

STEM Learning Kits are available through Colorado State University Extension services of the Tri River Area (Mesa, Delta, Montrose, & Ouray Counties). The below kits are currently available for check out in TRA Counties. Anyone (Teachers, Parents, Non-Profits, Etc..) may check out kits.

All kit requests can be made through our online Google Doc form. You can find the form on our website or by clicking the link [HERE!](#) Additional questions about kits or STEM programming can be directed to TRA STEM Agent Stephanie Lamm at Stephanie.Lamm@colostate.edu.

Important Information before checking out STEM Kits.

- There is no cost to borrow a kit unless it is not returned. We request that you restock the inexpensive consumable supplies. Please inventory all items when you repack the kit for return to your County Agent. Let agent know what has not been restocked.
- We will do our best to provide the kit or equipment on your preferred dates, however **kits loaned out on a first come, first booked basis.**
- Some kits are housed out of county. Please note **additional time may be needed to transport kit to requested county of event!**
- Kits loaned out for a maximum of 4 weeks, but we ask you please return it as soon as you're done using kit. We may be able to accommodate you if you would like to borrow a kit longer.
- If anything is missing or broken, please inform us immediately so we may replace it before use.

Kits contain most, often all, activity supplies. We ask that before returning kits, users complete the provided kit inventory, replace consumable supplies (if you have the funds to do so), and make note of any missing, broken, or un-replaced supplies. Kit feedback is always welcome!

Be sure to view our other great STEM resources including:

- Local Facebook Page: [STEM/k12 Programs - TRA Extension](#)
- Local YouTube Page: [STEMin with Steph](#)
- TRA Extension Website: [STEM Pages!](#)
- STEM Agent's Blog: [\(STEM\)in with Steph](#)
- STEM Activities: [Listing of STEM Activities](#)

Please contact us at the info below if you have any questions! Keep on STEMin!

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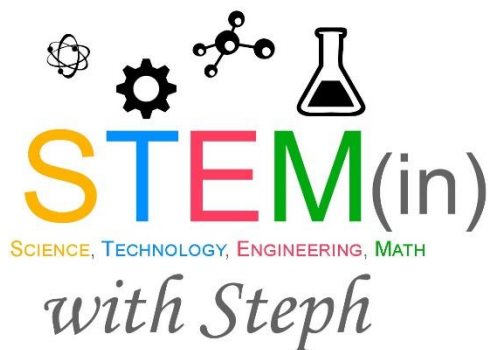
STEM Kit Clickable Listing

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STEM Kit Descriptions

All About Birds - (K-8th Grades): Encourage students to learn about the birds around them! Students will explore local birds in the state, will learn to ID birds by multiple means, make silhouette posters, and create bird feeders to observe and journal about the birds around their schools or homes.

Brain Teasers - (All Ages): Brain Teasers contains over 30 fun, hands-on activities that tickle the brain and challenge the mind. Challenges can be enjoyed by all ages (adults too!) and range from mathematics to physics. Kit includes most supplies and puzzle solving instructions for the kit coordinator. Its interactive nature makes it a great demonstration kit for large events such as Open Houses or Expos.



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Dream Machine (Growing Fields) - (Pre-3rd Grades): Kit 2 in the 4 part series of Growing Fields. What does two-dimensional mean? What does three-dimensional mean? Are the names of shapes different if they are two-dimensional or three-dimensional? How can a piece of paper become a cube? Everything, even complex objects, are constructed from common shapes.

This kit explores shape, dimension, and geometric relationships and encourages youth to identify the shapes around them and use shapes to create their own "Dream Machine".

Growing Field kits are sponsored by National 4-H and were developed as a tool for high school students to mentor younger youth. They each include a story discussing life values and STEM concepts presented for some hands on fun!

Embryology (Hatching) - (1st-5th Grades): This kit enables teachers to bring the science of embryo hatching into the classroom. Kit includes five lessons in chicken embryology and provides materials for in the classroom chicken hatching. Students are introduced to an incubator, learn the parts of an egg and how to candle, what to do once chicks hatch, how to create their own chicken farms, and explore careers in the poultry industry.

Embryology kits are available only to Tri River Area counties at this time. Lesson plans are available to anyone upon request.

Entomology Display Box - (All Ages): The entomology box is for display only (Not to be opened or handled by students). Display can be checked out for classroom use, open house exhibition, or expos. It contains a variety of beautiful and unique preserved insects.

Field of Dreams (Growing Fields) - (Pre-3rd Grades): Kit 3 in the four part series of Growing Fields. In this kit, youth continue to explore their dreams by learning about the "Seeds of Success". They read the Field of Dreams book and learn the importance of preparing for action.

Lessons include growing plants from seeds, writing down observations as they develop, learning tricks to rid their minds of negative thoughts, and making a mind map.

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Glo Germ (Handwashing) - (K-5th Grades): Learn about Germs! This kit allows educators to teach youth all about bacteria! Kids will learn how good handwashing techniques can help reduce exposure to potentially harmful germs! Kit includes Glow Germ Paste, Dark Light, and Dark Box.

