



Yankton County
4-H School
Enrichment

2016-2017

A Teacher's Program Guide

4-H Meets the Needs of Teachers and Educational Professionals

This guide is meant to help teachers find outside resources through 4-H to help them with programming in or out of the classroom. The goal of 4-H School Enrichment is to provide educational programming to enrich and supplement the formal school curriculum. 4-H programs may be implemented in-school to complement classroom learning objectives, as part of afterschool programs, or 4-H may assist with special events such as field trips or school celebrations.

The 4-H programming focuses on 4 main areas of curriculum – Science (STEM: Science, Technology, Engineering, Math), Citizenship, Healthy Living, and Mentoring.

As 4-H professionals, we are able to plan lessons around your needs. From coming in once a month and focusing on a subject area like STEM, science, leadership, or citizenship, to coming to your classroom just once in a while or for a special event to coordinate with something you have going on such as making rain barrels for a school garden or a half day of LEGO Robotics, we are flexible to your classroom needs!

If any of these topics are of interest, or you have an idea for us, we encourage you contact us! 4-H Program Advisors and Assistants are your best local resource. Your community connection to them can provide you with more youth development opportunities than just the below school enrichment activities.

*Classrooms in Yankton County with 50% or more of their students receiving free or reduced lunches are eligible to receive free nutrition programming from Angela Knodel, SDSU Extension Nutrition Assistant. There are several different types of evidence based nutrition curriculums offered for grades K-12. Lessons last about 30-45 minutes and would take place once a week for 6-8 weeks from Angela Knodel, SDSU Extension Nutrition Assistant. If you have any questions please contact her.

Lauren Hollenbeck

4-H Youth Program Advisor – Clay, Union, & Yankton Counties

lauren.hollenbeck@sdstate.edu

Yankton County 901 Whiting Dr. Yankton, SD 57078 **Phone: (605) 665-3387**

Stephanie Siebrandt

Program Assistant

yankton.pa@sdstate.edu

Danielle McFarland

Administrative Assistant

yankton.county@sdstate.edu

Angela Knodel

SDSU Extension Nutrition Assistant

angela.knodel@sdstate.edu



South Dakota State University, South Dakota Counties and U.S. Department of Agriculture Cooperating is an Affirmative Action/Equal Opportunity Employer (Male/Female) and offers all benefits, services, education and employment opportunities without regard to ancestry, age, race, citizenship, color, creed, religion, gender, disability, national origin, sexual preference, or Vietnam Era veteran status

Programs by Grade Summary

Grade Level	Program	Page	Grade Level	Program	Page
PreK & K	iGrow Readers	10	Grade 4 (Cont.)	Drone Discovery	7
	Ag In The Classroom	6		Motion Commotion	8
	Character Education	9		Rockets to the Rescue	8
Grade 1	iGrow Readers	10		Maps & Apps	8
	Ag In The Classroom	6		Eco-Bot Challenge	9
	Character Education	9		Character Education	9
Grade 2	iGrow Readers	10		Health Rocks!	10
	Ag In The Classroom	6		Captain Cash	11
	Character Education	9		Junk Drawer Engineering	5
	Health Rocks!	10		LEGO Robotics	5
Grade 3	LEGO Robotics	5	Grade 5	"What's on Your Plate?" <i>Exploring Food Science</i>	6
	iGrow Readers	10		The Power of the Wind	7
	Ag In The Classroom	6		Science Discovery	7
	Science Discovery	7		Drone Discovery	7
	Drone Discovery	7		Motion Commotion	8
	Character Education	9		Rockets to the Rescue	8
	Health Rocks!	10		Maps & Apps	8
	Captain Cash	11		Eco-Bot Challenge	9
Grade 4	Junk Drawer Engineering	5		Character Education	9
	LEGO Robotics	5		Take the Lead	9
	Ag In The Classroom	6		Health Rocks!	10
	Science Discovery	7		Kid Quest	10

