

## **Nature Engagement Workshop**

### **Summer Institute for Climate Change Education**

#### **Weather and Phenology**

Phenology is the study of cyclical phenomena in relation to climate.

Materials: Thermometer, barometer, anemometer (wind speed)

Activities:

1. Collect weather data: Temperature, wind speed, wind direction, humidity, cloud type, cloud cover (%), precipitation, etc.
2. Phenology: Leaves, buds, birds, ice out, snow, What's expected in March?
3. Soil: Temperature, layers, historical use

Discussion:

How could you bring this back to climate change?

- Extreme weather events are happening more frequently because of climate change.
- If you were to record weekly/daily for an extended amount of time your audience may see that. You may need to compare the data you collected to historical data.
- When are the correct times for certain seasonal change compared to when they are happening now?
- Are certain species of plants and animals found in different biomes?

#### **Journaling and Drawing**

Materials: Journals, pencil, colored pencil

Activities:

1. Free journaling. List out the things you see, hear, smell, and feel. Describe the items on your list in a story, poem, word cloud, etc.
2. Pick something from your area to draw in detail. Include labels, measurements, color.

Discussion:

How could you bring this back to climate change?

- Recorded observations provide insight into changes happening
- Compare your journal with historical journal entries of the same place. What are similarities/differences?
- Create a sense of place that deepens your value in the environment

#### **Citizen Science**

Scientists are seeing changes around the world. To be certain those changes are related to climate change, scientists need observations from around the world for extended periods of time. Instead of working alone, some researchers will invite volunteers to help. It's a partnership between the public and professional scientists that can help answer questions scientists couldn't answer on their own.

Activities:

- Project Budburst- observe changes in plants through the seasons

- Nature's Notebook- observe nature in your backyard or nearby area weekly and enter this information online
- Cornell Lab- (Project Feeder Watch, Nest Watch, Urban Birds, Bird Count)
- CoCoRaHS- Community Collaborative Rain, Hail, and Snow Network-Measure and map precipitation
- Citizen Stream/Lake Monitoring- Water quality monitoring
- mPing- collect weather reports about the type of weather that is occurring

### **Carbon Sequestration**

Carbon continuously cycles through all plants, animals, soils, rocks, oceans, and the atmosphere. It is found everywhere on earth, and it undergoes chemical reactions and changes forms as it moves. Fossilized carbon (fossil fuels) such as coal, oil, and natural gas are burned as fuel to power the human world. Sequestration represents the net intake of carbon over a period of time. When areas of the earth are modified to sequester less carbon, such as deforestation, there becomes more carbon in the atmosphere.

Materials: Measuring tape, recording pen and paper

Activities:

1. Counting Carbon- Measure trees and calculate the amount of carbon stored in individual trees. Measure the circumference of the tree. Calculate the diameter of the tree by dividing by pi. Check the table to find the carbon content.

Discussion:

- What was the largest/smallest amount of carbon stored in a tree? What size of tree?
- How do different landscapes compare in carbon storage? What would change their storage or sequestration potential?
- What trees sequester more carbon? What types of forests should you plant to help mitigate climate change?

### **Energy Concepts**

Materials: Energy cards, powerline

Activities:

1. Refer to the energy cards to answer the question in small groups. On each card is a distance that the group will travel along beneath the power line following it. Answer the next question at the next stop.

Discussion:

- Which portion of the journey is the longest distance the energy travels? How does that affect climate change?
- How can energy be part of the problem, but also part of the solution?