

Lesson 5 Multi-Step Problem Solving

Multi-Step Example

Zaku is going to buy a fresh fruit smoothie and a personal pizza for lunch. For the smoothie, he can choose one of five different fruits, one of six different types of juice, and either milk or ice cream. For Zaku's pizza, he can choose one of three crusts and one of four toppings. How many different pizza and smoothie choices does Zaku have for his lunch? **7.SP.8, MP 2**

- (A) 12 (B) 60 (C) 72 (D) 720

Use a problem-solving model to solve this problem.

1 Understand

Read the problem. Circle the information you know.
Underline what the problem is asking you to find.

Read to Succeed!



When reading the problem, identify different categories and how many choices are in each category.

2 Plan

What will you need to do to solve the problem? Write your plan in steps.

- Step 1** Identify how many possible options there are for each category.
- Step 2** Calculate the total number of _____.
- Step 3** _____ the total number of pizza and smoothie combinations.

3 Solve

Use your plan to solve the problem. Show your steps.

Possible smoothie outcomes: _____

Possible pizza outcomes: _____

Multiply the options together to find the amount of different meal options for Zaku for a total of _____.

The correct answer is _____. Fill in that answer choice.

4 Check

How do you know your solution is accurate?

Lesson 5 *(continued)*

Use a problem-solving model to solve each problem.

1 Alana goes to a school that requires her to wear a uniform. Girls are allowed to wear a polo style shirt in one of four colors; khaki pants, blue pants, or a khaki skirt; and either tennis shoes or dress shoes. From how many different types of outfits can girls choose? **7.SP.8, MP 2**

- (A) 3
- (B) 9
- (C) 24
- (D) 54

3 The menu for Sam's Scoops lists the following different cones and toppings.

Cones	Toppings
Cake	None
Sugar	Chocolate sprinkles
Waffle	Nuts
Chocolate waffle cone	Multi-colored sprinkles Sugar sprinkles Caramel sauce Chocolate sauce Cookie crumbles Chocolate chips

If Sam's Scoops claims they can make 828 different ice cream cones with up to one topping, how many different ice cream flavors do they offer? **7.SP.8b, MP 2**

2 Kitan would like to order from the children's menu at Jonny John's Burger Haven. The kid's menu allows her to choose from five different types of burgers, eight different drinks, seven different sides, and either a girl's toy or a boy's toy. How many unique types of children's meals does Jonny John's offer? **7.SP.8, MP 1**

4 **H.O.T. Problem** Determine the number of possible outcomes for rolling one number cube, two number cubes, three number cubes, and four number cubes. Write a rule for rolling n number cubes if each number cube has six different numbers. Explain how you determined your rule. **7.SP.8a, MP 4**