Grade 5 (Cont.)	Captain Cash	11	Grade 7 & 8 (Cont.)	Science Discovery	7
	Financial Champions	11		Drone Discovery	7
	Consumer Savvy	11		Motion Commotion	8
Grade 6	Junk Drawer Engineering	5		Rockets to the Rescue	8
	LEGO Robotics	5		Maps & Apps	8
	"What's on Your Plate?" <i>Exploring Food Science</i>	6		Eco-Bot Challenge	9
	The Power of the Wind	7		Character Education	9
	Science Discovery	7		Take the Lead	9
	Drone Discovery	7		Financial Champions	11
	Motion Commotion	8		Consumer Savvy	11
	Rockets to the Rescue	8	Grade 9 & up	Junk Drawer Engineering	5
	Maps & Apps	8		"What's on Your Plate?" <i>Exploring Food Science</i>	6
	Eco-Bot Challenge	9		The Power of the Wind	7
	Character Education	9		Motion Commotion	8
	Take the Lead	9		Rockets to the Rescue	8
	Health Rocks!	10		Maps & Apps	8
	Kid Quest	10		Eco-Bot Challenge	9
Financial Champions	11	Character Education		9	
Consumer Savvy	11	Consumer Savvy	11		
Grade 7 & 8	Junk Drawer Engineering	5			
	"What's on Your Plate?" <i>Exploring Food Science</i>	6			
	The Power of the Wind	7			

4-H MISSION

4-H empowers youth to reach their full potential, working and learning in partnership with caring adults.

STEM

4-H Robotics: Engineering for Today and Tomorrow

The 4-H Robotics curriculum uses robotics as a means of engaging youth and developing interesting and challenging experiences with science, engineering and technology. It also uses a variety of media and means to engage youth. It is a much broader project than most of the robotic curricula currently available, which often focus on a single platform or mode of delivery. As they participate in 4-H Robotics: Engineering for Today and Tomorrow, youth:

- Build understanding of basic science concepts related to robotics;
- Apply the processes of scientific inquiry and engineering design;
- Build skills in science, engineering and technology;
- Use the tools of technology to enhance their learning;
- Explore related careers; and
- Apply the skills and knowledge they are developing to new challenges.

Can be done individually or as a series.

Junk Drawer Engineering

Challenges participants to build simple machines from everyday items. In each module youth will learn about a different aspect of simple machines and then design and build using what they have learned. The machines become more complex and are used together as the curriculum builds. This 3-level curriculum emphasizes developing knowledge and developing skills, as well as applying what they have learned as participating youth design and build their own. Youth will use their notebook to record their learning experiences, designs and data from their investigations.

Ages 8-15

Time Required: 30 minutes - 2 hours per lesson

LEGO Robotics

Participants use LEGO Mindstorms NXT or EV3 kits to build structurally sound Lego Robots as well as how to program these robots using a computer/iPad. Youth start by building a robot using the provided instructions, then can move into creating their own. Students will explore team-work, collaboration, and leadership while learning to appreciate science and technology.

Ages 8-12

Time Required: 1.5 - 3 hours

Ag In The Classroom

Ag In The Classroom is a nationwide program designed to help students develop an awareness and understanding of our food and fiber system, and how agriculture impacts our daily lives. By helping today's youth understand the nation's most important industry, it will lead to a better informed public tomorrow — a public that is agriculturally literate. Students learn that the agricultural industry includes the production, processing, distribution and marketing of the products that we use every day. The program provides students with the knowledge of the agricultural industry, thereby allowing them to support wise decisions concerning agricultural policies. It is our goal to educate these future consumers. Most lessons have correlating content standards. Can be done individually or as a series.

- Students learn to appreciate their food and fiber system by understanding what it takes for our state and nation to produce agricultural products.
- Students understand the importance of agriculture to our economy and society.
- Students use "hands-on" experiences to gain an awareness of agricultural sciences and economics.
- Students are exposed to hundreds of career opportunities in agricultural supplies, services and sciences.

Ages 5-11

Time Required: 30 minutes - 1 hour per lesson

“What’s on Your Plate?” *Exploring Food Science Curriculum*

Hands-on activities focus on the building blocks of food science using chemistry, biology, and math in a “kitchen laboratory” setting. Learn why and how things happen in breads, muffins, eggs, fruit, vegetables, cheese, candy, and beverages. Conduct food experiments, collect and analyze data, practice sensory science (tasting), and investigate career opportunities. Can be done individually or as a series.

