Learning Experience 8
Presenting Findings using Scientific Illustration, Scratch & MakeyMakey

DAILY MESSAGE/DO NOW
By learning about the complex relationships in the forest ecosystem, your original team hypothesis should have changed. Right now, what is your current claim for why Dover Island is having less visitors?

HOOK
It's time to pull together all you have learned about forest ecosystems, complex relationships, and the problem on Dover Island. You will be able to creatively express your claim, evidence and solution through art, science, and technology.

Teacher Prep/Materials
- Laptop cart/computers
- EcoMUVE
- Experience 8 Presentation & Do Now
- Final Rubric
- Final Watercolor Web Requirements
- Final Presentation Requirements
- Final Presentation Template
- Final Claim & Evidence Planning Sheet
- Sample Scratch Project & Watercolor Food Web
- MakeyMakey
- Scratch Permission Slip (if needed)

Summary
Students begin preparing for presenting their findings through an interactive ecosystems project using the tools of watercolor, Scratch, and MakeyMakey as presentation tools. Present a sample finished product for each of the tools, the project rubric, and a Scratch project pulling it all together.

In their teams, students will discuss and agree upon a final hypothesis/claim. Teams will compile evidence to support their hypothesis using data graphs from EcoMUVE and revise draft concept maps accordingly.

Note: Use of the online version of Scratch is preferred. Students will need a signed permission slip. The alternative to working online is the Scratch Offline Editor. This application is installed on the computer. Saved projects can only be accessed on that particular computer through the Offline Editor.

Understanding and Performance Goals
- Students should become familiar with final project expectations through the rubric and guideline documents.
- Students will collaborate with their team to come to a final hypothesis based on their evidence and scientist role perspectives.
- Students should recognize the importance of using data and evidence to support a scientific claim.

Time
50 minutes

Key Vocabulary
Scientific Illustration
Scratch
MakeyMakey
Claim
Evidence
Reasoning

Analyze (10 min.)
Give students time to present their perspective on a update claim to their entire team. Ask students to discuss with their team members any specific evidence learned in their Learning Quests, explorations of EcoMUVE and the field guide, and their Scientist Guide Sheets.

Expand (20 min.)
Pass out a packet of the final project documents to each team. In a whole-class discussion, present the documents related to the final project using the Experience 8 Presentation as a resource to show examples of the final project. Highlight the three different tools students will use to present their findings.

1. Scientific Illustration
   - For teachers - view Scientific Illustration Demonstration Lesson online at: http://youtu.be/ViOXuFJ4R40
   - Visiting artist Kyle Browne will teach students about Scientific Illustration using pencils and watercolors to draw each of the organisms and forest backgrounds needed for their Team Watercolor Food Web.
2. Scratch - http://scratch.mit.edu
   - For teachers - learn about Scratch through the ScratchEd Website: http://scratched.gse.harvard.edu/ and the Creative Computing Curriculum Guide: http://scratched.gse.harvard.edu/guide/
   - Organisms and forest backgrounds will be uploaded into the computer program Scratch, where the organisms will be "brought to life" to show relationships in the team food web.
3. MakeyMakey - http://makeymakey.com/
   - For teachers - learn about MakeyMakey and Scratch through the **Experience 8 - Scratch & MakeyMakey Guide document** and by visiting the MakeyMakey How-To Website: http://makeymakey.com/howto.php
   - Use MakeyMakey to connect the Watercolor Food Web to Scratch. By laying down conductive "hot spots" next to each organism, alligator clips can be attached to MakeyMakey to trigger different keys on the keyboard. In Scratch, keys can be programmed to initiate actions in Scratch, such as a deer being brought into a forest ecosystem.
4. Demonstrate a sample Scratch project as well as a sample MakeyMakey setup connected to a watercolor food web.

Explore (15 min.)
Provide time for students to read through the program requirements in their teams, documenting any questions to ask to the teacher when circulating the room.

When done, have students begin and possibly complete the Final Claim and Evidence Planning Sheet with their team. If completed, have students start collecting evidence, graphs, in EcoMUVE.

Review, Extend, Apply (5 min.)

Check in with students to see who completed the Final Claim and Evidence Planning Sheet. Ask teams to articulate the evidence they used to arrive at their claim.	