Updated 11/20/25

STEM Kits available for FREE check-out at NPC

STEM is more than just a grouping of subject areas. It is a movement to develop the deep mathematical and scientific underpinnings students need to be competitive in the 21st-century workforce.

Here's a brief rundown of the STEM acronym:

Science: *The study of the natural world.*

Technology: *One surprise—the STEM definition for technology includes any product made by humans to meet a want or need. (So much for all technology being digital.) A chair is technology; so is a pencil. Any product kids create to solve a problem can be regarded as technology.*

Engineering: *The design process kids use to solve problems.*

Math: *The language of numbers, shapes, and quantities that seems so irrelevant to many students.*

- All curricula include lessons and activities which are aligned with Arizona State Standards
- and Common Core ELA Standards and can easily be linked to classroom curriculum.
- State Standards are listed at the end of the description list.

- ***Most of these kits are designed for a class size of 25 students.***
- ***These Primary Kits are smaller and take less time than the Intermediate Kits.***
- ***You may want to consider adding a similar kit to fulfill a larger lesson plan.***

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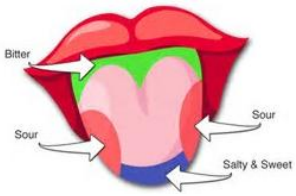
Intermediate Grades 4-8

Please pardon our dust, indicated kits are under construction.

Full descriptions available on the pages that follow.

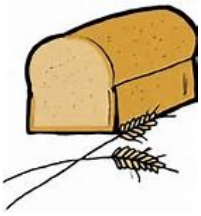
Primary Grades 1-3

Are you a Supertaster? – A2



Explore the biology of taste. Find out just how unique you are with this activity examining the sense of taste and exploring the chemistry behind cooking and eating.

Fungus Among Us – A3



You like to eat bread, right? Me too! A very important ingredient to bread is a little living fungus called yeast. Yeast can be found in many different places, even on fruit! In this kit, we will capture and grow wild yeast!

Bird Beaks – A15

Find out how bird's beaks are adapted to their diet. Why are different shapes better suited for certain foods? Try your hand at eating like a bird!

Boot camp – A4

Sweating is a means that humans and other animals developed to cool themselves down by releasing water from their bodies. This activity encourages participants to work up a sweat while exploring the water cycle and getting fit.

Cool Crystals – A5

All living and non-living things are made up of tiny building blocks called atoms and molecules. When atoms or molecules are arranged in a regular pattern or ordered arrangement they can form a crystal. Participants will explore the chemical and physical properties of everyday crystals by growing a crystal snowflake. **Recommended to go with The Curious Chemist kit.*

Crack the Code – A21

Fun and interactive puzzles and riddles to stretch the brain. Use deductive reasoning and problem solving as you work collectively.

(Kit Under Construction)

Primary Grades 1-3

Rot 'n Roll – A16

Soil is made of many layers called horizons and is a mixture of solids, liquids, and gases such as sand, water, and oxygen. This activity will explore the physical characteristics of soil and its importance in agriculture.

Desert Webs – A6

All living things need to eat! Since this is such a huge part of daily life for all living things, it's important to learn about! Learning about food webs helps us understand the relationships between living things and how we are all connected. In this kit, you will explore the food chains and food webs of the desert environment!

Dino Hunt – B5

Embark on a virtual expedition with Eleanor Digby, a paleontologist. Find fossil clues at dig sites, work as a team, and become a Dino Hunter!

Family Engineering – A7

Participants will combine their engineering and architecture skills to design and build a desert survival shelter that will hold their entire family!

Feed the Birds – A18

Reduce, Reuse, and Recycle! Participants will learn about recycling and architecture while designing and building a bird feeder from recycled materials. **Recommended to go with Cool Critters STEM curriculum.*

Primary Grades 1-3

Good Eats for Owls – A1

Barn owls enjoy eating rodents and other pests which can be very useful tools to farmers! Explore how much work owls do for pest elimination by examining the contents of owl pellets.

Math Games – B8

Explore a magnetic construction set for brain development that features geometric shapes. Participants will build 2-D and 3-D shapes such as balls, boats, helicopters, and much more! This set also provides a visual fractions lesson that makes learning how to add and subtract fractions easy! Build and explore geometric shapes. Participants will investigate 2-D and 3-D symmetry, patterns and fractions, quadrilaterals, and much more!

Measuring Mania – A8

Have you ever wondered how tall a tree was, or how to figure out the height of a pole or building without using a ruler? Participants will learn how to use inclinometers, an instrument for measuring angles of slope (or tilt), elevation or depression of an object, and use it to measure the height of something really tall! **Recommended to go with X Marks the Spot or Campfire Science Kits.*

Petroglyphs – A9

Petroglyphs (also called rock engravings) are designs and pictures created by removing part of a rock's surface by picking or carving. Archeologists believe that stone hammers and other stone tools created the petroglyphs found in Arizona. Participants will create petroglyphs that tell future archeologists in 2112 about life in the 21st century.

Primary Grades 1-3

Pretty Pollinators – A22

Pollinators affect 35 percent of the world's crop production, by increasing the output of 87 of the leading food crops worldwide. Gain an understanding of how pollinators behave and get a chance to examine hummingbird behavior.

Rubber Band Cars – A19

Design and build a rubber band car and transform potential (stored) energy into kinetic (motion). Experiment with ways to make the car go faster and farther.
(Kit Under Construction)

Keychains and Sunrays – A14

In this kit, we will utilize the sun to create art using various materials from nature. This activity allows participants to explore the many patterns found in nature while using UV light to explore chemical structure. We will also make keychains using UV detection beads that change color in the sun! Learning how to observe, collect and analyze data are skills that are crucial to STEM careers. Experiment with power of the sun's solar energy and learn about the strength of UV light

Solar Splash – A13

Water is a key ingredient for all life, and so it is smart to focus on ways not to waste or pollute it. This activity will provide a simple, energy efficient method that can be used to increase the amount of clean water available by building a solar water distiller.

