



Math Virtual Learning

Algebra IIB

The Data Unit - Probability

May 18, 2020



Algebra IIB
Lesson: May 21, 2020

Objective/Learning Target:

Students will be able to apply probability principles to a real life situation

Let's Get Started!

Below is one Combination, one Permutation and one Counting Principle situation. Identify which one is which.

1. Each letter of the alphabet is written on a separate card. The cards are then put into a box and then mixed up. Ana reaches into the box, randomly selects a card, and does not replace it. Next, Juan selects a card. What is the probability that both Ana and Juan select vowels? (Y is not a vowel)
2. Susie brings a treat for the class. Each student can choose a cookie and a cupcake. The cookies choices are choc chip, M&M, Peanut Butter, or Snickerdoodle. The cupcake choices are chocolate, vanilla, lemon, red velvet, or strawberry. Assuming that you like all of the choices, how many dessert combo options do you have?
3. Mrs. Bunny has 6 babies. Mr. Bunny needs 3 helpers to hide eggs on Easter. How many ways can he choose 3 helpers from his children?

Let's Get Started!

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1. Each letter of the alphabet is written on a separate card. The cards are then put into a box and then mixed up. Ana reaches into the box, randomly selects a card, and does not replace it. Next, Juan selects a card. What is the probability that both Ana and Juan select vowels? (Y is not a vowel) **INTERSECTION (\cap)**
Vowels: A, E, I, O, U so $5/26 * 4/25 = 20/650 = 2/65$
2. Susie brings a treat for the class. Each student can choose a cookie and a cupcake. The cookies choices are choc chip, M&M, Peanut Butter, or Snickerdoodle. The cupcake choices are chocolate, vanilla, lemon, red velvet, or strawberry. Assuming that you like all of the choices, how many dessert combo options do you have?
COUNTING PRINCIPLE 4 cookies * 5 cupcakes = 20 dessert combo choices
3. Mrs. Bunny has 6 babies. Mr. Bunny needs 3 helpers to hide eggs on Easter. How many ways can he choose 3 helpers from his children? **Order doesn't matter because bunny 1, 2, 3 is the same group as bunny 2, 3, 1, so you don't want to count them twice. Since order doesn't matter this is COMBINATION $C(6,3) = 20$**

Probability In Action

Today we are going to practice Probability with interactive websites. Somethings to know about today's practice:

- Each slide will have a link to an interactive practice over a specific topic.
- Each slide will have an overview of the topic and some have hints/suggestions
- Use the button that says "Test Yourself" to start the game

Simple Probability

Click this [Simple Probability](#) to do some practice on what Probability means and some very simple probabilities. Don't forget to SIMPLIFY your fractions.

General Probability

[This game](#) levels up the probability challenge. You will be asked to interpret real world situations and level of chance.

Compound Probability

This link is not a game, just a multiple choice practice of mixed [probability questions](#). There are questions on both simple probability & compound probability (Union/Intersection).

A couple of notes & hints:

A 50p coin has a heads side and a tails side just like our coins.

Some questions may be easier with a diagram

Tree Diagrams

Click on this [Tree Diagrams](#) link to practice using a tree diagram to find possibilities. Be careful! Not all questions are as easy as they look.

Counting Principle

On this game, most of the questions are [Counting Principle](#).
There is 1 that is a Permutation, but could get answered with a picture or list.

All Probability

The last probability practice is an overview of a lot of the different probability topics.

[Level 1](#) - Simple Probability

[Level 2](#) - Combinations and Permutations

[Level 3](#) - Compound Probability

Additional Practice

[This website](#) has A LOT of different practice websites and activities if you would like to do more work with Probability.