Fundamental Counting Principle:

If one event can occur in "m" ways and another event can occur in "n" ways, then the number of ways that both events can occur is m • n. This principle can be extended to two or more events.

Using the Fundamental Counting Principle:

1. Radio station call letters consist of four letters beginning with either a K or a W.

   How many different radio station call letters are possible if...

   A. letters can be repeated?

   B. letters cannot be repeated?

Using the Fundamental Counting Principle:

2. A baseball coach is determining the batting order for the team. The team has 9 players, but the coach does not want the pitcher to be one of the first four to bat. How many batting orders are possible?

Using the Fundamental Counting Principle:

3. How many different 4-digit numbers can be formed from the digits 1, 2, 3, and 4 if...

   A. digits can be repeated?

   B. digits cannot be repeated?

Using the Fundamental Counting Principle:

4. How many different 5-digit zip codes can be formed if...

   A. digits can be repeated?

   B. digits cannot be repeated?

Student Practice - Fundamental Counting Principle:

Determine how many passwords are possible given the following:

1. 2 letters followed by 4 digits (repetition allowed)

2. 3 digits followed by 3 letters (repetition not allowed)

3. 1 letter followed by 2 digits (repetition not allowed)

4. You are choosing curtains, paint, & carpet for your room. You have 12 curtains choices, 8 paint choices, & 20 carpeting choices. How many different ways can you choose curtains, paint, & carpeting for the room?

5. Your school cafeteria offers three salads, four main courses, two vegetables, and three desserts. How many different lunches consisting of a salad, a main course, a vegetable, and a dessert are possible?