LESSON MAKER PRO

Chance Builders

Build models and stories that match a probability.

GRADE 4 · 4.PS.2.e

4.PS.2.e "Create a model or contextual problem to represent a given probability."

NAME _____ DATE _____

MATCH THE PARTS

A probability shows favorable outcomes over all equal-likely outcomes. To build a model, make the total match the denominator and make the favorable part match the numerator. You can use equal spinner sections, cards, or objects in a bag.

WORKED EXAMPLE

Create a bag model for P(drawing a blue tile) = 7/9.

1. Use 9 tiles so the total matches the denominator.
2. Make 7 tiles blue so the favorable part matches the numerator.
3. Make the remaining tiles a different color, such as yellow.

Answer: A bag with 7 blue tiles and 2 yellow tiles.

PRACTICE 6 problems

1 Make a spinner model for P(landing on a heart) = 1/4. Describe the equal sections.

ANSWER _____

2 Make a bag model for P(drawing a green counter) = 1/5.

ANSWER _____

3 Make a card model for P(drawing a music card) = 3/6.

ANSWER _____

4 Write a snack-card situation to show P(choosing an apple card) = 4/8.

ANSWER _____

_____

5 Make a spinner model for P(landing on red) = 5/10. Describe the equal sections.

ANSWER _____

6 Create a prize-coupon bag for P(drawing a comic coupon) = 6/12.

ANSWER _____

APPLY IT Show your work

1 The student council is making a prize wheel for a reading bingo event. They want P(landing on a bookmark prize) = 1/6. Describe a wheel model that works.

WORK SPACE

ANSWER _____

2 A video game club uses a mystery card bag. They want P(drawing a dragon card) = 4/10. Create a card-bag model and name the other kind of card.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Create a pair of different bag models that show P(drawing a blue counter) = 3/6. One model must have 6 counters. The other model must have a different total that is fewer than 13 counters. Explain why both models work.

WORK SPACE AND ANSWER

ANSWER KEY

Chance Builders

GRADE 4 · 4.PS.2.e

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Make a spinner model for P(landing on a heart) = 1/4. Describe the equal sections.	**A spinner with 4 equal sections, 1 heart section and 3 star sections.**
2	Make a bag model for P(drawing a green counter) = 1/5.	**A bag with 5 counters, 1 green counter and 4 yellow counters.**
3	Make a card model for P(drawing a music card) = 3/6.	**A set of 6 cards, 3 music cards and 3 art cards.**
4	Write a snack-card situation to show P(choosing an apple card) = 4/8.	**A box has 8 cards. Four cards say apple, and 4 cards say banana. A card is chosen at random.**
5	Make a spinner model for P(landing on red) = 5/10. Describe the equal sections.	**A spinner with 10 equal sections, 5 red sections and 5 blue sections.**
6	Create a prize-coupon bag for P(drawing a comic coupon) = 6/12.	**A bag has 12 coupons, 6 comic coupons and 6 puzzle coupons.**

PART 2 · APPLY IT

1. **A wheel with 6 equal sections, 1 bookmark section and 5 pencil sections.** Use 6 equal sections because the denominator is 6. Make 1 section a bookmark prize because the numerator is 1.
2. **A bag with 10 cards, 4 dragon cards and 6 robot cards.** The bag needs 10 equally likely cards in all. Four of them must be dragon cards, and the other 6 can be robot cards.

CHALLENGE

Model A has 6 counters, 3 blue and 3 red. Model B has 8 counters, 4 blue and 4 red. Both models give a 1/2 chance of drawing blue, and 3/6 is equal to 1/2.

Accept any model or context with equally likely outcomes that has the stated favorable outcomes and total outcomes. Accept equivalent probability forms when the model still represents the given chance.