**Human Impact Activities**

**Station One: Invading species**

Watch the video clip at <http://www.cbsnews.com/news/the-threat-of-invasive-species/> and answer the following:

1. What is an invading species? Why are they bad for ecosystems?
2. How does a species invade?
3. What are some invading species in NC?
4. What can be done about invading species?
5. Practice Question:

Why might an introduced species be able to reproduce at a rate that leads to overpopulation?

a. Natural enemies of the species may not be present.

b. The introduced species may be a better competitor than the natural species.

c. The existing animals may eat so many of the introduced species that their reproductive rate increases.

d. Both a and b.

10 pts.

**Station Two: Climate Change**
Use the **textbook** and  **http://climatechange.cityofchicago.org/ . Start by watching the Climate Change Basics video in the lower right corner. Use the other links in addition to the textbook to answer the following questions in your notebook:**

1. Describe the greenhouse effect. What traps heat?
2. Do we need the greenhouse effect? Why or why not? Draw/label your picture from Explore C to explain your answer.
3. What is the current problem with carbon in the atmosphere?
4. Besides carbon, what other greenhouse gasses are there?
5. List the effects of global warming on the organisms and ecosystems.
6. What can we do to help resolve the problem?
7. Draw a venn diagram to compare and contrast Global Warming and Ozone Depletion.
8. Practice Question:

The greenhouse effect may increase on Earth because

a. decomposers are not recycling matter.

b. too much oxygen is now given off by plants.

c. increasing carbon dioxide will trap more heat.

d. Earth tilts toward the sun in the summer.

/ 10 pts.

**Station 3: Acid Rain**

**Textbook and Diagrams**

Part A: General pH information

1. Draw the pH scale on your paper.

0--------------------------------- 7 -------------------------------------14

Label the section of the scale that is acid, basic and neutral.

Label at least 4 common/household substances on your pH scale.

Part B: Acid Rain

1. Define acid rain.
2. What human activities lead to acid rain? How?

Part C: Data

1. Look at the map of the United States. The bar graphs show the amount of gas and particle emissions over several years.
2. What year did NC have the highest emissions?
3. What part of the country has the most emissions in general?
4. Based on this data, which state would have the most acid rain?
5. Look at the data chart. This chart shows the range of pH that aquatic animals can tolerate.
6. What is the pH tolerance range for snails? Frogs?
7. The average rainfall that is accumulating in lakes and rivers of NC has a pH of 4.5. Based on this data what animals would survive best in our waterways?
8. Practice Question:

Which one of the following is NOT a cause of acid precipitation?

a. sulfur dioxide and carbon dioxide from burning coal

b. destruction of the ozone layer

c. nitrogen oxides and carbon dioxide from car exhaust

d. all of the above

 / 10 pts.

**Station 4: North Carolina Specific Concerns**

**Watch the video:** [**https://www.youtube.com/watch?v=WH-hehxZVtM**](https://www.youtube.com/watch?v=WH-hehxZVtM)

**Read the article: Retired Christmas Trees Assist Beach Erosion Efforts (hardcopy) or** [**https://www.coastalreview.org/2019/01/fresh-christmas-trees-useful-after-holidays/**](https://www.coastalreview.org/2019/01/fresh-christmas-trees-useful-after-holidays/)

1. **What is causing erosion on the NC coast?**
2. **Why are the dunes important to the ecosystem?**
3. **What can be done to combat beach erosion?**
4. **How does beach restoration work?**
5. **Explain why you should donate Christmas Trees to the beach?**
6. **Define ‘sustainability’ in reference to Humans and the Environment?**

 / 10 pts.