Ages 11-18

Time Required: 1 -2 hours per lesson

The Power of the Wind

The activities in *The Power of the Wind* involve youth in the engineering design process as they learn about the wind and its uses. Youth work as a team to design, create, build, and test a wind powered device. The device must solve a problem and requires the designers to balance options and constraints. Participants are guided to make adjustments and retest until the vehicle or machine solves the original problem. They learn about transfer of energy and using machines to make work easier. They explore properties of electromagnetism while using wind power. Some activities ask youth to use their research and analytical skills to examine national, state and local issues surrounding wind power. Skills such as teamwork, learning from others, planning, organizing and following through on a project are developed and utilized throughout.

Ages 11-14

Time Required: 1 -2 hours per lesson

Science Discovery

Making science fun is the goal of the lessons and activities included in this curriculum. Science lessons are presented to students in a fun, learn-by-doing approach. From basic science exploration activities, to more in-depth coverage, there are a variety of lessons including topics on: whales, geology, water conservation, recycling, trees, weather, spiders, oceanography, and space.

Ages 9-13

Time Required: 1 -2 hours per lesson

Drone Discovery

The 2016 National Youth Science Day engineering challenge, Drone Discovery, engages youth with fun and educational activities related to aerospace, flight, and unmanned vehicles. Drone Discovery simulates the experience of working with a real drone by providing a hands-on educational challenge that teaches youth about the basics of flight, remote sensing and real-world uses of drones. The kit contains unpowered foam gliders and plastic propcopters that simulate a drone experience. Everything in this kit can be safely operated indoors or outdoors. Students will learn about safety and regulation issues associated with drones throughout the course of the challenge. They can also learn about the regulations when flying a real drone via the FAA guidelines.

Ages 8-14

Time Required: Short version: ~1.5 hours OR Long version: ~ 2.5 hours



Motion Commotion

The 2015 National Youth Science Day Experiment, Motion Commotion, empowers youth to explore the physics of motion and distracted driving. This exciting activity will combine a speeding car collision and a distracted driving demonstration in a simulated activity that investigates the physical and human factors of motion. Youth explore the science of motion through the relationship of speed and stopping distance. The activity extends to real-world investigations on reaction time and safety, making connections to the dangers of distracted driving.

Ages 10-18

Time Required: 1.5 hours for the entire program



Rockets To The Rescue

The 2014 National Science Experiment, Rockets to the Rescue, provides young scientists the opportunity to explore how aerospace engineering can be used to solve real world challenges—such as food distribution in emergency situations—to make a positive impact in our world. Rockets to the Rescue captures many of the wonders and issues of modern day engineering. It emphasizes aerospace engineering, as it incorporates lessons related to math, science and physics. While it is a fictional scenario, it has real life parallels. Youth will apply lessons in science, math and physics to design and build an aerodynamic Food Transportation Device (FTD) that can deliver a payload to a desired target using different trajectories.

Ages 10-18

Time Required: 1.5 - 2 hours for the entire program



Maps & Apps

In an effort to continue to grow the next generation of STEM leaders, 4-H introduced the 2013 National Youth Science Day activity Maps & Apps. This curriculum is a set of activities that will turn youth into geospatial thinkers as they design and map their ideal park, use Geographic Information Systems (GIS) mapping to solve community problems, and contribute data about their community to the United States Geological Survey. GIS/GPS mapping has applications in numerous fields—from healthcare, national defense, environmental science, agriculture, aeronautics, and city planning. Explore how geography and GIS help people make smart decisions that improve lives, respect our natural resources, and make a positive impact in our world.

Ages 10-18

Time Required: 2.5 hours for entire program – may split into 2 or 3 sessions



Eco-bot Challenge

With the 2012 National Youth Science Experiment, *Eco-Bot Challenge*, youth enhance their engineering skills by learning to think like a robotics engineer, assembling their own robots, also known as Eco-bots, and control surfaces in order to manage an environmental clean-up. Youth then test the interaction between the Eco-Bot's environmental engineering design features and various control surface configurations to determine the most effective environmental clean-up solution for a simulated toxic spill. Youth explore how robots and technology can be used to preserve and protect the environment.

Ages 10-18

Time Required: 2.5 hours for the entire program



Citizenship, Healthy Living, Mentoring

Character Education

This is a variety of lessons that are built around six pillars of character that teaches young people to make sound moral judgments. Lesson topics vary from financial decisions, fast food, lying, bullying, violence, tolerance, attitudes, and more. The pillars are: Trustworthiness, Respect, Responsibility, Fairness, Caring and Citizenship. Character Education is designed to improve classroom environments and raise achievement scores by instilling strong characters in students.

