LESSON MAKER PRO

# Chance on a Scale

*Show probability and describe how likely an event is.*

**GRADE 7 · 7.PR.6.1**

**7.PR.6.1** "Represent the probability of a chance event as a number between 0 and 1 that expresses the likelihood of the event occurring. Describe that a probability near 0 indicates an unlikely event..."

NAME _____ DATE _____

## PROBABILITY CLUES

Probability = favorable outcomes / total equally likely outcomes. A probability near 0 is unlikely, a probability around 1/2 is neither unlikely nor likely, and a probability near 1 is likely.

## WORKED EXAMPLE

A jar has 3 purple beads and 8 white beads. What is the probability of choosing a purple bead?

1. Favorable outcomes: 3 purple beads.
2. Total outcomes: 3 + 8 = 11 beads.
3. Probability = 3/11.

**Answer: 3/11, which is unlikely**

## PRACTICE 6 problems

**1** A jar has 4 red beads and 6 yellow beads. Find P(red). Then describe the likelihood.

**ANSWER** _____

**2** A prize box has 14 coupons. Thirteen coupons give a free topping, and one coupon does not. Find P(free topping). Then describe the likelihood.

**ANSWER** _____

**3** A spinner has 16 equal sections. Four sections have a star. Find P(star). Then describe the likelihood.

**ANSWER** _____

**4** An event has a probability of 0.48. Describe the likelihood of the event.

**ANSWER** _____

**5** An event has a probability of 0.96. Describe the likelihood of the event.

**ANSWER** _____

**6** A spinner has 6 equal sections. Five sections say WIN. Find P(WIN). Then describe the likelihood.

**ANSWER** _____

## APPLY IT Show your work

**1** The art club receives 20 poster designs for a student vote. Nine designs use digital art. One design is chosen at random for a display. What is the probability that the chosen design uses digital art? Describe the likelihood.

WORK SPACE

**ANSWER** _____

**2** A gaming event has 25 reward codes. Twenty-one codes unlock a bonus game item, and the other codes unlock a wallpaper. One code is chosen at random. What is the probability of unlocking a bonus game item? Describe the likelihood.

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

At a game tournament, a prize wheel has 20 equal sections. Eighteen sections award coins, and 2 sections award stickers. Sam says that winning coins is 9 times as likely as winning stickers. Is Sam correct? Find both probabilities and explain.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Chance on a Scale

**GRADE 7 · 7.PR.6.1**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | A jar has 4 red beads and 6 yellow beads. Find P(red). Then describe the likelihood. | **2/5, neither unlikely nor likely** |
| 2 | A prize box has 14 coupons. Thirteen coupons give a free topping, and one coupon does not. Find P(free topping). Then describe the likelihood. | **13/14, likely** |
| 3 | A spinner has 16 equal sections. Four sections have a star. Find P(star). Then describe the likelihood. | **1/4, unlikely** |
| 4 | An event has a probability of 0.48. Describe the likelihood of the event. | **Neither unlikely nor likely** |
| 5 | An event has a probability of 0.96. Describe the likelihood of the event. | **Likely** |
| 6 | A spinner has 6 equal sections. Five sections say WIN. Find P(WIN). Then describe the likelihood. | **5/6, likely** |

## PART 2 · APPLY IT

1. **9/20, neither unlikely nor likely** There are 9 favorable designs out of 20 total designs, so the probability is 9/20. This is close to 1/2, so it is neither unlikely nor likely.
2. **21/25, likely** There are 21 bonus-item codes out of 25 total codes, so the probability is 21/25. This value is near 1, so the event is likely.

## CHALLENGE

**Yes. P(coins) = 18/20 = 9/10, and P(stickers) = 2/20 = 1/10. Since 9/10 is 9 times 1/10, winning coins is 9 times as likely. Coins are likely, and stickers are unlikely.**

Accept equivalent fractions, such as 4/10 for 2/5 and 4/16 for 1/4. Accept accurate likelihood language that matches the probability, including “about half” for neither unlikely nor likely.