

Henrico County 4-H School Enrichment Programs

Topic Area: STEM

Strawberry DNA (kit)

Students will learn the building blocks of DNA and extract the DNA from a Strawberry by using proper measurements of substances. This activity also tests the group's ability to read and follow directions.

Science of Energy (kit)

This unit provides background information and hands-on experiments to explore the different forms of energy and how energy is transformed from one form to another. Groups of students master six stations, then teach others about the energy transformations at their stations. Teacher demonstrations are included to introduce the unit. Reinforcement activities are also included. The stations include equipment to teach transformations focusing on kinetic and potential energy, heat, light, motors, batteries, and electromagnetism.

Wonders of the Sun (kit)

Elementary students develop a basic understanding of solar energy through background reading and classroom activities. Hands-on activities demonstrate solar energy transformations into kinetic energy, thermal energy, chemical energy, and electricity. The kit includes a Teacher Guide, a class set of 30 Student Guides, and the materials necessary to conduct the activities.

Super Science STEM Instant Activities (kit)

This comprehensive pack features 15 engaging topics—including animal families, plant life cycle, clouds, volcanoes, sound, light and shadow—that support the Next Generation Science Standards. Each topic comes in a self-contained folder with an anchor text for building background knowledge, multiple copies of two hands-on investigations, companion reproducible recording sheets, management tips, plus links to an online video and bonus activities. A must-have resource for every classroom!

STEM-Twisted Fairy Tales (kit)

Combine the charm and whimsy of fractured fairy tales with solid science content, and what do you get? The STEM-Twisted Fairy Tales series and a reader reaction that's equal parts giggles, wonder, and "NOW I get it!" moments. Back matter features encourage further learning and discussion of key physics concepts.

Rain to Drain (kit)

Storm water has a huge impact on our communities. The "Rain to Drain" kit shows exactly what happens!

Junk Drawer Robotics (kit)

The activities of Junk Drawer Robotics make science, engineering, and technology engaging by encouraging youth to use the processes and approaches of science; the planning and conceptual design of engineering; and the application of technology in their personal portfolios of skills and abilities

Matter

Students learn about solid, liquid, & gas forms of matter; physical and chemical change (SOL Science K.4, K.5, 1.3, 2.3, 3.3, 5.4, 6.4, 6.5, and 6.6)

Topic Area: Agriculture

The Apple Orchard Riddle (kit)

Students will learn about apples and apple orchards—including how apples are harvested, how cider is made, and what the different varieties of apples are—while trying to solve a riddle. Students use their five senses to investigate apples and identify and model the parts of an apple.

Butter Lab (kit)

Students learn where butter comes from and the process of how butter is made while also conducting an experiment. Students will experience matter changing from liquid to solid. Reinforces **Science SOL: 5.1, 5.4 & 4.1**

Desktop Greenhouses (kit)

Students investigate the importance of light to plants by creating a desktop greenhouse investigation and exploring the process of photosynthesis.

Everybody Bakes Bread

Students learn about different types of bread eaten around the world. They also make bread in a bag, allowing them to practice reading and following directions and measure out ingredients.

Full of Beans: Henry Ford Grows a Car (kit)

Students will learn about the soybean and its many uses. They will also make plastic.

Let's Pop, Pop, Popcorn!

Students discover how popcorn is grown and explore the phenomenon of how popcorn pops.

Grafting the Red Delicious (kit)

Explore the production of apples and the process of grafting. Students will be introduced to several varieties of apples and learn that each apple was grafted specifically for its genetic traits and resulting characteristics. Students will complete a STEM challenge, by grafting their own apple tree.

How Did That Get in My Lunchbox?

One of the best parts of a young child's day is opening a lunchbox and diving in. But how did that delicious food get there? From planting wheat to mixing dough, climbing trees to machine-squeezing fruit, picking cocoa pods to stirring a vat of melted bliss, here is a clear, engaging look at the steps involved in producing some common foods.

How Many Seeds are in a Pumpkin?

Learn all about pumpkins, science, and math as "Mr Tiffin's" class figures out how many seeds are in a pumpkin.

I LOVE Strawberries!

Through Jolie's comical scrapbook-style journal entries, young readers will learn how she convinces the "old people" (aka her parents) to let her grow her own strawberries. Growing strawberries is a lot of work and responsibility, but Jolie is ready with the help of her faithful rabbit Munchy! Together they find out just how delicious, rewarding, and sometimes complicated it can be to grow your own food.

Plant Parts

Students describe the major parts of plants—roots, stems, leaves, flowers, and fruits.

Pumpkin Pie (kit)

Students learn how pumpkins are grown and their multiple uses. They use their math skills to measure ingredients to make pumpkin pie in a bag. (Grades 3-5)

Right This Very Minute

Students read *Right This Very Minute*—a table-to-farm book about food production and farming—and diagram the path of production for a processed product, study a map to discover where different commodities are grown, and write a thank-you letter to farmers in their local community.

