

Salmon in the Classroom

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Description

The lessons in this unit were designed to be given during and after salmon have been raised in the classroom, though most of the lessons can be adapted if salmon eggs or incubator equipment is not available. Local hatchery programs will be able to assist you with the setup of an incubator in your class. The Department of Fish and Wildlife has recovery and education programs that facilitate these activities. Please consult your local fish and wildlife office for more information about raising salmon in your classroom.



Student Outcomes/Objectives

- Students will be able to list the salmon life cycle stages in order.
- Students will be able to draw a stream with the vegetation, animals, and water quality parameters that are necessary for salmon survival.
- Students will be able to explain the connection between animal morphology and their habitats.



Time Estimate

1 month: this includes the time it takes to incubate the salmon.

Oregon State University National Science Foundation Rural Science Education Program

<http://cropandsoil.oregonstate.edu/gk12>

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Material

- Salmon Life Cycle Video
- Life Cycle Story (attached)
- Picture of six life cycle stages (attached)
- Scissors
- Crayons/markers
- Colored Clay
- Fish habitat cards (attached)
- Write-in-the-rain paper



Extensions/Resources

Oregon Department of Fish and Wildlife Salmon Trout Enhancement Program
<<http://www.dfw.state.or.us/STEP/edu.html>>

Salmon in the Classroom

DAY # 1

The Salmon Life Cycle

I. Objectives

- Students will be able to list the salmon life cycle stages in order.

II. Materials

- Salmon Life Cycle Video
- Life Cycle Story (attached)
- Picture of six life cycle stages (attached)
- Scissors
- Crayons/markers

III. Introduction for students (5 minutes)

The salmon life cycle is famous in the fish world and justifiably so. The odds against the survival of a fish from egg to spawning are huge. The epic journey from the spawning grounds to the sea and the return to spawn in the same spot years later is also a remarkable feat.

IV. Activity Procedures (20 minutes)

Watch the video that discusses the salmon life cycle. Cut out the 8-page story and staple it together to make a booklet. Cut out the six life stage pictures. Ask the students to read the story and match the picture with the appropriate page (*Worksheets are attached*).

V. Closing Activity/ Assessments (10 minutes)

Check to make sure that the stages are on the correct pages.

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DAY # 2

Funky Fish Morphology

I. Objectives

- Students will be able to explain the connection between animal morphology and their habitats.

II. Materials

- Colored Clay
- Fish habitat Cards (attached)

III. Introduction for students (5 minutes)

Make sure each student understands the relationship between form and function in the animal world. It would be best to bring in examples such as preserved fish or drawings of different fish morphologies. While visual representation is present, briefly explain why certain morphologies are advantageous given the fish's native habitat and predator-prey relationships. Leading question: *What effect might habitat, potential predators, and prey types have on fish morphology?*

IV. Activity Procedures (20 minutes)

Explain that the goal of this activity is to design the best adapted fish possible. Give each student or group a sizeable glob of clay. Instruct them to use the clay to shape their fish while giving special attention to mouth morphology. Mouth morphology should be clearly represented in detail. Pass out the habitat cards (below) to each group.

Once again present the class with more examples of animal morphologies. This time include non-aquatic animals as well. Help the class compare and contrast several of their specific designs with other creatures that inhabit similar habitats in nature.

V. Closing Activity/ Assessments (10 minutes)

Ask each student or group to explain their models in front of the class, indicating how certain features will benefit and/or inhibit the fish's survival in its designated habitat.

Your fish lives in cold, fresh water. It is a carnivore, but relies on camouflage rather than speed to catch its prey.

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Your fish must travel long distances from its spawning grounds to its feeding grounds. It prefers to eat meat, but will also eat plants when they are available. Your fish is a very fast swimmer and lives in salt water.

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Your fish is very large, but eats very tiny animals called krill. Krill are found in large groups in the ocean, numbering in the millions.

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Your fish lives in freshwater lakes. It has no natural predators and spends most of its time munching on plants found at the bottom of lakes.

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Your fish is an aggressive carnivore living in freshwater. It eats other fish, amphibians, mammals, and even its own kind.

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DAY # 3

Salmon Stream Design

I. Objectives

- Students will be able to draw a stream with the vegetation, animals, and water quality parameters that are necessary for salmon survival.

II. Materials

- Write-in-the-rain paper

III. Introduction for students (5 minutes)

This lesson will help students learn about freshwater salmon habitat while tying the previous lessons together. This should be done in preparation for the salmon release field trip. The activity is intended to be a transition from in-class activities to the salmon release fieldtrip.

IV. Activity Procedures (30 minutes)

Prior to class, make photo copies of two curved lines (represents a river) on write-in-the-rain paper. Students should be in pairs of two. Briefly discuss the various parameters that are necessary for salmon survival. After each topic allow the pairs to add each parameter to their drawings. Make sure students understand the role that each parameter plays in supporting or inhibiting the survival of salmon. An example of the final product is below.

Parameters to Cover

Water Quality: Temperature, Dissolved Oxygen, Turbidity/ Sedimentation

Physical Parameters: Shelter (debris, boulders, trees, etc.), Stream Flow, Substrate (gravel, mud, etc.)

Other Living Things: Vegetation, insects, amphibians, predators (birds, other fish)

V. Closing Activity/ Assessments (5 minutes)

At the end of class, have each student write a one sentence farewell to the salmon fry. The students will bring their drawings on the field trip so that they can compare the habitat they drew with the habitat at the release site.