****KIT Expansion!** Contact us about the potential to expand this kit to multiple lessons and activities! We are looking at future possibilities of including: Growing Bacteria, Bacteria Under the Scope, What's the Worst?, How Disease Spreads, and much more!!!!

Here Comes the Sun - (K-2nd Grades): This kit contains seven lessons. Students explore shadows changing over the course of one day, practice reading a thermometer and collect temperature data to build a classroom graph, explore the sun's impact on plants through scientific experiments, and envision being a scientist!

Invertebrates (Entomology) - (K-12th Grades): In this kit, youth begin the fascinating journey into invertebrate zoology with specific equipment and supplies. They will explore not only the anatomy and classification of arthropods, but also beneficial/detrimental invertebrates, capturing/preserving invertebrates, and exploring arthropod behavior.

Light Fantastic - Physics of Colors in Light: Explore the physics of color with different types of lights and bulbs.

Motion Commotion - (K-2nd Grades): This kit contains six lessons to explore how balls follow the 1st Law of Motion: Inertia, the 2nd Law of Motion: $F=ma$, the 3rd Law of Motion: Action/Reaction, how energy transfers from one object to another, and examines careers in physical science.

Moving Makers - (K-2nd Grades): This kit contains four lessons that explore force and friction, and includes a career connection lesson. Explore how objects move by speed, how friction changes movement, how different objects move, and science related careers.

Soil Pigments - (K-5th Grades): This kit explores the exciting history of color! Learn about how humans have discovered different colors made from many natural pigments over the centuries! Explore the cave drawings of the ancients and learn how to make your own color paints from naturally found pigments!

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Soil Science - (2nd-HS Grades): Soil is the foundation to plant growth, but not all soils are alike. There are different particle sizes in different types of soils. In this kit, students will collect different samples of soils from around the area and separate the layers and particles. They also perform a survey of the areas soils collected from and journal what soil combinations serve as the best for plant growth.

Soil, It's Alive! - (MS/HS Grades): Most nutrients in the soil are not in a plant available form. Soil organisms convert soil nutrients into a form that is available to the plants. Many plants "leak" or exude sugars (and other compounds) into the soil to feed soil organisms in exchange for plant available nutrients. The students will play the roles of sun, plant leaves, plant roots, bacteria, fungi, protozoa, and nematodes. The soil organisms will try to obtain "solar energy" in the form of candy (starbursts) in exchange for nutrient candies (tootsie rolls).

The organisms will play different roles in exchanging nutrient candy for solar candy. During the game, the soil organisms will have to adapt to changing soil conditions when the Queen/King rolls the soil condition dice!

The lessons explore the evidence outcomes and one career connection lesson that includes:

- Classify characteristic traits and players in the soil food web
- Examine the behavior of soil organisms in different soil conditions
- Explore the needs of plants through soil food web
- Discover a few careers in soil science

Solids, Liquids, and Gases, Oh My! - (1st-2nd Grades): This kit includes five lessons that explore state of matter and phase changes, difference between mixtures and reactions, and the different states of chemicals. The career connection allows youth to envision being a chemist.

Staying Alive - (1st-2nd Grades): All life is classified into a hierarchy system! This helps scientist's sort life into smaller and more manageable groups of organisms. In this kit, youth will learn to list characteristics of an organism and use those different characteristics to separate organisms into simpler and smaller groups. Students will learn that vertebrate life is very small when compared to invertebrate life and will complete multiple activities to strengthen this knowledge.

There's No New Water: An in depth look into water and where it comes from.

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Treasure Island (Growing Fields) - (Pre-3rd Grades): Kit 4 in the 4 part series of Growing Fields. All about buoyancy! Does wood float? Does metal float? Does the shape help it float? How much weight can an object carry on water?

Youth will experiment with different items to explore the concept of buoyancy and will design and build a floating object of their own they can test in the water. In addition, they learn from reading the Treasure Island book that each person is responsible for the direction, and success, of his/her own life.

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Water Pollution - (1st-5th Grades): Help students learn the importance of keeping our water clean. Students learn about clean water, how much freshwater is available on this planet, and practice explaining where water pollution comes from through hands on crafts and demonstrations.

Water Streamflow/Benthic/Wader - (2nd-5th Grades): Can we tell if a water source contains pollution based upon creature species and population? In this kit, students explore the world of benthic macroorganisms and their importance to determining water quality. Students will test water flow and learn to calculate Cubic Feet per Second (CFS), capture and inventory macroorganisms around and in a water source, take samples of water for microscopic evaluation, and conduct chemical analysis of the water quality. Six fully developed lessons are included along with most supplies, including water waders.

Weather Bear - (1st-3rd Grades): Does the weather ever change? Have you noticed? Why is it important to watch what the weather is doing? This fun kit explores how weather changes over the seasons and gives kids a fun, visual way to view and report on the weather daily to their class. Weather bears are used for daily dress-up and can be used by students to help show the daily weather prediction.

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