Sport Science – B11

Embark on a 12- day sports science enrichment camp. Students will become investigators as they explore the differences in how a wide range of balls look drop and bounce, unleash the parachute to discover what juggling, skydiving and drag racing all have in common, and so much more!

Primary Grades 1-3

Traveling Sound – A10

Did you know that sound not only travel through solids, it travels even better than it does through air! In this set of activities, we will explore sound traveling by making string telephones, spoon gongs, and using water to ***see*** soundwaves!
**Recommended to go with Rhythms & Waves Kit.*

Kinetic Quest – A11

Learn about how energy changes from one form to another and discover earth-friendly ways to harness and transform energy. Design a motor that creates motion by converting different forms of energy into mechanical energy**.**

Wiggles & Stings – A17

Investigate critters that can be found in Arizona. What is so cool about dirt? Who glows in the dark?

Intermediate Grades 4-8

Mini Creepers, Mighy Clues - B4

Oh no! Forest rangers are sending reports that the fish in the lakes are dying! They need a scientist to come and test the quality of the water and find out what is going wrong. In this activity, students will learn how to assess water quality by studying macroinvertebrates. Let's save the lakes!

The Curious Chemist – B12

Why do mentos and soda react to each other the way they do? How is butter made? Can you make a rainbow dance in milk? What kind of chemical reactions can we make with only three ingredients and a bag? Students investigate these questions and learn the mysteries of chemistry behind it! 2-4 hours curriculum

Move Like a Beast - A12

Have you ever noticed that animals move differently than humans? How does the way a frog is built make it jump so well? What about the way a cheetah moves enables it to run so fast? In this kit, you will investigate the locomotion of animals and see if you can move like one! 2 -4 hours curriculum

Tracks & Scats – B2

Do you ever wonder how hunters or scientists track animals? Through their tracks and scats! Hunters use these clues to hunt, while scientists use these clues to study the animal's behavior, diet, and migration patterns. In this kit, you will try to identify which tracks and scats belong to which animal. Participants will also learn how to make a casting of an animal print, just like scientists do in the field!
2 -4 hours curriculum

Built to Bear – B6

Participants will apply their science and engineering skills while discovering the art of bridge design. They then take the basic concept of a triangle and build a human dome that can take them to outer space or to Biosphere 2. Creativity and innovation will strengthen participants' understanding of compression, tension, bending, shear and torsion while having fun working as a team. 2 – 4 hours curriculum

Discovery & Invention – B7

Participants are introduced to the design process through the exploration of parts found in robots, gizmos and gadgets. They will design and engineer a device with parts capable of motion and build a roller coaster! 2-4 hours curriculum

Intermediate Grades 4-8

Engines & Rockets – A20

Design, build, decorate, and launch your own rocket!

Jr. Architects – B10

LEGO® bricks are great… but have your tried Keva Planks? Keva Planks are a popular phenomenon that has captivated the minds of young builders throughout the nation! In this curriculum, participants will explore technological concepts while designing and building structures found around the world, then use their new knowledge to create a roller coaster that defies gravity. Or does it? These activities will build problem solving and teamwork skills while focusing on scientific concepts such as balance, velocity, momentum and force. 1-2 hours curriculum

Lemon Lab – B3

What makes lemonade sweet? What makes lemonade sour? Can you replicate the flavor of lemonade without lemons? Students will engage in fun chemistry activities and use their scientific findings to invent their own lemonade. They will discover that they can find science everywhere, even in lemonade! 1-2 hours curriculum

Let's Fly a Kite – A23

Where did kites come from? How did the Wright brothers use kites to help them invent the first plane? In this kit, we explore these questions and make our own kites! 1 – 2 hours curriculum

Rhythms & Waves – B13

We experience sound every day, but have you ever wondered what sound is? In this kit, we will learn what sound is, how it travels through mediums such as air or water, and experiment with pitch. 2-4 hours curriculum

Intermediate Grades 4-8

Start Your Engines! – B9

What components make engines go? Explore magnets, build circuits, make light bulbs light up, and experiment with simple motors to learn concepts that engineers use to make engines go! 2 – 4 hours curriculum

X Marks the Spot – B1

For centuries explorers have used navigational tools and scientific concepts to travel across the world to discover new lands and uncover hidden treasure. These explorers were the forefathers of the marine, oceanographic and navigational engineers of today. Participants will travel back to 1715 and search for treasure while exploring the seas and skies with 21st century technology! They will learn how to navigate using the stars and GPS technology. 2 – 4 hours curriculum

Primary Grades Arizona State Science Standards:

AME – Architecture, Math & Engineering
BES – Biology & Earth Science
CP – Chemistry & Physics

Intermediate Grades Arizona State Science Standards:

Grade 1 (AME) 1.P2U1.1
(BES) 1.EU1.5, 1.L1U1.6, 1.12U2.7, 1.LU1.8, 1.L4U1.10
(CP) 1.PU2U1.1

Grade 2 (AME) 2.P2U1.1
(BES) 2E1U1.4, 2.E1U1.5, 2E1U2.6, 2E1U3.7, 2.E2U1.8, 2.L.2U1.9, 2.L2U1.10
(CP) 2.P1U1.1, 1.P1U1.2, 2.P4U1.3

Grade 3 (AME) 3.PU2U1.1
(BES) 3.L1U1.5, 3.L1U1.g, 3.L2U1.7, 3.L2U1.8
(CP) 3.P2U1.1, 3.P2U1.2, 3.P4U1.3, 3.E1U1.4