

# Get Critical! STEM Kit



**H**ow 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!

**Big Concepts:** reflection; refraction; density; critical angles; diffraction; and wavelengths of light

**Scientific Inquiry Skills:**

- Measuring critical angles
- Data collection and graphing
- Use of spectroscope
- Use of science notebook

**Grade Levels:**  
6th grade and up

**Number of Kits per Set:** 15

**Student Group Size:** 2

**Time Required:** 90-120 minutes

**Web Page:**  
<https://www.cns-eoc.colostate.edu/stem-kits/get-critical/>

**Funding:** Xcel Energy Foundation

**Faculty Collaborators:**  
Dr. Kaarin Goncz and Dr. Martin Gelfand

These kits are used for STEM Friday field trips, teacher workshops, and are available through the NSEOC Lending Library.



College of Natural Sciences  
Education & Outreach Center



Colorado  
State  
University

## **NS Education & Outreach Center Mission Statement**

The Natural Sciences Education & Outreach Center is an incubator for innovation in STEM education. We serve both CSU and 4th-12th grade students and faculty through a variety of programs. Many of our programs focus on authentic scientific research experiences that aim to promote enthusiasm for the STEM disciplines, especially for students traditionally underrepresented in these fields. Particular emphasis is on finding new ways to promote scientific creativity and innovation, attributes essential for global challenges in the 21st century.

Learn more:

<https://www.cns-eoc.colostate.edu/>

## **STEM Fridays**

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

Learn more:

<https://www.cns-eoc.colostate.edu/stem-friday/>

## **STEM Kit Lending Library**

The NSEOC has a variety of STEM materials and kits available for week-long loans by classroom and informal educators. Please visit the following link to see which kits are currently available.

Learn more:

<https://www.cns-eoc.colostate.edu/stem-kits/>

*Discovery Begins Here*