Name:\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Hunger Games: Hiding in Plain Sight**

**Background:**

In this activity you get to become a predator searching for prey. The prey is represented by Easter eggs, and there are two species, one is toxic and the other is edible. The toxic species is orange, but the edible species has more variation in its color. Some individuals from the edible species are green, while others mimic the toxic species and are orange. As a predator, you can have one of several different hunting strategies (see below) that determine how likely you are to try to eat an orange individual. Will mimicry benefit the edible species? Will it increase in the population over time? How will predators respond? Let’s find out!

**Instructions:**

* Before beginning the game prepare a set of plastic Easter eggs to represent the prey species. We recommend using 150 Easter eggs, 70 green and 80 orange. The green eggs are all part of the edible species; put a piece of candy into each of these eggs. The orange eggs can be either the toxic species or edible mimics. To start out, put a piece of candy in 20 of the orange eggs (these are the mimics) and a rock/pebble/other inedible object in the remaining 60 orange eggs (these are the toxic individuals).
* Spread the eggs out across a designated area outside in a field/lawn. The area should be large enough that the eggs are not clumped together.
* Assign hunting strategies. The four possible hunting strategies are:

1) Always pick up orange eggs when they are encountered

2) Pick up approximately half of the orange eggs that you encounter

3) Pick up approximately a quarter of the orange eggs that you encounter

4) Never pick up orange eggs

Note that whatever strategy you are assigned remains your strategy throughout the entire activity. Also note that all strategies should pick up green eggs whenever they are encountered.

* Players have one minute to collect as many eggs as they can (while following their hunting strategy). When you pick up an egg, open it up to make sure it is edible (contains candy). If you pick up a toxic species you become “sick” and must freeze and count to 10 before you can resume searching for eggs.
* At the end of 1 minute count up how many edible eggs you collected. If you have 5 or more you survive, if you have less than 5 you die. If you are dead stand off to the side of the game area and form a line with other dead players. If you have managed to collect 7 or more edible eggs not only do you survive, you also reproduce. The person in the front of the line of dead rejoins the game and uses the hunting strategy of the player that brought them back.
* Repeat the egg hunt two more times (make sure you replace all of the collected eggs before beginning a new hunt).
* After completing three egg hunts, answer the following questions:
How has the population of predators changed?

Do you think being a mimic is beneficial?

Who do you think will have more offspring, the green or orange edible eggs?

What do you think will happen to this population over time? Will there be more mimics?

* For the next part of the game change the proportion of mimics in the environment. To do this reset the orange eggs so that 60 are mimics and contain candy, while only 20 are toxic and contain rocks.
* Perform an additional 3 egg hunts following the same rules as above.
* After completing the egg hunts answer the following questions:

How has the population of predators changed?

Is being a mimic still beneficial?

Why are mimics no longer better off than the green eggs?

What do you think will happen to the population of eggs over time?

* Pick up all of the materials and complete the wrap-up worksheet.