Trout in the Classroom - Lesson/Presentation Plan

Observing Embryonic/Alevin Development (DRAFT)

Audience/Grade: Adaptable to all grades.

Overview: Instructor guides students through the process of removing trout eggs/alevin from the aquarium and making direct observations in science journals.

Skills/Understandings/Objective(s):

MS-LS4-3. **Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.** [Emphasis is on inferring general patterns of relatedness among embryos of different organisms by comparing the macroscopic appearance of diagrams or pictures.] [Assessment Boundary: Assessment of comparisons is limited to gross appearance of anatomical structures in embryological development.]

4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction.

4-LS1-2: **Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways**

Timeframe: 10-20 minutes **Group Size:** ~20, Observation teams of 3-4

Preferred Location(s): Classroom setting.

Materials/Preparation:

- Petri dishes (one for instructor/classroom projection); more for student teams as needed.
- Plastic spoon or similar tool
- Laminated metric graph paper for measuring
- Document projector, or other magnification option for class/group viewing
- Science journals

Motivator/Warm-Up: Basic discussion… over the next few weeks, your trout will hatch and continue to go through amazing changes, if you look carefully. Based on information in the slides, what do you expect to be able to see?

Procedure/Activity Summary: (10-15 minutes)

Using a plastic spoon or other tool, carefully remove alevins from aquarium and transfer to petri dish. (gently agitating the water will raise alevins off the bottom of the hatch basket, so they can settle onto a spoon.)

Cover the petri dish and move them to document projector.

Have class observe alevins for up to 10 minutes (before returning them to fresh water) and create a science-journal entry:

- Date of observations, age of subjects

- Illustration and labeling
- Measurements: body length, yolk sack or other parts
- Behavior observations

Specific elements to note:
- Heart beating- is it visible?
- Is the optic nerve arrangement still visible? (This allows us to visualize the transfer of information from the eyes to the brain to the body: 4-LS1-1)

Wrap Up: Have students share observations, and discuss what they expect to change in the coming week (we want to encourage regular viewing when we are not present.)