Name: _____ Class: _____ Date: _____

The Effect of Humans on a Candy Ecosystem

Learner Outcomes:

- Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
- Classify organisms found in a study plot

Background Information: Human impacts on ecosystems are not always easy to predict. Even though we are encouraged to "walk softly" and leave a "small footprint", humans activity often has a much greater impact on species than we intend or expect. One way to assess the impact of humans on an ecosystem is to use a **study plot**.
A study plot is a marked small area where scientists can count organisms and make observations over time. By looking at the same area, they are able to assess changes in the numbers and types of species in a habitat. The study plot is usually a randomly chosen location within an ecosystem that is expected to represent patterns in the whole ecosystem.

Purpose: In this activity, we will use study plots to investigate how both intended and in-intended human activities impact samples of candy populations.

Materials:
Assorted candies of a variety of shapes, sizes, and colors
Meter Stick String or masking tape

Procedure:

1. A variety of loose candy pieces have been randomly placed all around your classroom. You will mark a study plot to count a sample of the room's candy.
2. Randomly find a section of the room to sample and measure out a 1m x 1m square on the floor using meter stick. Mark out your square using string or masking tape. Your plot may include a desk, shelf, part of a desk, chair, etc.
3. Without touching any of the candies in your square, classify (group into different types) and count all the candies that fall within your plot. Be sure to make note of any 'damaged' candies. Leave your plot markings and candies where they are and return to your desk to record your plot results on your observation table below.

4. In 30 seconds, you may "harvest" whatever candies you wish from anywhere in the room and take them to your desk but you can only take one at a time, returning to your desk after collecting each piece. Your teacher will time you. We will call this the "Human Event"
5. Go back to your plot area and re-count the candies in your plot. Again, make a note of any "damaged" candies, as these will be considered "dead" and not counted as part of the "live sample".
6. Record the results of your second count.
7. Compile your group's results with those from the rest of the class.

Observations:

Individual group plot

Title: _____

	Before Human Event		**After Human Event**	
Candy Species Name	**Healthy**	**Damaged**	**Healthy**	**Damaged**
Total				

Class Data

Title: _____

	Before Human Event		**After Human Event**	
Candy Species Name	**Healthy**	**Damaged**	**Healthy**	**Damaged**

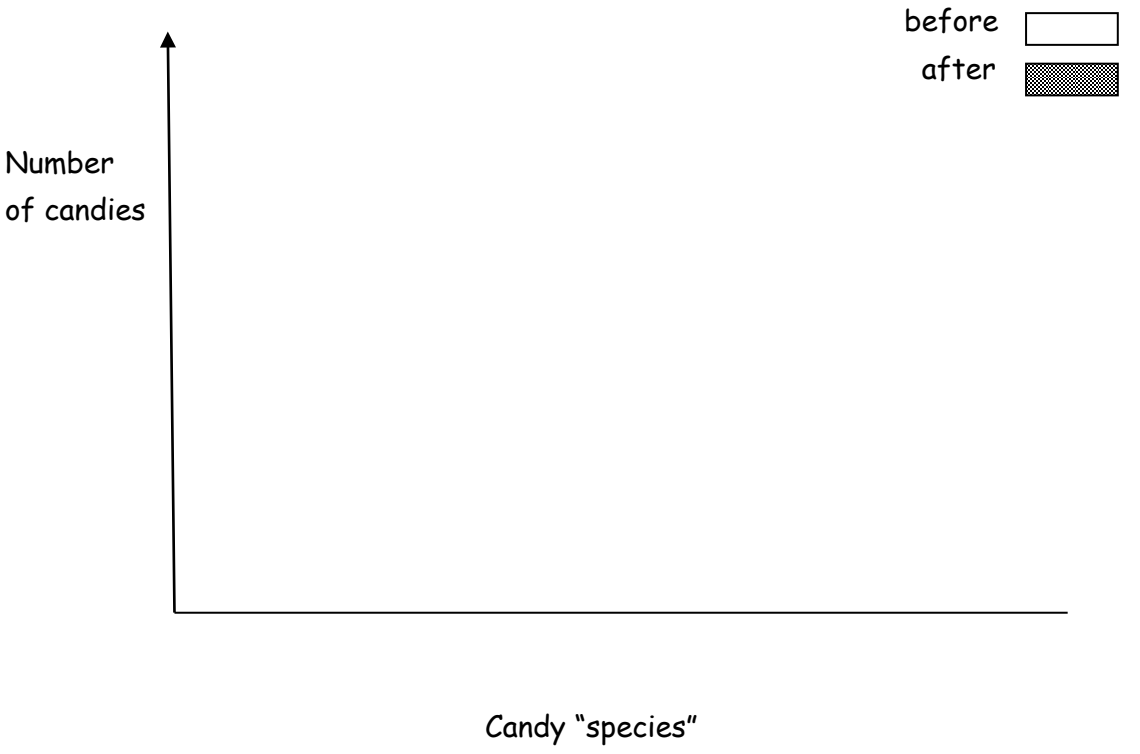
Analysis:

1. Did you have the same candy categories as other groups in the class? Was this important in analyzing the data?

2. Was your plot representative of the overall distribution of candy throughout the class? (Did you have the same percentage of each type of candy as the rest of the class?)

3. Use a bar graph to illustrate the change in the candy populations before and after the "Human Event"

   Graph Title: _____



4. Name at least three ways that humans impacted the population of candy species.

5. What impacts were deliberate? Which were not intentional?

6. What factors caused these impacts to be greater on some species.

7. Describe at least two strategies that would reduce the impact on the candy species.

Conclusion:

Summarize what you learned about measuring the impact of humans on plant and animal populations.

Extension:

1. Research three species that live in your area and:
    a. Describe how human activities have an effect them.

    b. Describe two strategies that could be used to lessen the negative impacts humans have on these species.

2. Create a first person narrative story from the point of view of an animal living in a specific ecosystem. In your story, outline the animal's general characteristics, adaptations, needs, habitat, relationship with other animals within the habitat, the impact that humans have on the animals habitat and the impacts this has on the animal.

- You may present your narrative as an illustrated cartoon, illustrated book, video, skit, poem or written story.

**Teacher Notes:

1. Use a variety of types and sizes of candy that can be easily classified into groups. (Wrapped candy is best so that student can eat it after the activity).
2. Keep track of the number and type of candy pieces you have placed in the room. You will need to share this with students later.
3. Place candy all around the room, including on the floor, on desks, chairs, shelves, and in "hiding places".