Group: Eco buddies 4.0

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## Question 1

* **How could you define an *event* in your sampling scheme? Explain your reasoning.**
  + An event in this sampling scheme would be observing a brown creeper bird in one of the sampling plots.

## Question 2

* **What is the *sample space* of your bird sampling scheme?**
  + The sample space would be 7.

## Question 3

**How many ways are there to arrange the two presences in your grid of six plots? Explain how you found your answer.**

* + There are 15 ways to spatially arrange the two presences because we counted exactly how many combinations are possible.

## Question 4

* Given that the probability of observing a brown creeper presence in a given forest plot is about 50%, do you think that observing *exactly 2 presences* is an unusual event? Explain your reasoning. HINT: The coins might help with this question.
  + It would not be an unusual event because observing 3 birds in the 6 plots is the most likely probability, and 2 birds is not much different.

# Instructions: Acorns

Consider the acorn questions from the reading questions. As a group, use the acorns at your table to answer the following questions regarding the acorns of the three species.

4 red, 4 naked, 4 white acorns. 12 acorns total

## Question 5

Consider the scenario in which you pick up two acorns at the same time in one hand without looking.

* Enumerate the events in this sample space.

1 red, 1 naked

1 red, 1 red

1 red, 1 white

1 white, 1 white

1 naked, 1 white

1 naked, 1 naked

The events in this sample space would be 2, in the scenario where you pick up two acorns at the same time.

* Are these events *combinations*, or *permutations*? Explain your reasoning.
  + It would be a combination because the order of the selection of acorns does not matter.

## Question 6

Consider the scenario in which you pick up one acorn, place it in your left pocket, walk a short distance, then pick up a second acorn and place it in your right pocket.

* Enumerate the possible events in this sample space.

1 red, 1 naked

1 naked, 1 red

1 red, 1 red

1 red, 1 white

1 white, 1 red

1 white, 1 white

1 naked, 1 white

1 white, 1 naked

1 naked, 1 naked

* Are these events *combinations*, or *permutations*?

This would be a permutation because the order matters—you pick one acorn up, then pick up a second. Instead of picking up two at a time where picking up acorns is simultaneous, you have two “pick ups” and this offers more options. There are two events occurring instead of just one event.