



4-H STEAM KITS

The following kits and curriculum are available for your club or group to check out for program enrichment. Limited staff support is available to help guide your instructor through the program. Please, contact your local 4-H Program Coordinator with plenty of lead time to ensure the curriculum or kits are available for your program. If there are kits you are looking for that are not offered here, let us know what your needs are and we will try to accommodate.

STEAM Kits: Most are 1-2 hour activities to allow time for improvements. Some kits may require additional supplies.

Bubble Bonanza – Engineering bubble wands and observing the science of bubbles – part of activity to be done outside - (Science/Engineering - Grades 2 and up)

Catapults - build a catapult prototype with spoons and clothespins to project food to stranded animals during flooding, can be tested inside or outside (Engineering – Grades 3 and up)

Compass/Orienteering – Learn to use a compass, read a map and other introductory orienteering skills. (grades 4 and up)

Eco Bots – Design a small toothbrush robot that can cleanup a spill (Engineering & Science –Grades 3 and up)

EV3 Lego Robotics & EV3 Lego Robotics Expansion – multiple days, computers required, 5-6 hours (Technology/Engineering - Grades 6+)

Extracting DNA - Extract and observe real DNA from strawberries using common household materials to introduce the structure of cells and the fundamentals of genetics in a hands-on way (Biology, Grades 4–8).

Everywhere you Look—Environmental Science activities: Learn about Ecosystems, Pollination, Seeds, Soil, Wetlands, Water conservation, Watersheds, Weather and Climate, Trees, Packaging, Natural Resources, Sounds, Edible Plants, Carbon Cycle. The kit allows up to 20 hours of STEM programming. Some activities can be done in classroom, some activities can be done outside. 1-20 hours—Science (ages 7-14)

Growing Up! Vertical Gardening– Creating a vertical garden using recycled and other containers to optimize conservation of water– 2 hours (Engineering & Science - Grades 5 and up)

Foam Rockets – Create a foam rocket and observe angles and trajectory 1 hour – work on inside, can be launched inside or outside (Engineering - all ages)

How the Cookie Crumbles - Learn about protecting your cookie from destruction, engineer a protective covering from water and damage from breakage and test it – 1 hour (Engineering/Science - Grades 3 -8)

Junk Drawer Robotics – Kit filled with all kinds of building materials that lasts 4-6 hours or more. Kits available: Set 1—Getting Things Rolling, Set 2 -Parts is Parts and Set 3—Watt’s Up Electricity (Engineering - all ages)



Kaleidoscope - Design a Kaleidoscope 1 hour (Science – grades 3-6)

Keva Planks – Youth design towers or structures using Keva Planks 1 to 2 hours (Engineering - all ages)

Lego Spike - A hands-on STEAM learning tool designed for youth to develop robotics, coding, and critical thinking skills (Engineering/Robotics – grades 5 and up)

Makey-Makey - a circuit board that youth code with Scratch programming to make a video game (Computers required - 1-2 days (Engineering/Technology- grades 5 and up)

Maps & Apps - Designing a park using mapmaking skills (Engineering - Grades 4 and up)

Marble Roller Coaster Engineering - Whose roller coaster rides the longest? 1-2 hours (Engineering/Math - Grades 3 and up - could modify for younger kids with ping pong balls)

Mars Base Camp Challenge - Participate in a series of hands-on missions to design, build, and problem-solve like astronauts preparing for a human Mars landing, integrating teamwork, critical thinking, and real-world STEM challenges (Engineering/Science/Technology, Grades 5–8).

Marshmallow Engineering – Create structures using toothpicks & marshmallows (Engineering/Math - all ages)

Nutrition/Cooking – A 6 class series teaching basic nutrition and cooking skills (Health/Science grades 3-4, can be adapted for older kids)

NXT LEGO Robotics - multiple days for build, computers required - we provide software on USB -5-6 hours (Engineering/Math - Grades 4+)

Ornithology – Learning how to observe birds in their native habitat some activities outside (Science – Grades 4 and up)

Heads Up! Paper Airplanes: Building, testing and Improving paper airplanes - 1 hour (Science, Engineering - Grades 4 and up)

Power of the Wind –Designing a better pinwheel (Engineering – Grades 3 and up)

Ready...Set...Go! – Using recycled materials, create a new game that can be played inside on a floor or tabletop or outside 1-2 hours (Engineering/Math – Grades 3 and up)

Rockets to Rescue –Youth create a stomp rocket that delivers food in emergency situations – activity to be done inside and launched outside -1-2 hours (Science/Math/Engineering – Grades 3 and up)

Rubberband Helicopters - Build a simple paper helicopter powered by a twisted rubber band to explore how energy storage, lift, and rotation affect flight time and motion (Engineering/Science, Grades 2 and up)

Shake Things Up! Earthquakes – What happens during an earthquake and how to engineer earthquake safe structures (Science/Math/Engineering – Grades 6 and up)



Spaghetti Engineering - Towers Designing a structure using pasta noodles, mini marshmallows and masking tape (Engineering/Math - Grades 3 and up)

Sphero – Robotic ball that is programmed to move in 360 degrees using Sphero app with drag and drop programming with Scratch- iPads are not provided. 1-2 hours (Engineering/Technology – grades 2 and up)

Soda Straw Rockets—Engineering a rocket that can be launched from a straw (Science, Math, Engineering—ages 8+)

Touchdown! – Design a shock absorbing system for landing a vehicle to land – 1 hour (Science, Math, Engineering – Grades 4 and up)

UV Bracelets - Use UV-sensitive beads to visually demonstrate how ultraviolet radiation from sunlight works and to introduce concepts of sun safety and light exposure (Science/Health, Grades 3–6).

Viking Boats/Watercraft - Create a small watercraft that can float your pretzel person and transport small objects + race to see who will be the fastest can be tested inside or outside (Engineering/Math – all ages)

Water Bottle Rockets – Create a bottle rocket using water that will be launched outside (Engineering/Math/Science – Grades 2 and up)

WeDo Legos & WeDo Legos Expansion – First step robotics for those that haven't used Legos/Lego robotics – requires computers with Lego software (Engineering/Math - grades 1-5)

Wired for Wind – Create and engineer a wind turbine – some activities can be done outside -3 hours (Engineering/Math/Science - Grades 6 and up)

Have a suggestion for a future kit? Share your idea with us—we may already have something that fits, or we can create a kit tailored to your needs.

Contact:

Aspen Dobbins
4-H Program Coordinator
aspen.dobbins@wsu.edu
425-738-0105

WSU Extension programs and employment are available to all without discrimination. Evidence of non-compliance may be reported through your local WSU Extension office or to the WSU Center for Human Rights.