

# Tri-River Area

## STEM Kits



**Here comes the Sun-** (K-2nd Grades)- specifically meets Kindergarten Earth Systems Science Standard 1: The sun provides heat and light to Earth. This kit contains 7 lesson. 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!

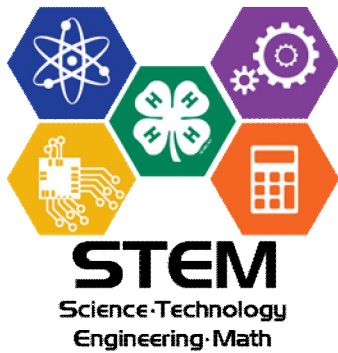
**Invertebrates-** (K-12th Grades, entomology emphasis)- In this kit, youth begin the fascinating journey into invertebrate zoology with the equipment and supplies. They will explore not only the anatomy and classification of arthropods, but also beneficial/detrimental invertebrates, capturing/preserving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

**Lego Robotics Mindstorm NXT-**(3rd-12th Grade)- These kits are a “kid friendly” way to explore technology, math, and programming. This program teaches robotics, GPS, GIS technologies through building/programming robotics, navigation, and mapmaking activities utilizing Legos Mindstorm NXT robotics kits and Garmin GPS units. For this program students need to have access to computers.

**Motion Commotion-** (K-2nd Grade)- Meets 2nd Grade Physical Science Standard 1: Changes in speed or direction of motion are caused by forces, such as pushes and pulls. This kit contains 6 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 Grade)- Meets Kindergarten Physical Science Standards1: Objects can move in a variety of ways that can be described by speed and direction. This kit contains 4 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 career envisioning him/herself in a relating career.

**More on page 2!**



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**Solids, Liquids, Gases, Oh My!-** (K-2nd Grade)-Meets 1st Grade Science Standard1: Solids and liquids have unique properties that distinguish them. This kit includes 5 Lessons that explore state of matter and phase changes, difference between mixtures and reactions, and the different states of the chemicals. The Career Connection allows youth to envision being a chemist.

**Soil, It's Alive!-** Meets Standard 2 for 6th grade and High School- Plants need nutrients to photosynthesize and grow. 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 include:

- 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

### **Important information:**

- 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 pack the kit to return to your County Agent and let them know what is not restocked.
- We will do our best to provide the kit or equipment on your preferred dates, however this is a first come, first booked system.
- Kits are loaned for a maximum of 4 weeks, but please return it as soon as you are done using. We may be able to accommodate you if you would like to borrow them longer.
- If anything is missing or broken, please inform us immediately to replace it.