Sunflower Life Cycle

Students observe the growth and development of sunflowers and illustrate the life cycle of the sunflower. Students will learn about photosynthesis through an interactive skit. (K.6, K.7, 2.4, 2.5)

Test Tube Hydroponics (kit)

Students investigate the importance of nutrients for plant growth and discover how plants grow without soil by growing and observing plants in a test tube hydroponic system.

Tops & Bottoms

Students describe the major parts of plants—roots, stems, leaves, flowers, and fruits and identify if fruits & vegetables are produced on the top or bottom of a plant.

Virginia Agriculture & Resources (kit)

Students will learn about Virginia's diverse agriculture and the resources it offers. Students will identify the different types of agriculture, illustrate the connections between farm and table, and discuss how local agriculture plays into our economy. (SOL Science K.11, 1.8, 2.8, 3.10, 3.11, 4.9, and 6.9)

Topic Area: Animal Science**Butter Lab (kit)**

Students learn where butter comes from and the process of how butter is made while also conducting an experiment. Students will experience matter changing from liquid to solid. Reinforces **Science SOL: 5.1, 5.4 & 4.1**

Embryology (kit)

Embryology is a hands-on, educational project that any Henrico County School can take part in. Youth learn the life cycle of a chicken, duck, or turkey from incubation to hatch!

Everything But The...Moo, Oink, Baa

Students will identify where commonly used household items come from (animals).

Goats, Grass, and... Uninvited Guests! (Kit)

Grass, Goats, and...Uninvited Guests! is a STEAM (science, technology, engineering, and agriculture, & math) curriculum focusing on small ruminant internal parasites, diagnostics, and treatment. This innovative, hands-on program uses goat or sheep stuffed animal models, group learning, and edible treats to teach the FAMACHA® system and hematocrit determination to diagnose anemia, dag scoring, body condition scoring, fecal worm egg counts, and treatment for worms.

Owl Pellet Dissection

Pellets are a record of what owls have eaten, and scientists can study them to learn more about the owl and the ecosystems in which they live. When kids dissect owl pellets, they can see and identify the tiny bones from that owl's meal, can learn about the owl's diet and place in the food web.

Tales of the Dairy Godmother

With the help of his Dairy Godmother, Chuck is taken—poof!—on a memorable and delicious adventure to a dairy farm. He finds out exactly where ice cream comes from and gains an even deeper love and appreciation for his favorite food. Youth will make ice-cream in a bag and design their own ice-cream flavor.

Winged Wonders (kit)

Winged Wonders is a butterfly curriculum developed by North Carolina 4-H that demonstrates the life cycle of a butterfly. Only offered in the spring.

Topic Area: Nature

Whatever the Weather (kit)

Students will learn about all the different types of weather, clouds and instruments used to track and record the weather. They will work cooperatively to mimic the sounds of a thunderstorm, monitor and record the weather, and review the water cycle.

Reduce, Reuse, Recycle (kit)

Students will learn how long trash takes to decompose and what we can do to be better using the 3-Rs. (SOL Science K.11, 1.8, 2.8, 3.10, 3.11, 4.9, and 6.9)

Pollinators

Students will learn what is a pollinator, how do pollinators work, and why do plants need pollinators.

Winged Wonders (kit)

Winged Wonders is a butterfly curriculum developed by North Carolina 4-H that demonstrates the life cycle of a butterfly.

Vermicomposting (kit)

Students will learn about worms and the importance of decomposers. Students can build a composting bin.

Topic Area: Health and Wellness

Consumer Education & Financial Literacy

Students will learn what it means to be a responsible consumer, how to manage their resources and spending. They will be able to identify wants vs needs and learn about budgeting.

Yoga

Students will identify the benefits of physical fitness and mental health. Students will improve flexibility, strength, balance, and focus through the performance of simple, sometime silly motions and stretches.

Other Topic Areas:

Character Counts (six lessons)

Students learn about the six pillars of character (Trusting, Respect Responsibility, Fairness, Caring and Citizenship) through a mixed platform of hands-on lessons, teambuilding activities, journaling, and videos. This curriculum can be adapted to any age.

4-H Demonstrations & Illustrated Talks and Public Speaking

Students will learn how to organize their ideas and thoughts to be able to create a speech. They will learn about voice projection, poise, self-confidence, and use of visual aids. Reinforces English SOL 6.1, 6.2, & 6.7; Reviews English SOL 5.1, 5.2, 5.3, 4.1 & 4.2

4-H Agents:

Carter Humphries: ccd296@vt.edu, (804) 501-5166
Laila Ampy-Thomas: lrampythomas23@vt.edu, (804) 501-5165

Mailing Address:

Virginia Cooperative Extension- Henrico County
P.O Box 90775
Henrico, VA 23273-0775

Physical Address:

6800 Staples Mill Road
Henrico, VA 23228



Virginia Cooperative Extension

Virginia Tech • Virginia State University

www.ext.vt.edu



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