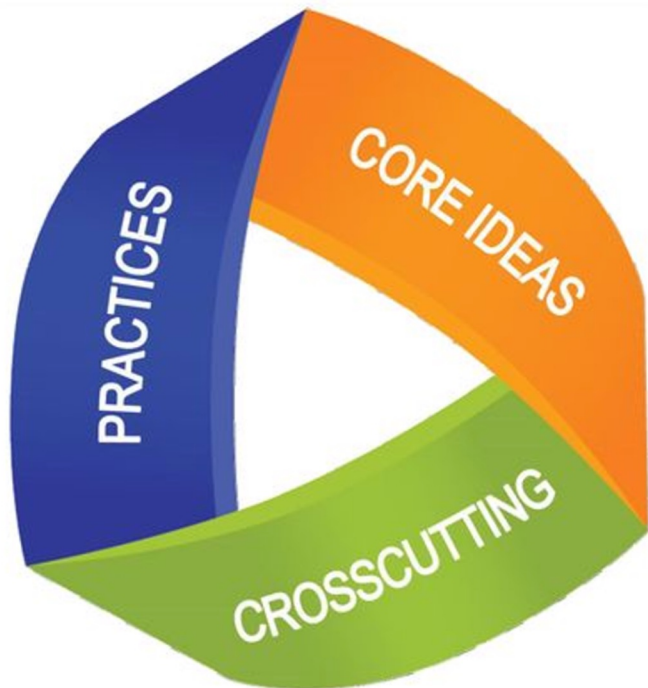


3-Dimensional Architecture

SEP:

- Science & Engineering Practices
- “What students do”



DCI:

- Disciplinary Core Ideas
- “What students know”

CCC:

- Crosscutting Concepts
- “How students think”

This image was used as an investigative phenomenon to explore a lesson covering the standard below.

- Could this CCC be explicitly taught using the image? (*Look at the progression*)
- What topics might the lesson focus on in order to hit all components of the standard?



Grades 6–8

3.3.6-8.H Earth and Space Science: Earth's Systems

Students who demonstrate understanding can *develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.*

Clarifying Statement: Emphasis is on the ways water changes its state as it moves through the multiple pathways of the hydrologic cycle. Examples of models can be conceptual or physical.

Assessment Boundary: A quantitative understanding of the latent heats of vaporization and fusion is not assessed.

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
<p>Developing and Using Models Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.</p> <ul style="list-style-type: none">• Develop a model to describe unobservable mechanisms.	<p>ESS2.C: The Roles of Water in Earth's Surface Processes</p> <ul style="list-style-type: none">• Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land.• Global movements of water and its changes in form are propelled by sunlight and gravity.	<p>Energy and Matter</p> <ul style="list-style-type: none">• Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter.

Science & Engineering Practices

The eight practices of science and engineering that the *Framework* identifies as essential for all students to learn and describes in detail are listed below:

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

PA STEELS standards

(NGSS standards plus Technology and Engineering and Environmental Literacy & Sustainability)

officially adopted on **July 16, 2022**

STEELS standards take effect on **July 1, 2025**

First year of mandated implementation for school districts is the **2025-2026** school year

New state standardized tests (PSSA / Keystone) will be implemented in the **2025-2026** school year



Trout in the Classroom

Matt Cockrum and Matt Rogers



STEEL Standards Connections K-5

- Kindergarten
 - 3.1.K.A Use observations to describe patterns of what plants and animals (including humans) need to survive
- 1st
 - 3.1.2.C Make observations of plants and animals to compare the diversity of life in different habitats.
- 2nd
 - 3.1.2.C Make observations of plants and animals to compare the diversity of life in different habitats.
- 3rd
 - 3.1.3.A Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
- 4th
 - 3.1.4.A Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- 5th
 - 3.1.5.B Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Who Will Maintain the Tanks?

Paradise:

Matt Cockrum

Salisbury:

Matt Rogers



We will both attend a training over the summer to learn about maintenance from Trout Unlimited. This is mandatory if we would want a tank.

Funding

- This program is **FULLY FUNDED** by the Donegal Chapter of Trout Unlimited

- What is provided?
 - 55 gallon tank
 - Chillers
 - Eggs
 - Food throughout the entire year
 - Any other gear needed with the tank or fish



Trout Unlimited and Schools Involved

- Donegal Trout Unlimited sponsors 17 classrooms in 14 schools in Lancaster County
 - Doug Masser (PVHS)
 - Lampeter Strasburg
 - School District of Lancaster
 - Ephrata School District
 - Conestoga Valley
 - Manheim Central



Timeline

Theme	Theme Duration*
Watersheds (pre aquarium set-up activities)	Begin implimenting soon after school starts
Aquarium Set Up and Start Up	10 days Tank running 30 consecutive days prior to egg arrival in November
Egg Arrival, Incubation, and Hatching	5-15 days
Fry to Fingerling	4-6 weeks
Habitat (fingerling life stage)	4+ weeks
Fish Culture & Fish Management	4+ weeks

Timeline

Trout Life Cycle

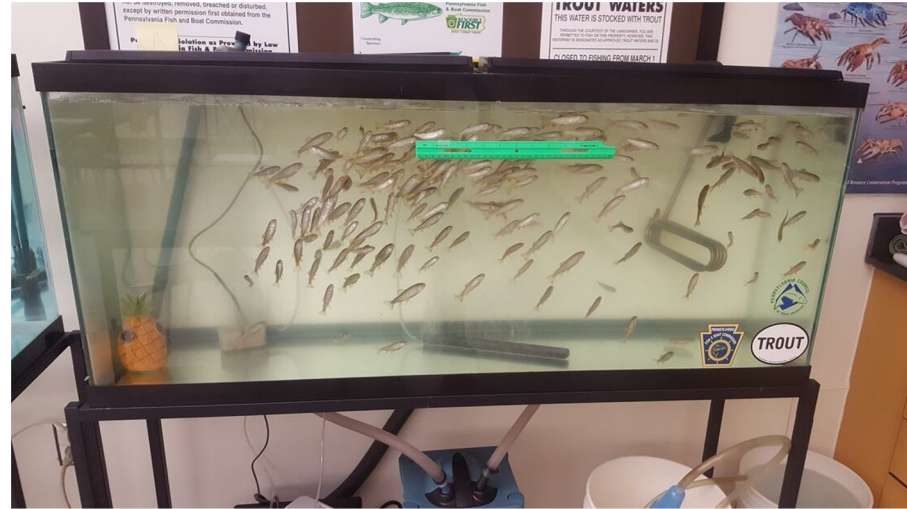
Trout Life Cycle Stages	Duration
Eggs (eyed)	5-15 days
Hatching	2-3 days
Yolk sac absorbed/swim up fry	1-2 weeks
Fry to fingerling	3-4 weeks
Fingerling	4+ weeks
Release date	Anytime between April to May

§ Fry = fish less than one inch

§ Fingerling = fish one inch or larger

Benefits

- Local watershed education
- Student involvement - 5th grade
- STEEL connections
- Community involvement
- All grade benefit
- Extension activities (ex. hydroponics)



What are we asking for?

- A dedicated space in both Paradise and Salisbury Elementary School for a tank
- A stand for the tank
- 5 Gallon Buckets for changing water of the tank and transportation

*Possible Transportation provided for Release Day (future details to be determined)