UNIVERSITY OF MINNESOTA
EXTENSION

4-H Projects

4-H believes that youth learn best by doing. That's why all 4-H'ers are encouraged to participate in hands-on projects in areas like science, health, agriculture, and civic engagement. Youth can concentrate on one project area, or they can try as many as they like.

Driven by youth interest.

Youth drive their own choices. As in the 4-H pledge, they use their:
Head to engage actively in learning.
Heart to demonstrate caring for others and their own learning.
Hands to share their experiences with others.
Health to experience success and learn to support their family, community, and world.

Project work can be overwhelming-where to begin, how to get started, what should I do are all FAQ's surrounding project work. Some project areas are easier to figure out than others. Watch this space for project information and ideas. 4-H curriculum can be found for most project areas at www.shop4h.org

4-H Exhibits

A ***4-H exhibit*** is something that 4-H'ers can make and show at the fair or other showcase event to demonstrate what they have learned in the project area.

Aerospace

Learn about the science of flight. It covers aviation and space flight.
Project learning activities could include:

- Investigate parts of a rocket or airplane and their purpose
- Study how to design a rocket or an airplane,
- Learn about other things fly-gliders, helicopters, hot air balloons, blimps, etc.,
- Explore the science of flight-what role do lift, weight (gravity), thrust and drag play in getting something off the ground.
- Look at what career opportunities are available.

Resources for information are 4-H curriculum available in our office, your local library, or reputable websites including www.nasa.gov or https://edu.estesrockets.com/lesson-plans/

Creating an exhibit
After exploring and learning about aerospace you can create an exhibit to bring to your fair or showcase event. These might include:

- Building and launching a rocket
- Designing an airplane or making a model airplane
- Experimenting with paper airplane design for distance and accuracy
- Teaching others about aerospace at a club meeting-fly kites, paper airplanes, straw rockets
- Giving a public presentation about what you have learned.
- Exploring careers in the aerospace industries and creating a display

- Research the history of an aspect of aerospace.

  Club Leaders-if you are interested in putting together a club project lesson around aerospace, please contact the office. We have launchpads and lessons available for clubs to use.

Agronomy and Horticulture

Agronomy is the science of using plants for food, fuel, feed, and fiber. Horticulture is about growing plants for food and decoration. Under this project umbrella you'll find:

- Crop and plant science
- Corn, soybeans, legumes, small grains, forages
- Weed control and pests.
- Soil health and fertilizer
- Vegetables, herbs, and fruit production
- Indoor and outdoor plants including flowers, fairy gardens and ornamental plants.
- Plant diseases

In this area project learning can include:

- Growing crops, harvesting, comparing plots, and seed brands
- Experimenting with different weed or pest control methods
- Planning and planting a vegetable, fruit, flower, or herb garden
- Investigating different varieties of plants
- Exploring role of technology and careers in agronomy and horticulture

Resources for information include local agricultural coops, garden centers, seed dealers, the public library, commodity groups and 4-H curriculum.

Creating an exhibit

After exploring and learning about agronomy and horticulture you can create an exhibit to bring to your fair or showcase event. These might include:

- A crop sample with variety labeled and planting method.
- A display about weed and pest control and pros and cons.
- A report about testing your soil and adding nutrients.
- Serving your community by planting a garden for produce and sharing that information.
- Care for your indoor plants and bring a healthy plant specimen to the showcase.
- A box or plate of vegetables harvested from your garden.
- A design of a landscape project in your yard
- A selection of cut flowers.
- Plant and maintain an indoor or outdoor fairy garden.

Animal Science

Animal Science encompasses many animals and what you can learn. One aspect of the animal science project area is raising animals concentrating on animal selection, nutrition, and how to exhibit your animal in the show ring. There are specific deadlines, requirements, and birthdates around showing live animals. Dog has specific requirements around dog training and horse has a variety of classes and opportunities to participate in. Resources for information include families in your club or local program, animal nutritionists, 4-H curriculum, and 4-H staff. Visit https://extension.umn.edu/projects-and-more/4-h-animal-science-projects for more information. You do not need to own an animal to exhibit, we have leasing options for exhibiting breeding animals, horses, and dogs.

Under this project umbrella you will find:

- Alpaca/llama, beef, dairy, dog, goats (meat and dairy), horse, poultry, rabbit, sheep, and swine.
- Science of Animals
- Livestock demonstrations
- Dog training

- Horse training, horse related and horse riding.

