue tiles. What is $P(\text{red})$? Name its likelihood.

ANSWER _____

- 2** A spinner has 4 equal sections. Two are orange and two are purple. What is $P(\text{orange})$? Name its likelihood.

ANSWER _____

- 3** A spinner has 7 equal sections. Six show suns and 1 shows a moon. What is $P(\text{moon})$? Name its likelihood.

ANSWER _____

- 4** A spinner has 4 equal sections labeled A, B, C, and D. List all possible outcomes. Is landing on a letter certain?

ANSWER _____

- 5** A bag has 9 cards: 7 cat cards and 2 dog cards. What is $P(\text{choosing a fish card})$? Name its likelihood.

ANSWER _____

APPLY IT Show your work

- 1** At the library, a prize wheel has 12 equal spaces: 7 comic bookmarks, 4 pencils, and 1 sticker. What is $P(\text{comic bookmark})$? Name its likelihood.

WORK SPACE

ANSWER _____

- 2** A classroom playlist has 10 song cards. Six are dance songs and 4 are calm songs. One card is chosen without looking. What is $P(\text{dance song})$? Name its likelihood.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Design a prize spinner with 24 equal spaces so $P(\text{win}) = 1/4$. State the number of win spaces and nonwin spaces. Name the likelihood of winning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A bag holds 4 red tiles and 2 blue tiles. What is $P(\text{red})$? Name its likelihood.	4/6, likely
2	A spinner has 4 equal sections. Two are orange and two are purple. What is $P(\text{orange})$? Name its likelihood.	2/4, equally likely
3	A spinner has 7 equal sections. Six show suns and 1 shows a moon. What is $P(\text{moon})$? Name its likelihood.	1/7, unlikely
4	A spinner has 4 equal sections labeled A, B, C, and D. List all possible outcomes. Is landing on a letter certain?	A, B, C, D; certain
5	A bag has 9 cards: 7 cat cards and 2 dog cards. What is $P(\text{choosing a fish card})$? Name its likelihood.	0, impossible

PART 2 • APPLY IT

- 7/12, likely** There are 12 total spaces and 7 comic bookmark spaces. Since more than half the spaces are comic bookmarks, the event is likely.
- 6/10, likely** There are 10 total cards and 6 dance-song cards. Since more than half are dance songs, choosing one is likely.

CHALLENGE**6 win spaces and 18 nonwin spaces; unlikely**

Accept equivalent fractions that show the same probability. For the challenge, accept any clear description of a 24-space spinner with 6 win spaces and 18 nonwin spaces.