



College of Natural Sciences
Education & Outreach Center

Colorado
State
University

CSU EXPEDITIONS: STEM FRIDAYS



STEM Fridays are facilitated by CSU undergraduate students studying to become science teachers, mentored by EOC staff and CSU education faculty. The science content has been developed at CSU to give students a real scientific research experience in a real scientific laboratory. All content is tied to Colorado Science Education Standards and compatible with the Next Generation Science Standards.



Logistics

Field trips take place on Friday mornings anytime between 9:00 and 11:00 AM and last for ~90 minutes.

Schools are limited to **one** group of up to 30 students grades 4th through 12th per school year.

The CNS Education & Outreach Center will cover up to \$100 of the cost of a school bus **that you arrange**. An invoice from the school must be submitted to us after the trip for payment.

Please have your students bring their science notebooks.

Cancellations must be received three weeks prior to a scheduled field trip.

For more information, visit:
www.cns-eoc.colostate.edu/cnseocstemfriday.html

Topic Options

Anchialine Pools (4th through 12th grade)

Anchialine pools are unique coastal brackish water pools that only occur on the islands of Hawai'i. Over use of water has led to the depletion of the aquifers that keep these pools in balance. Students build physical models to learn how the hidden groundwater is vital to the survival of these culturally significant pools.

Get Critical! (6th through 12th grade)

How does information get from one place to another so quickly? In this research experience, we will conduct experiments with optical fibers to learn about reflection, refraction, critical angles, and diffraction. Students even get a chance to send text messages between groups!

Pico Pong (4th through 12th grade)

Explore the interaction between the virtual and physical worlds with this unique kit. You will learn how to code a simple game (Pong) in the Scratch programming environment and then use a Pico sensor board to collect a variety of sensor data: light, pressure, flex, sound, and position. You will then use these data to control the game paddles. All on a Raspberry Pi mini computer!

Really Ancient Fossils (6th through 12th grade)

Learn how paleontologists uncover past events that led to the fossilization of a community of sea creatures millions of years ago. Students will excavate a model rock formation, make a map, record their observations in a science notebook, and compare their observations to reference materials.

Small Fish, Big Questions* (6th through 12th grade)

Guppies you see at the pet store come in a wide variety of colors and fin shapes. In this research experience, we will compare pet store guppies to guppies from high and low predation environments in Trinidad. Through careful observation you will get a feel for how biological changes over time occur. Although these guppies are tiny, they are helping us solve some of the biggest questions in science today!

Soil Carbon (6th through 12th grade)

Explore how carbon moves through the environment as you analyze three soil samples from different areas of the 2012 High Park Fire. It is your task to determine which of the samples was intensely burned, moderately burned, or unburned.