



Trout STEM Family Night

Lesson plan was developed in partnership with STEM Teacher, Ms. Laurie Witt, at Albert Harris Elementary and as a project of the Hands-On Environmental Science grant through the Community Foundation Serving Western Virginia, 2019.

What is a Trout STEM Family Night?

A Trout STEM Family Night is an evening planned for students participating in the Trout in the Classroom program (or learning about water quality and importance of natural resources) to investigate with their families in what parameters affect the trout's health as an indicator species. Families rotate through stations and participate in hands-on water quality testing while investigating what killed their trout. Families learn that temperature is the source of their trout loss at the end of this activity. This lesson plan could also be set up as a lab during normal school hours for students to participate in.

To start preparing -

Print out all of the necessary materials for advertising. Life cycle wheels, advertisement, family sheets, etc.

Print copies of all materials for each station. I found using one color of paper for each station to work the best this included station handouts and clues.

For your family night you will need the following materials:

Welcome table-

Scissors (remain at the Welcome table)

Pencils for each student

Yarn for badges

Hole punch for badges

Small aquarium or fish bowl to hold slips if you are doing a door prize

Fish slips for door prize

Door prize(s)

Station 1

Water from your trout tank (pH should be testing in normal range of 7). This station allows for hands-on water quality testing of pH. pH ranges from acidic to basic levels and trout thrive in a normal range. If the water is too acidic, 6 or below, or too basic, above a 7, the trout could die.

pH testing kits

Empty buckets to hold finished test water

Paper towels

Station 2

Water from your trout tank (ammonia should be testing in normal range of 0 to 0.25) This station allows for hands-on water quality testing of ammonia. Ammonia that is at high levels, above a 1, can kill the trout.

Ammonia test kit

Empty bucket

Paper towels

Station 3

Cups to hold water

Hot tap water (this is what is testing wrong, make sure your water is not within the correct range, get fresh hot water as needed) Trout need cold water to survive (between 50-55 degrees) so the water should be above 60 degrees. This station demonstrates thermal pollution.

Bucket for finished tests

Digital and standard thermometers

Paper towels

Station 4

Diluted Clorox water (teacher will hold the cup and waft the scent, students do not handle the diluted Clorox water) This station demonstrates chemical pollution in the water source.

Paper towels

Station 5

This station demonstrates litter pollution in our waterways and the importance of keeping pollution out of our waterways for the organisms, trout and all living creatures, to survive. Waterways are also a source of drinking water for humans.

Dishpans to hold water

Water

Objects to clean out of tank- possible items could be marbles, plastic figures, linking cube, teddy bear counters, etc.

Student materials from the Engineering Design Brief (*please request design brief and other planning materials from Krista Hodges at khodges@danriver.org, if you want to plan to Trout STEM Family Night or student lab*): plastic from grocery bags, sandwich bags, chenille stems, popsicle sticks, rubber bands, masking tape

Scissors (remain at Station 5)

Paper towels

Station 6

This station allows families to create their own trout life cycle wheels to take home.

Scissors (remain at Station 6)

Trout life cycle wheels (cardstock is a great option to print these on)

Brads

Clear tape for accidents when cutting