LESSON MAKER PRO

Choice Combo Count

Use multiplication to count possible outcomes.

GRADE 5 · 5.PS.3.b

5.PS.3.b "Determine the number of possible outcomes by using the Fundamental (Basic) Counting Principle."

NAME _____ DATE _____

COUNT EVERY COMBINATION

When you make one choice and then another choice, multiply the number of choices in each group. This tells you how many different combinations are possible.

WORKED EXAMPLE

A robot toy can have 3 head styles and 7 antenna styles. How many different robot toys can be made?

1. There are 3 choices for the head.
2. For each head, there are 7 choices for the antenna.
3. Multiply: 3 x 7 = 21.

Answer: 21 different robot toys

PRACTICE 6 problems

1 You can choose from 4 shirts and 5 pairs of shorts. How many different outfits can you make?

ANSWER _____

2 A costume box has 6 hats and 2 scarves. How many hat and scarf combinations are possible?

ANSWER _____

3 A game has 8 character tokens and 2 game boards. How many ways can you choose 1 token and 1 board?

ANSWER _____

4 A museum has 9 exhibit rooms and 4 tour start times. How many room and start-time choices are possible?

ANSWER _____

5 You can choose 1 book genre from 5 choices and 1 bookmark color from 6 choices. How many choices are possible?

ANSWER _____

6 A profile maker has 10 avatar choices and 6 background choices. How many different profiles can you make?

ANSWER _____

APPLY IT Show your work

1 You are designing a water bottle for a school event. You can choose 4 bottle colors, 5 lid colors, and 2 sticker styles. How many different water bottle designs can you make?

WORK SPACE

ANSWER _____

2 In a racing game, you choose 6 characters, 4 vehicles, and 5 tracks. How many different race setups can you make?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A club makes badges by choosing 5 shapes, 4 colors, 2 border styles, and 6 letters. How many different badges can the club make? Show a multiplication sentence.

WORK SPACE AND ANSWER

ANSWER KEY

Choice Combo Count

GRADE 5 · 5.PS.3.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	You can choose from 4 shirts and 5 pairs of shorts. How many different outfits can you make?	**20 outfits**
2	A costume box has 6 hats and 2 scarves. How many hat and scarf combinations are possible?	**12 combinations**
3	A game has 8 character tokens and 2 game boards. How many ways can you choose 1 token and 1 board?	**16 ways**
4	A museum has 9 exhibit rooms and 4 tour start times. How many room and start-time choices are possible?	**36 choices**
5	You can choose 1 book genre from 5 choices and 1 bookmark color from 6 choices. How many choices are possible?	**30 choices**
6	A profile maker has 10 avatar choices and 6 background choices. How many different profiles can you make?	**60 profiles**

PART 2 · APPLY IT

1. **40 different water bottle designs** Multiply the choices for each part of the design: 4 x 5 x 2 = 40.
2. **120 different race setups** Multiply the choices for character, vehicle, and track: 6 x 4 x 5 = 120.

CHALLENGE

5 x 4 x 2 x 6 = 240 different badges

Accept correct multiplication sentences and correct totals. Students may multiply the factors in any order.