NAME: _____ SECTION: _____

FUNDAMENTAL PRINCIPLE OF COUNTING



I. OBJECTIVES

The learner will be able to find the number of possibilities of an event using fundamental principle of counting.



II. LESSON

FUNDAMENTAL PRINCIPLE OF COUNTING

- It is used to count the number of possibilities of an event occurring.
- Suppose an event can be chosen (occur) in m different ways and another independent event can be chosen in n different way, then the two events can occur in $m \times n$ ways.
- Multiply the number of options in each event to find the total number of outcomes.

Example:

1. If two coins are tossed, then in how many ways can they fall?
   Answer: $2 \times 2 = \mathbf{4}$
2. The club members are going to elect their officers. If there are 4 candidates for presidents, 3 for vice president and 2 for secretary, then in how many ways can the officers be elected?
   Answer: $4 \times 3 \times 2 = \mathbf{24}$
3. In how many ways can the Miss Universe, the first runner-up, and the second runner-up be chosen from 10 finalists?
   Answer: $10 \times 9 \times 8 = \mathbf{720}$



III. ACTIVITY

Using fundamental principle of counting, determine the number of possibilities of an event.

_____ 1. Count the number of possibilities when a coin is tossed 3 times.

_____ 2. Find the number of four-letter words with or without meaning, which can be made from letters of the word ROSE, where the repetition of letters is not allowed.

_____ 3. How many 2-digit even numbers can be formed from the digits 1, 2, 3, 4, and 5 if the digits can be repeated?

_____ 4. Dana can choose from four different gym classes to take next year and three different art classes. How many different combinations of a gym class and art class can she choose?

_____ 5. When buying a "value meal" at Wendy's, there are 9 different sandwiches and 7 different sides. How many different meals consisting of one sandwich and one side could someone buy?

_____ 6. Fred wants to buy either a Toyota Camry or a Honda Accord. Both cars come in three different interior colors and four different exterior colors. How many different options can Fred choose from?

_____ 7. At Chubby's Ice Cream Parlor, you can choose from 3 different ice cream flavors (chocolate, vanilla, or strawberry), served in a cone or dish, and one of 2 toppings (whipped cream or sprinkles). How many options do you have to choose from?

_____ 8. Suppose you roll a 6-sided die and draw a card from a deck of 52 cards. What is the total possible outcome of the experiment?

_____ 9. How many 2-digit even numbers can be formed from the digits 1, 2, 3, 4, and 5 if the digits can be repeated?

_____ 10. A company puts a code on each different product they sell. The code is made up of 3 numbers and 2 letters. How many different codes are possible?

Prepared by: *Maisie Trixy S. Calabia*

LIVEWORKSHEETS