



Author Name: Jennifer Stainton	Content Areas: Biology
Lesson Plan Title: Atlantic salmon Raising Project	State: VT
Lesson Time Frame: 55 minutes	Inspired by an Earthwatch Expedition: Salmon of the Pacific Northwest
Student Level: High School	

Narrative/Abstract:

My Earthwatch experience led me to promote the raising of Atlantic salmon in the science classroom. By working in conjunction with The Sharon Academy biology teacher, Rob Stainton, ninth grade biology classes will venture on a several weeklong project/unit to raise Atlantic salmon fry in the classroom and then release them into the White River. A statewide effort is in place to increase salmon numbers in Vermont rivers. A local fish hatchery will supply all materials (chiller, eggs, etc...) to have salmon raised in the classroom and cared for by students. The first day of this unit is set aside for an introduction to salmon habitat and lifecycle. I will develop a PowerPoint presentation on my experiences on the Earthwatch Institute program, "Salmon of the Pacific Northwest." This presentation includes information on salmon habitat, the salmon lifecycle, and the importance of salmon in Vermont. Because I am not teaching biology this school year, I am planning on facilitating and aiding the biology teacher with this unit. This introductory class will lay the groundwork for this long-term project.

Essential Questions:

- What do salmon need to survive?
- What is the lifecycle of a salmon?
- Why are salmon important to Vermont?

Performance Indicators:

At the end of the lesson students will be able to:

- Identify the physical characteristics of Atlantic salmon by working in pairs.
- List habitat needs of Atlantic salmon.
- Organize salmon lifecycle steps in order through large group coordination.
- Develop reasons for the importance of the salmon to Vermont.

Materials:

- Computer with PowerPoint.
- Projector for PowerPoint presentation.
- White board, clean.

- Lifecycle steps, including names, drawings and length of time – pieces of paper.
- Map of barriers to salmon travel from the White River to the sea (and vice versa).

Technology:

- Computer
- PowerPoint
- Projector

Instructional Procedure:

<i>Time (min)</i>	<i>Activity</i>
0-5	Take attendance, collect any homework; Rob Stainton introduces Jen Stainton to class.
5-15	Jen gives 10-minute introductory PowerPoint presentation on Earthwatch Institute program. This will include photographs from the trip, explanation of the research conducted.
15-25	How to identify Atlantic salmon activity. Jen leaves a PowerPoint slide of an adult Atlantic salmon on the board. In pairs, students must list the characteristics of the salmon that make it most identifiable. Students share lists in large group. Characteristics of Atlantic salmon are reviewed.
25-35	Salmon lifecycle activity. Jen shows PowerPoint slides of Atlantic salmon at various stages of life. Technical names, and length of time in each part of the lifecycle are given. Each student is given a drawing of a lifecycle stage, a name of a lifecycle stage or a length of time. The whole class must put the name, picture, and length of time together and in order in five minutes (time can be adjusted).
35-50	Slide show of salmon habitat needs. A map of barriers to salmon travel from the White River to sea (and vice versa) is handed out to students. Slide on the importance of salmon to Vermont.
50-55	Conclusion: review material covered, assign homework.
	Homework: A one-page response to the following question: “Should river dams be removed to improve salmon populations? Why or why not?”

Assessment:

Student understanding of the material will be assessed in the following ways:

1. Participation in in-class activities.
2. Student participation in in-class discussion on homework question.
3. Homework completion.

Extensions:

This is the introductory class to a unit on raising Atlantic salmon in the classroom. Student knowledge of this basic information will be important as the unit continues.

Contacts for the unit:

Jenna Guarino, Vermont Institute of Natural Sciences.
Bethel Fish Hatchery.