Learning Experience 4

Investigating the Problem

DO NOW
Last class you heard from Stakeholders at the community meeting. Can you think of a situation in your life where there were different stakeholders? Who were the stakeholders?

HOOK
Today you will be assigned to a Scientist Role. You will search for more information in the virtual forest of EcoMUVE related to your role.

Teacher Prep/Materials

- Laptop cart/computers
- EcoMUVE
- Experience 4 Presentation & Do Now
- Experience 4 - Differentiating Scientist Roles
- Scientist Role Guide Sheets
- Scientist Role Learning Quests Website: https://goo.gl/NvEHZh
- EcoMUVE Pond-Forest Master Data File

Summary
Students will be grouped into teams of four. Each member will take on a unique scientific role to help their team determine what may have caused the reduction in visitation on Dover Island. The four scientist roles include bird watcher, public health worker, population specialist, and botanist. They will explore the forest ecosystem through the eyes of their scientist role. Students will use their Guide Sheets and Learning Quests to discover important information, creating their own version of a food web explaining what is happening on Dover Island. So students do not have to collect every piece of data, direct them to the EcoMUVE Master Data File.

Understanding and Performance Goals

- Students will understand their role on the team and understand the expectations of their role.
- Students will also learn about different specialties of different scientists and use measurement tools that are specific to their job.

Analyze (10 min.)

1. In small groups, have students share out their stakeholder situations. Ask for 1-2 volunteers to describe their situations and identified stakeholders with the entire class. Relate their personal situations to the Dover Island Stakeholder Presentations, highlighting any evidence those stakeholders would need to back up their opinions.
2. Encourage students to think about what kind of evidence they will need to collect in order to support or reject the hypotheses they developed on the previous day.

Expand (20 min.)

Time
100 minutes
(approximately 2 periods)

Key Vocabulary
Population Specialist
Botanist
Public Health Intern
Bird Watcher

The EcoMUVE Master Data File should already be onto the computer. Students can be shown how to access and import this data to aid in the completion of their Scientist Guide Sheets.

Differentiation
Refer to *Experience 4 - Differentiating Scientist Roles* for suggestions on differentiating roles and groupings.

1. Explain that students will be working in teams to look for evidence to help explain why there are not as many visitors coming to Dover Island. In order to ensure that every possibility has been considered, students will be asked to take a specific scientist role to search for particular evidence on the islands. 2. Discuss the responsibilities of each of the team roles. Remind students that different situations may be happening on the two islands. Encourage students to compare the populations and changes over time on the two islands. ○ Population Specialist: There are many animals on the island, and most of these are changing over time. You'll learn important techniques for studying animal populations. We hope you can apply what you've learned to help us understand the changes that are happening. ○ Botanist: The trees are the most obvious and sometimes the most overlooked part of a forest. Some people consider the trees the backdrop for things that are happening in the forest, but the reality is that the forest itself is changing! We hope you can learn about how the vegetation is changing so that we can figure out what is going on. ○ Public Health Intern: Lyme disease risk has changed a lot over the years, but we don't fully understand why. Are there changes in the environment that can help explain something that is so important to human health in the local community? We hope you can learn enough about wood ticks, their life cycle and the environment to better understand what is causing the changes in Lyme disease risk. ○ Bird Watcher: It is your job to follow up on some of the ideas shared by Bruce the bird watcher who lives in the community near the Islands. Look for how the bird populations have changed on the islands over time. What might cause changes in bird populations? 3. In their teams, assign or ask students to pick each of the scientist roles. 4. Explain and distribute the Scientist Guide Sheets to the students, either electronically or on paper. 5. Explain the Learning Quests to the students. Demonstrate how they may access the Learning Quests by accessing the Google Site: https://goo.gl/NvEHZh **Explore (55 min.)** Using their Scientist Guide Sheets, have students explore Dover and Willis Island to find the key information. If needed, demonstrate to students how to access and import the EcoMUVE Master Data File to complete the population data tables within EcoMUVE. There is extended time in this Learning Experience, 100 minutes, to allow time for students to complete their Scientist Guide Sheets and Learning Quests. **Review, Extend, Apply (15 min.)** Have students get into groups with their same role. Discuss and compare their finding and share tips on how to find certain organisms or information points. Where are areas of the Guide Sheets that are more difficult to complete?	Roles are listed in order of complexity. Population Specialist (no additional Learning Quest) Botanist: *Seeing the Forest and the Trees* Public Health Intern: *Lyme Disease in the Neighborhood* Bird Watcher: *Bird Basics*