LESSON MAKER PRO

Chance in Action

Find probabilities and compare them with results.

GRADE 6 · 6.D.2

6.D.2 "Use probability to model and solve mathematical problems; represent probabilities using fractions and decimals. Represent possible outcomes using a probability continuum from impossible to certain..."

NAME _____ DATE _____

FIND THE CHANCE

For equally likely outcomes, probability is the number of outcomes you want divided by the total number of outcomes. You can write that probability as a fraction or a decimal.

WORKED EXAMPLE

A box holds the fruit shown. What is the probability of picking a pear? Write a fraction and a decimal.

FRUIT IN THE BOX

Fruit	Count
Pears	3
Plums	5

1. Total fruit: 3 + 5 = 8.
2. Pears: 3, so the fraction is 3/8.
3. Divide: 3 ÷ 8 = 0.375.

Answer: 3/8 or 0.375

PRACTICE 4 problems

1 A bag has 4 yellow beads and 6 blue beads. Write the probability of picking yellow as a fraction and a decimal.

ANSWER _____

2 Of 16 cards, 12 are marked. What is the probability of picking a marked card? Write a decimal.

ANSWER _____

3 The letters A, B, C, and D are equally likely to be picked. What is the probability of picking C or D? Write a fraction.

ANSWER _____

4 A box has 14 silver cards and 6 gold cards. What is the probability of picking silver? Write a decimal.

ANSWER _____

APPLY IT Show your work

1 At the school fair, a wheel has 20 equal sections. The table shows their prizes. What is the probability of winning art supplies? Write a fraction and a decimal.

WHEEL PRIZES

Prize	Sections
Music	4
Art supplies	6
Sports	10

ANSWER _____

2 A game is designed so the chance of winning is 1/4, or 0.25. The table shows results from 40 plays. What fraction and decimal of the plays were wins? Was that greater or less than the designed chance?

GAME RESULTS

Result	Plays
Win	14
Loss	26

ANSWER _____

CHALLENGE One step up

A game pairs one color, red, blue, gold, or green, with one icon, star or moon. Each pair is equally likely. List every possible pair. Then find the probability of getting gold or a star, as a fraction and a decimal.

WORK SPACE AND ANSWER

ANSWER KEY

Chance in Action

GRADE 6 · 6.D.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A bag has 4 yellow beads and 6 blue beads. Write the probability of picking yellow as a fraction and a decimal.	**4/10 or 0.4**
2	Of 16 cards, 12 are marked. What is the probability of picking a marked card? Write a decimal.	**0.75**
3	The letters A, B, C, and D are equally likely to be picked. What is the probability of picking C or D? Write a fraction.	**2/4 or 1/2**
4	A box has 14 silver cards and 6 gold cards. What is the probability of picking silver? Write a decimal.	**0.7**

PART 2 · APPLY IT

1. **6/20 or 0.3** Six of the 20 equal sections give art supplies. Divide 6 by 20 to get 0.3.
2. **14/40 or 0.35; greater than 0.25** The relative frequency of wins is 14/40 = 0.35. This is greater than the designed probability of 0.25.

CHALLENGE

The pairs are red-star, red-moon, blue-star, blue-moon, gold-star, gold-moon, green-star, and green-moon. Five pairs have gold or a star, so the probability is 5/8 or 0.625.

Accept equivalent fractions. In the game-results problem, the observed frequency can differ from the designed probability.