

## Natural Selection Simulation

**Objective:** Students will model natural selection by using various utensils to "capture food"

### Materials:

- Bags of beans (northern or lima)
- Trays for holding the beans
- Clothespins
- Plastic spoons, plastic forks, plastic knives
- Tweezers
- Any utensil or item can serve as a mouthpart, use your imagination or improvise with available materials.

### Introduction:

Scene - On a distant planet there exists 5 species of a creature called a Woolybooger. Each Woolybooger is similar except their mouth has variations. All woolyboogers eat beans. Some woolyboogers have a *clothespin* mouth (demonstrate how to use the clothespin to pick up beans). Some woolyboogers have a *tweezer* mouth (demonstrate), some have a *needle* mouth (demonstrate). One year a new species of woolybooger was discovered, this woolybooger was called the *Spoon-Mouthed* Woolybooger (demonstrate). Each of you will play the part of a woolybooger on this planet. The spoon-mouth wooly booger is rare, so only two of you will get to be this type of wooly booger.

At this point, pass out the utensils, give each group a tray with beans. Students can share bean trays but each should have their own utensil. Caution students about "cheating", they must use their utensils in the way their intended to use them (as demonstrated) and may only pick up one bean at a time.

### Procedure:

1. You will run through several trials. Each trial will require your woolybooger to gain at least 20 beans. If 20 beans are not acquired during the time period, your woolybooger has died.
2. Start with 1 minute on the clock. Then reduce the time to 45 seconds, then 30 seconds, then 15 seconds.
3. When a woolybooger dies, the student can play the offspring of the surviving woolyboogers. Give them a new utensil (probably a spoon or tweezer) for the next trial. You can be flexible here.
4. At the end, the only surviving woolyboogers will most likely be the Spoon-Mouthed Wollybooger.

### Discussion Questions: (Answer and submit on separate piece of paper) 5 marks

1. What happens to animals that cannot compete as well with other animals in the wild?
2. Can you think of any real-life examples of the woolybooger, where one species has a definite advantage over another?
3. Sometimes animals that are introduced into an area that they never lived in before, out-compete and endanger resident species, why do you think this happens?
4. If only one species is considered the "fittest", why do we still have so many variations among species. Why do some birds have very long pointy beaks, while other birds have short flat beaks?
5. How do you think diseases can affect natural selection?