Orchard to Glass

Grade Level: Kindergarten – 2nd Grade

Approximate Length: 45 – 60 minutes

Objectives:

- Learn the importance of bees and their role in pollinating plants
- Discuss the relationship between bees and the environment
- Explore the process of turning apples into cider
- Compare and contrast apple cider with apple juice

Science Standards Available (Teacher will identify which standards to bundle):

- K-LS1-1 Plant and animal needs
- K-ESS2-2 Environmental change
- K-ESS3-1 Environmental relationships (needs and places they live)
- K-ESS3-3 Environmental solutions
- K-PS3-1 Sunlight warms the Earth
- 2-LS4-1 Habitat and biodiversity
- 2-LS2-1 Environmental plant needs
- 2-LS2-2 Seed dispersal and pollination
- 2-ESS2-1 Erosion design solution
- 2-ESS2-2 Mapping land and water

Outline for Program:

- **Interest Approach (5-10 min):** Students will start the lesson by working as a team in small groups to create a definition of a seed and then as a whole group we will come together to share our answers, to see how close we are to the actual definition
- **Opening Activity (15-20 min):** Together the group will read "A Seed Needs Sun" and create Plant Needs Bracelets to connect the important factors to a successful garden
- **Presentation (45-60 min):** The students will learn about the importance of bees not only to environment, but to the humans as well. We will go through what bees do for the pollination of plants, how efficient bees are as compared to other pollinators and why we need to take care of the bees. Then students will learn about the process of making cider and how it is different than juice. Small groups will collaborate with their small groups to compare and contrast apple cider and apple juice. After groups have completed this task, then we will have a discussion with their answers as a whole group. Students will also have the opportunity to work on their math skills, as we work through questions about number of apples needed to make a small glass of cider and how many apples it would take to give everyone in the class a glass of cider to drink. The final discussion will cover the possible reasons why apple cider is more expensive than apple juice. Students will get a chance to give their opinions and ask questions about bees, cider, juice and visiting a working apple orchard.
- **IQhub Scavenger Hunt (45-60 min):** The IQhub is an interactive museum, that will help the students build on topics they have already learned and grab their attention for some new ones as well. Students can work individually or in small groups to explore the IQhub and learn about agriculture and the environment. This museum incorporates Science, Technology, Engineering and Math (STEM) to give students a well-rounded and fun learning experience.
- **Closing Activity (15-30):** Since bees play a key role in the life cycle of plants, it's important to talk about the other key factors in a healthy environment for not only their habitat, but for humans as well. Students will get a chance to stretch their legs and see some easy ways to care for the environment and create a healthy habitat for bees and humans. Erosion, wetlands and environmentally friendly buildings are other topics discussed during this activity.

Additional Resources on IQhub YouTube Channel:

https://www.youtube.com/watch?v=aIvWjDmZ8hY&list=PLM9jntqmjKUBtcIl9ORrBjm3fdOrGy3D0&index=4