LESSON MAKER PRO

Chance Check

Find the probability of each event.

GRADE 4 · 4.PS.2.d

4.PS.2.d "Determine the likelihood of an event occurring and relate it to its whole number or fractional representation (e.g., impossible or zero; equally likely; certain or one)."

NAME _____ DATE _____

THE BIG IDEA

To find probability, write the number of favorable outcomes over the total number of equally likely outcomes. Simplify the fraction when you can. An event that cannot happen has probability 0, an event that must happen has probability 1, and equally likely events have the same probability.

WORKED EXAMPLE

A box holds 7 star cards and 9 heart cards. What is P(star card)? Write the fraction in simplest form.

1. Count star cards: 7 favorable outcomes.
2. Count all cards: 7 + 9 = 16 total outcomes.
3. Write the probability: 7/16. It is already in simplest form.

Answer: 7/16

PRACTICE 6 problems

1 A pouch has 3 red pencils and 5 blue pencils. One pencil is chosen without looking. What is P(red pencil)? Write the fraction in simplest form.

ANSWER _____

2 A spinner has 8 equal sections. Two sections show a robot, and 6 sections show a rocket. What is P(robot)? Write the fraction in simplest form.

ANSWER _____

3 A jar has 11 purple beads. What is P(purple bead)? Write 0 or 1 and a likelihood word.

ANSWER _____

4 A game bag has 5 green chips and 6 blue chips. What is P(yellow chip)? Write 0 or 1 and a likelihood word.

ANSWER _____

5 A spinner has 8 equal sections. Three show a bike, three show a skateboard, and two show skates. Are bike and skateboard equally likely? Give each probability in simplest form.

ANSWER _____

6 Number cards are labeled 1 through 6. One card is chosen at random. What is P(even number)? Write the fraction in simplest form.

ANSWER _____

APPLY IT Show your work

1 At a coding club, a prize wheel has 12 equal spaces: 5 game-controller spaces, 4 robot spaces, and 3 art-tablet spaces. Ava spins once. What is P(game-controller space)? Write the fraction in simplest form. Is it more or less likely than 1/2?

WORK SPACE

ANSWER _____

2 For a school garden video, students choose one seedling at random from 15 seedlings: 6 tomato seedlings, 4 carrot seedlings, and 5 bean seedlings. What is P(tomato or bean seedling)? Write the fraction in simplest form. Is it more or less likely than 1/2?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A game designer has 24 equal prize cards: 9 gold, 6 silver, 5 bronze, and 4 purple. One card is chosen at random. What is P(silver or purple)? Write the fraction in simplest form. Is this probability closer to 0, 1/2, or 1? Explain.

WORK SPACE AND ANSWER

ANSWER KEY

Chance Check

GRADE 4 · 4.PS.2.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A pouch has 3 red pencils and 5 blue pencils. One pencil is chosen without looking. What is P(red pencil)? Write the fraction in simplest form.	**3/8**
2	A spinner has 8 equal sections. Two sections show a robot, and 6 sections show a rocket. What is P(robot)? Write the fraction in simplest form.	**1/4**
3	A jar has 11 purple beads. What is P(purple bead)? Write 0 or 1 and a likelihood word.	**1, certain**
4	A game bag has 5 green chips and 6 blue chips. What is P(yellow chip)? Write 0 or 1 and a likelihood word.	**0, impossible**
5	A spinner has 8 equal sections. Three show a bike, three show a skateboard, and two show skates. Are bike and skateboard equally likely? Give each probability in simplest form.	**Yes, each is 3/8.**
6	Number cards are labeled 1 through 6. One card is chosen at random. What is P(even number)? Write the fraction in simplest form.	**1/2**

PART 2 · APPLY IT

1. **5/12, less likely than 1/2** There are 5 game-controller spaces out of 12 total spaces, so the probability is 5/12. Since 1/2 equals 6/12, 5/12 is less likely than 1/2.
2. **11/15, more likely than 1/2** There are 6 + 5 = 11 tomato or bean seedlings out of 15 total seedlings, so the probability is 11/15. Since 11 is more than half of 15, the event is more likely than 1/2.

CHALLENGE

5/12; it is closer to 1/2 because 5/12 is only 1/12 less than 1/2.

Require fractions in simplest form for every item that asks for a fraction. For verbal responses, accept certain with 1, impossible with 0, and yes or equally likely for the bike and skateboard item, as long as each probability is 3/8.