4-H SCIENCE, ENGINEERING AND TECHNOLOGY PROJECT

Are You Into It?

This 4-H project is designed to help you explore the world of science, engineering, and technology. Science is a way for us to look at and try to understand the world around us. Being scientific involves being curious, observing, asking questions about how things happen and learning how to discover answers. Be a part of the future! Challenge your mind by exploring the world around you with hands-on science experiments and solve problems using engineering design principles and the latest technology. The sky's the limit - design a robot to clean your room, test a local stream for pollutants, or become an astronaut.

- Develop an interest and understanding of science, engineering and technology.
- Develop problem solving and logical reasoning skills.
- Develop knowledge and skills related to specific topics of interest.

  Aerospace
  Biological & Chemical Sciences
  Computers & Networking
  Digital Storytelling
  Earth & Climate
  Environment & Sustainability
  Geospatial Mapping (GIS/GPS)
  Mechanics & design
  Robotics
  Science in our Everyday Lives

- Improve communication and teamwork skills by working the way scientists and engineers do - in teams.
- Develop responsible attitudes about science and how science relates to the real world and people's lives.
- Gain experience in problem solving and decision-making using science process skills.

Step It Up!

Pass it on! Now that you know how, share it with others. Here are ideas to get you started.

Communication

- Enter a science & technology fair.
- Create an exhibit for your county fair or do an educational presentation.
- Enter a robotics event.
- Present information about hand washing and germs to a local daycare class.

Citizenship

- Present an idea for improving efficiency to your city council.
- Work with your city to improve a walkway, park, or playground.
- Organize an event to get young kids excited about rocketry and flight through hands on activities.

Leadership

- Organize a fieldtrip to a local lab, business, or industry to learn how science, engineering, and technology inform what they do.
- Teach a workshop on robotics or car restoration at a day camp.
- Join the Iowa State Technology Team.

4-H
GROWING TOGETHER

Here's what you can do all year!

02/01/11

- If you are aiming for the stars set your sites on **Aerospace.** Reach for the stars with astronomy or learn how to get there with rocketry and flight. To find great ideas and resources for getting into this topic check out http://aerospace.iowa4h.org/.

- It is probably good chemistry for you to explore **Biological & Chemical Sciences.** Learn about life and the chemistry of your world through agriculture, medicine, biotechnology, genetics, critters (large and small), and engineering. To find great ideas and resources for getting into this topic check out http://biological.iowa4h.org/.

- Geek your projects with **Computers & Networking.** Get connected with hardware and software explore the digital side of life by building computers or using them for gaming, staying connected, and building virtual worlds. To find great ideas and resources for getting into this topic check out http://computers.iowa4h.org/.

- Tell your story or the story of others with **Digital Storytelling.** Discover the "how" of the video making process and the technology that makes it possible. Zoom in on animation, video production, editing, sound production, image manipulation, and telling a great story. To find great ideas and resources for getting into this topic check out http://storytelling.iowa4h.org/.

- If the changing planet is on your charts, then exploring **Earth & Climate** should be on your radar. Focus on issues ranging from geology to climate change and find out what everyone is talking about. To find great ideas and resources for getting into this topic check out http://earth.iowa4h.org/.

Check out the E-SET website to see what's happening in science & technology! www.extension.iastate.edu/4h/eset

- It makes sense to go green with **Environment & Sustainability.** It is all about making the earth a better place to live. Learn about plants, animals, habitats, environmental issues, or discover how you can live more sustainably with personal, agricultural, renewable energy, and conservation technologies. To find great ideas and resources for getting into this topic check out http://environment.iowa4h.org/.

- If you know where you are and where you are going **Geospatial Mapping (GPS/GIS)** should be on your map. Make your own maps and find your way using the technology and software that puts the world at your fingertips. To find great ideas and resources for getting into this topic check out http://geospacial.iowa4h.org/.

- Get your hands in it with **Mechanics & Design.** Design room cooling machine, build a green house for your garden, restore your dad's muscle car, get your lawnmower mowing and your go-cart racing, wire a room, weld up a piece of art, and do it all with a focus on mechanical and architectural principles. To find great ideas and resources for getting into this topic check out http://mechanics.iowa4h.org/.

- **Robotics** is the way of the future that is here today. Robots are doing surgery, building cars, and serving us as we live complex lives. Build and program your own robots to solve the issues you face. To find great ideas and resources for getting into this topic check out http://robotics.iowa4h.org/.

- If you live in the world today then you want to explore **Science in our Everyday Lives.** There's science behind what we eat, how we clean, what we do, and how we live. Discover the science, do your own research and form your own conclusions. To find great ideas and resources for getting into this topic check out http://everydayscience.iowa4h.org/.

IOWA STATE UNIVERSITY
Extension and Outreach

Take it Further!

- Contact your County Extension Office for local workshops, activities, camps, and events

- Join the online communities on topics that interest you to get ideas for cool things you can do in science, engineering, and technology and share what you've been doing with others. www.extension.iastate.edu/4h/eset/resources Meet others interested in the science and technology? Check out camps at the Iowa 4-H Center. www.extension.iastate.edu/4h/center

- Attend Iowa 4-H Youth Conference and participate in workshops, motivational speakers and a community service project, or join the Iowa 4-H Technology Team. http://techteam.iowa4h.org

- Join Iowa Studio 4-H http://studio4h.iowa4h.org and hone your digital storytelling skills with the advice of professionals as mentors.

- Become a 4-H TV crewmember and create audio and video news stories for local and state 4-H events! www.extension.iastate.edu/e-set/4htv

- Is it fair time? Consider taking an exhibit, a piece of your project learning, to the fair for judging and to show off what you've learned.

- Enter your science experiment or engineering design in the a local science fair or the State Science + Technology Fair of Iowa www.sciencefairofiowa.org/

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