LESSON MAKER PRO

Choice Combo Quest

Model outcomes, then find the chance.

GRADE 5 · 5.PS.3

5.PS.3 "The student will determine the probability of an outcome by constructing a model of a sample space and using the Fundamental (Basic) Counting Principle..."

NAME _____ DATE _____

COUNT THE CHOICES

Multiply the number of choices at each step to find the total number of equally likely outcomes. To find probability, put the favorable outcomes over the total outcomes.

WORKED EXAMPLE

A game has 5 avatar cards and 4 scene cards. How many avatar-scene pairs are possible? What is the probability of one particular pair?

1. There are 5 avatar choices.
2. Each avatar has 4 scene choices.
3. 5 × 4 = 20 total pairs.
4. One particular pair is 1 favorable outcome.

Answer: 20 pairs; probability = 1/20

PRACTICE 5 problems

1 Flip a coin and spin a spinner with red, blue, and green sections. List the sample space. How many outcomes are there?

ANSWER _____

2 A lunch has 3 sandwich choices and 3 fruit choices. Use the counting principle to find the number of lunches.

ANSWER _____

3 Choose a number card, 1, 2, or 3, and a letter card, A or B. What is the probability that the number is 2?

ANSWER _____

4 A toy robot has 2 antenna styles, 2 eye colors, and 2 wheel types. How many robot designs are possible?

ANSWER _____

5 Spin a spinner labeled A, B, C, D, E, F, then flip a coin. What is the probability of C and tails?

ANSWER _____

APPLY IT Show your work

1 At an esports club, a player chooses 3 badge designs and 2 banner colors. A prize app randomly chooses one badge-banner pair. What is the probability it chooses the star badge with the blue banner?

WORK SPACE

ANSWER _____

2 For art club, Maya chooses 2 drinks, 3 snacks, and 2 fruit cups. A pack is chosen at random from all possible packs. What is the probability of one exact drink-snack-fruit pack?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A library reading game lets you choose 3 book genres, 2 bookmark colors, 2 reading spots, and 2 reading times. Make a model. How many choices are possible? What is the probability of choosing a green bookmark? Explain.

WORK SPACE AND ANSWER

ANSWER KEY

Choice Combo Quest

GRADE 5 · 5.PS.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Flip a coin and spin a spinner with red, blue, and green sections. List the sample space. How many outcomes are there?	**H-red, H-blue, H-green, T-red, T-blue, T-green; 6 outcomes**
2	A lunch has 3 sandwich choices and 3 fruit choices. Use the counting principle to find the number of lunches.	**3 × 3 = 9 lunches**
3	Choose a number card, 1, 2, or 3, and a letter card, A or B. What is the probability that the number is 2?	**2 favorable outcomes out of 6, or 1/3**
4	A toy robot has 2 antenna styles, 2 eye colors, and 2 wheel types. How many robot designs are possible?	**2 × 2 × 2 = 8 designs**
5	Spin a spinner labeled A, B, C, D, E, F, then flip a coin. What is the probability of C and tails?	**1/12**

PART 2 · APPLY IT

1. **1/6** There are 3 × 2 = 6 possible badge-banner pairs. Only the star-blue pair is favorable.
2. **1/12** There are 2 × 3 × 2 = 12 possible packs. One exact pack is 1 of the 12 outcomes.

CHALLENGE

24 choices; probability = 1/2.

Accept any complete sample-space list, chart, or tree with all outcomes shown once. Accept equivalent probability forms, such as 2/6 for 1/3 and 12/24 for 1/2.