LESSON MAKER PRO

Chance Check

Find probabilities and name how likely events are.

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 IN ACTION

Probability is favorable outcomes divided by total equal outcomes. A probability of 0 is impossible, 1 is certain, and 1/2 is equally likely. Values closer to 1 are likely, and values closer to 0 are unlikely.

WORKED EXAMPLE

A bag holds 8 tiles. 5 tiles are yellow. What is the probability of choosing yellow? Name the likelihood.



1. Count all tiles: 8.
2. Count yellow tiles: 5.
3. Write favorable over total: 5/8.
4. Since 5/8 is more than 1/2, yellow is likely.

Answer: 5/8, likely

PRACTICE 4 problems

1 Flip a fair coin. What is the probability of heads? Name the likelihood.

ANSWER _____

2 Roll a standard number cube. What is the probability of rolling a 7? Name the likelihood.

ANSWER _____

3 A box has 4 blue counters and 2 red counters. What is the probability of choosing blue? Name the likelihood.

ANSWER _____

4 Cards are labeled 10, 12, 14, and 16. List the possible outcomes. Then find the probability of choosing a number greater than 11.

ANSWER _____

APPLY IT Show your work

1 The school store has prize slips. One slip is picked without looking. What is the probability of picking a teal slip? Name the likelihood.

PRIZE SLIPS

Color	Number of slips
Purple	6
Orange	4
Teal	2

ANSWER _____

2 At an arcade, a prize wheel has 10 equal spaces. 9 spaces say "tokens" and 1 space says "bonus round." What is the probability of landing on bonus round? Name the likelihood.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Create a card-bag model with 12 cards so the probability of choosing a star card is 3/4. State how many star cards and how many nonstar cards are in your model. Name the likelihood of choosing a star.

WORK SPACE AND ANSWER

ANSWER KEY

Chance Check

GRADE 4 · 4.PS.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Flip a fair coin. What is the probability of heads? Name the likelihood.	**1/2, equally likely**
2	Roll a standard number cube. What is the probability of rolling a 7? Name the likelihood.	**0, impossible**
3	A box has 4 blue counters and 2 red counters. What is the probability of choosing blue? Name the likelihood.	**4/6 = 2/3, likely**
4	Cards are labeled 10, 12, 14, and 16. List the possible outcomes. Then find the probability of choosing a number greater than 11.	**Possible outcomes: 10, 12, 14, 16; 3/4**

PART 2 · APPLY IT

1. **2/12 = 1/6, unlikely** There are 12 slips altogether and 2 are teal. Write 2/12, simplify to 1/6, and name it unlikely.
2. **1/10, unlikely** There is 1 bonus-round space out of 10 equal spaces. Since 1/10 is close to 0, it is unlikely.

CHALLENGE

One model: 9 star cards and 3 nonstar cards. P(star) = 9/12 = 3/4, likely.

Accept equivalent fractions, such as 4/6 for 2/3 and 2/12 for 1/6. For the challenge, accept any model with 9 of 12 cards marked as stars and 3 marked as nonstars.