Resources for this project area include other families in your club who show animals, your local veterinary office, local library, a livestock producer, or dog/pet owner, https://www.canr.msu.edu/resources/4_h_animal_science_anywhere

Creating an exhibit
After exploring and learning about animal science you can create an exhibit to bring to your fair or showcase event. These might include:

- Show a live breeding or market animal based on qualifications of birthdates and more.
- Exhibit your dog at the county dog in a variety of classes after attending dog training which is required.
- Show your horse at the county fair horse show in a variety of classes.
- A static/general exhibit about an aspect of the animal science project area including:
    - Interactive exhibit around body parts, or some aspect of raising an animal.
    - Poster showcasing disease and prevention methods, animal nutrition, breed selection, by products, genetics, the topics are endless.
    - Demonstrate about your animal of choice using a live animal or a slide show, or posters.
- Participate in livestock/horse/rabbit/poultry judging or project bowl about your animal of choice.

Bicycle

Bicycle is an exciting project area; people ride bikes for many purposes. Ride for transportation, exercise, or competition! If you like traveling, tinkering, or racing, you probably like cycling. Along with taking you from place to place using no fossil fuels, bikes can teach you about safety skills and keep you fit.

- Find out about cycling in your community and bike paths throughout the state.
- Learn how to make your own repairs.
- Explore how to ride more safely.
- Get involved in off-road biking, touring, or racing.

Resources include a local bike shop, or bike repair shop, https://www.bigolebikeclub.com/, https://minnesotacycling.org/

Creating an exhibit.
After exploring and learning about bicycles you can create an exhibit to bring to your fair or showcase event. These might include:

- A display showing built, restored, reconditioned, or rebuilt bikes
- Display showing types of bikes, parts of a bike, maintenance, traffic rules, bicycling hazards, city/county/regional bike, or active transportation plans.
- Demonstrate how to wear a helmet, teach others about bike repair or first aid
- Plan and implement a bike event, such as a bike rodeo, group trail ride, bike race etc.
- Serve your community by having a bike repair event, a learn how to ride clinic, or raise funds to provide bikes to those who need them.

Child & Family Development

This is an exciting project area for those who enjoy working with young children, whether it is teaching others, babysitting, or playing with children. In this project area discover how to be self-reliant and responsible.

- Develop skills to handle emergencies and develop home alone skills.
- Learn about home safety, age-appropriate toys, nutritious snacks for children and
- create a poem, story, or game for young children.
- Study future careers including childcare provider, teacher, child psychologist, therapist, or a children's literature author.

Creating an exhibit.
After investigating aspects of child and family development, you can create an exhibit to bring to your fair or showcase event. These might include:

- Toys, game puzzles, puppets, art/craft materials, made from new or recycled materials.
- Babysitting kit, travel kit or a rainy-day activity kit.
- Display exploring different types of families (nuclear, blended, single parent, childless, foster etc.)
- Educational display about youth mental health. Explore strategies to help youth cope with stress, anxiety, etc. with busy bags, sensory activities, conversation tips.
- Job shadow and early childhood education provider, childcare provider, or other youth worker.

Resources include visiting with a home daycare provider, or a schoolteacher, attending a babysitting clinic, seeking out research-based activities and games either online or through the library.

Citizenship

In this project area be the change you wish to see in the world. Citizenship means contributing to the world around you and giving service to others. Learn how to solve problems in your community and how to take action in a positive way. Everyday situations give us the chance to be active citizens.

- Learn how to solve problems in your community.
- Take action in a positive way.
- Contribute to the world around you by helping others.
- Giving service to others.
- Attend Citizenship Washington Focus
- Attend youth leadership workshops.

Visit local museums or historical places in your area, visit https://www.uscis.gov/citizenship, ask your social studies teacher for information about a particular topic, visit with elected officials or service organizations in your area.

Create an exhibit.
As you explore what it means to be a productive and engaged citizen in your community, you can create an exhibit to bring to your fair or showcase event. These might include:

- Highlights of community projects or citizenship activities you engaged in with your club.
- Educational display on how the government works on a local, state, or national level.
- Research the steps you take to become a naturalized citizen.
- Explore how elections work, voting rights, and what election officials do.
- Study the impact of community organizations on everyday life such as law enforcement, fire departments, medical facilities.
- Survey your community for needs and improvements and report your findings.
- Share the economic impact of the county fair on your community.

