Algebra 2B   Name:_____

The FUNdamental Counting Principal

Often in life we are given many different choices. Over the next few days we will be exploring several different ways of counting just how many different choices we can make. We're going to start off today with the Fundamental Counting Principal, which allows us to count our options, even when they number in the MILLIONS!

Fundamental Counting Principal:

Class Examples;

1.) To make a yogurt parfait, you choose one flavor of yogurt, one fruit topping, and one nut topping. How many parfait choices are there?

Yogurt	Fruit	Nuts
Plain	Peaches	Almonds
Vanilla	Strawberries	Peanuts
	Bananas	Walnuts
	Raspberries	

2.) A password for a site consists of 4 digits followed by 2 letters. Repetition of digits and letters is allowed. How many unique passwords are there?

3.) Coach Izzo is getting ready to create his line-up for tonight's game. There are 5 positions: center, point guard, shooting guard, outside forward and inside forward. How many different ways can he make his starting lineup (keep in mind the same 5 players start every game)?

What is a Factorial:

You Try:

3.) A hiker can take 4 trails from the parking lot to the lake, 2 trails from the lake to the playground, and 3 trails from the playground to the cabins. How many different ways are there to get to the cabins from the parking lot?

4.) At Houlihan's in Lansing they have a special on Sundays and Mondays called the Mealio Dealio. For this special, you get your choice of 6 salads or soups, 5 entrees, and 4 desserts. How many different meals can you make for the Mealio Dealio?

5.) Mrs. Surato needs to pick babysitters for the week, she needs one for every day of school, plus one on Saturday so she can grocery shop and one on Sunday so she can watch the game. How many different ways can she arrange her 7 sitters for the days of the week?