Ages 4-18

Time Required: 45 minutes - 1 hour per lesson

Take The Lead

Increase leadership skills of youth to equip them for future leadership opportunities in adulthood. Students will learn qualities of leadership, communication skills, teamwork, decision making skills, resiliency, conflict resolution, creativity, and goal setting. Can be done individually or as a series of 11.

Ages 11-14

Time Required: 1 hour per lesson

Health Rocks!

Health Rocks! is a program meant to reduce youth tobacco, alcohol, and illicit drug usage. This program helps youth develop skills that serve them for life such as communicating with others, relating to change, and dealing with stress, especially as they seek to develop the internal strength to resist risky behaviors. Kids who have personal social skills and competencies are more resistant to substance abuse. Ultimately, we want youth who are already forming their opinions about tobacco, alcohol, and drug use to take healthy control of these choices, and not make them because of peer pressure, stress, or other emotional factors. This program works best as a series of 6 lessons.

Ages 8-12

Time Required: 1.5-2.5 hours per lesson

iGrow Readers

iGrow Readers is designed to help young children understand the benefits of making healthy decisions involving nutrition and physical activity. The program uses children's books to begin the learning. After reading a book as a group, the children participate in nutrition and physical activity activities that re-enforce the lessons learned in the books. Companion parent newsletters encourage reading and healthy lifestyles at home. All lessons meet early childhood literacy and health education standards. Science, math, and Oceti Sakowin standards are identified when applicable.

Ages 4-9

Time Required: 30 minutes - 1.5 hours

Kid Quest

KidQuest is specially designed for pre-adolescents in 5th to 6th grade. These "tweens" are on the fence between childhood and choice as they begin to branch out and take on responsibilities. The tween begins to make more decisions about what they will eat throughout the day as they become more autonomous. Behaviors developed at this stage of development are likely to influence future decisions. KidQuest engages its participants in the learning process with fun and educational hands on activities. The reasoning and educational concepts used towards the development of KidQuest incorporate components of social cognitive theory, theory of planned behavior and the social ecological model. Lessons and activities with topics that focus on healthy eating, choose my plate, eating out, and being physically active. Can be done individually or as a series of 8.

Ages 10-12

Time Required: 30 minutes - 1 hour per lesson

Captain Cash

Captain Cash is a money management curriculum for elementary students. Research shows that kids think their parents stress over finances. This program brings an understanding and a feeling of control as elementary school students learn how to manage money now and in the future. Good financial habits start young. The lessons covered are: earning money, saving money, spending money, and borrowing money. This is a series of 4.

Ages 7-10

Time Required: 30 minutes – 1 hour per lesson

Financial Champions

Personal finance skills are often not emphasized in a standard school curriculum. Youth who learn how to be good caretakers of their money can apply those skills to other areas of their lives. This curriculum also provides information on goal setting, emphasizes how to communicate about money, interaction with the community, and how to learn by developing research skills. Students will learn how to make sound decisions, manage themselves, and how to acquire and evaluate information. This works best as a series of 6.

Ages 11-14

Time Required: about 1 hour per lesson

Consumer Savvy

Consumer Education skills are skills that people need their entire lifetime. This curriculum and activities provide the opportunity to set goals, make good decisions, and develops research and critical thinking skills. Youth who learn good consumer skills can apply them to other areas of their lives. This is best as a series of 7-8 lessons.

Ages 10-18

Time Required: about 1 hour per lesson

Is there a need for a certain kind of program or activity that you didn't see listed in this guide?

Call or e-mail us anyway to see what we can do! We have many resources that sometimes don't fit into a program category or a traditional curriculum. There are no limits to the kind of activities and programs we can provide.

Example Calendar:

September – Weather Science, Migration,

October – Spiders Science, Pumpkins, Harvest

November – Food Safety, Food Science

December – Buoyancy and Floating, Making Bioplastics

January – Ice Science, Salt Science

February – Circulatory System, Music & Instruments/The Five Senses

March – Farm Animal Fun, Forces of Flight

April – Wind Science, Plant Science/Horticulture

May – Electricity & Fire Safety Science, Solar Energy