LESSON MAKER PRO

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(tails)?

ANSWER _____

2 A fair number cube has faces numbered 1 through 6. What is P(even)?

ANSWER _____

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

ANSWER _____

4 A spinner is spun 21 times and lands on blue 6 times. Use the results to estimate P(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(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(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

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.

WORK SPACE AND ANSWER

ANSWER KEY

Chance Check

GRADE 7 · 7.SP.C

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

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.