

Trout in the Classroom

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Overview: Students raise trout from eggs to maturity, and release trout into a local river. The project allows students to observe the changes in the trout as they grow and mature.

Targeted Grade: 3 Possible K-12

Materials needed: 55-gallon tank, chiller, insulation to put around the tank (so the chiller doesn't burn out), pebbles/stones, filter, bubbler, trout hatching bin, water test kit, fish food, and various solutions to add to the water to establish the ecosystem and to keep it healthy and ammonia-free.

The trout grow during the fall and winter months, and are released into a state-approved river in the spring. Students take turns testing the water's nutrients, feeding the trout, cleaning the tank, disposing of infected eggs, changing out the water, keeping a log, and much more as the trout grow.

Standards: *Below are the CCSS connections and CT Social Studies Standards linked to the targeted NGSS standard. There are many other potential connections, based on your grade-level and curricular goals. Check your grade-specific standards for others.*

NGSS Standard(s)		CT Social Studies Standards	
3-LS3-1 Traits	3-LS4-2 Variations and advantages	GEO 3.8 Human Settlement and Movement	HIST 3.7 Using historical sources
Common Core Math Standard(s)		Common Core ELA Standard(s)	
3.MD.1 Telling time	3.MD.2 Measuring liquid volumes 3.MD.3 Scaled picture/bar graph	RI.3.1-10 Reading Informational Texts	
		W.3. Writing	
		SL.3. Speaking and Listening	



Standards-Based Curricular Connections: Trout in the Classroom can support your curricular goals in many ways including, but not limited to, the example below.

- **Life Sciences:**

- **3-LS3-1:** Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
 - Students should make observations and collect data throughout the lifecycle of trout, from eggs to fingerlings. Students can compare data to see if there are variations in the traits among the classroom fish.
 - Students can practice mathematics skills in the care of their fish, such as measuring volumes (3.MD.2) and telling and writing time (3.MD.1)
 - Students can research trout, their lifecycle and care (RI.3.1-10) and write or communicate about their experiences (W.3 and SL.3)
 - Contact your librarian for books about fish and trout
 - Students might blog about or photo journal their experience. They might even take on the persona of their fish to discuss the world from the fishes' view.
 - **Science & Engineering Practices:** Analyzing and Interpreting Data.
 - **Crosscutting Concepts:** Patterns.

- **Life Sciences:**

- **3-LS4-2:** Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
 - With the data mentioned above, students could create a cause and effect diagram indicating how the differences among the trout (such as their coloration) indicate that they may be more likely to survive.
 - **Science & Engineering Practices:** Constructing Explanations and Designing Solutions.
 - **Crosscutting Concepts:** Cause and Effect.

Other Potential Connections:

The following list provides a general overview of other possible uses for Trout in the Classroom. WCAIS Magnet School in Danbury uses Trout in the Classroom as part of their Science, Technology, and International Studies curricula by noting observations, graphing data, locating the release site (the Still River) on a map of Connecticut, teaching students about life cycles, and helping students to understand that releasing trout is part of a bigger, more global community effort in environmental awareness.

Technology – Students should use technology to graph data gathered each day—such as water temperature, number of eggs, water nutrient levels, etc.

Art – Students should create a progression drawing where they document the growth of the trout over time.

Social Studies- Students could use historical sources to research how trout populations may have played a role in the settlement or movement of some people in the past. (GEO 3.8, HIST 3.7).

Additional Resources on Trout in the Classroom:

<http://www.cttrout.org/troutintheclassroom.html>

These suggestions are examples only, and may require adaptation. Check your grade-specific standards to determine whether or not the suggestions provided meet your individual curricular needs.

For more information, contact ctgreenleaf@ctgreenschools.org

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