Clothing and Textiles

This is a project area with many opportunities to explore the world of textiles and clothing. You can explore the creativity of making clothing, or buying a thrift store item and upcycling it, or you can learn about the fashion industry and how to make smart purchases with your clothing dollar.

- Learn how to use a sewing machine to make clothing or home décor items.
- Utilize your purchasing power by researching the cost of clothing.
- Explore the world of thrift shops to stretch your clothing dollar.
- Build confidence by sharing what you know and presenting your outfit to the public in a fashion show.

Resources include your local fabric show or clothing store, your FACS classes and instructors at your local school, check out Alexandria Technical Community College fashion management program at

https://www.alextech.edu/programs/fashion-management, or the apparel design program at the U of M, https://design.umn.edu/academics/programs/about-apparel-design

Create an exhibit.
As you explore the many aspects of clothing and textiles, you can create an exhibit to bring to your fair or showcase event. These might include:

- An article of clothing you sewed.
- An article of clothing from a thrift store, hand me downs, or garage sale that you altered to fit you or create a new piece of clothing.
- Educational display about different types of fibers used in garment construction.
- Educational display about how clothing is made and what working conditions are like in factories.
- Purchase an outfit and share a booklet on why you purchased it and how it fits into your existing wardrobe and figure out the cost per wear.
- Model and outfit you purchased or made in a public fashion review, where you share your knowledge of your design choices and develop poise and confidence.
- Sew a pillow, garment bag, duffle bag, pillowcase, drawstring bag, laundry bag etc. and share what skills your learned.
- Educational poster on a topic of your choice: career opportunities, how fabric is made, evolution of clothing, cost comparison, care of fabric, etc.

Cloverbuds

Cloverbud is a 4-H member who is in kindergarten through second grade. Cloverbuds explore and learn by doing fun activities, guided by adult volunteers. Cloverbuds programs are age appropriate designed specifically for this age group. Activities including fairs and showcases are non-competitive. The purpose of the 4-H Cloverbud Program is to support the positive development of children as they explore their world, discover possibilities, build self-esteem, and practice basic social skills. These will be the basis for becoming competent, caring, contributing citizens. Programs may be delivered in several different ways, including:

- Day camps
- After-school programs
- Activities hosted by a 4-H community club but not operated as a club.
- Club, group, or program specifically for Cloverbuds
- County fair special activities

Cloverbud programs are developmentally age appropriate:

- Fun, positive, activity centered.
- Focused on life skills development through the five components of the experiential learning cycle (experience, share, process, generalize, and apply)
- Non-competitive, incorporating cooperative learning.
- Safe for children and designed to manage risk.

For Cloverbud resources check with your local extension staff or visit the Minnesota 4-H Cloverbud page.

Create an exhibit.
Cloverbuds can bring what they are interested in to the fair or showcase event. The exhibit is evaluated allowing the youth to share their experience. Cloverbuds receive special ribbons. You can create an exhibit to bring to your fair or showcase event. These might include:

- Artwork
- A report from school
- Something they made in a Cloverbud program or other learning activity including, school, bible camp, 4-H Day camps and community activities.
- An item they made with the help of a caring adult.

- Cloverbuds may bring animals in a prescribed environment where a youth leader or adult is in charge of the animal.

Consumer Education and Money Management

You need to manage money throughout your life. Good money managers have less stress in their lives and more choices. Improve your skills and become an informed consumer.

- Learn the difference between wants and needs.
- Identify, set, and evaluate goals.
- Track expenses and income.
- Research your purchasing power.

Resources include https://bizkids.com/ , https://banzai.org/wellness/resources/banzai-jr , https://senseanddollars.thinkport.org/

Create an exhibit.

- Create a booklet or poster comparing the costs and features of four models of the same consumer item.
- Give an example of a consumer complaint and how it was or might be settled.
- Create a game, teaching plan or activity for teaching a group of people to be smarter consumers. What was the result?
- Analyze a TV commercial, print or internet ad. Explain the ad's argument, audience, emotional appeal, how it is constructed, etc.
- Find three different sources of the same information. How do they differ? Why?

Crafts and Fine Arts

Crafts and fine arts are one of the largest project areas in 4-H. There are two components to this project area. Both are an opportunity to be creative, learn techniques and share your passion for the arts.

Craft exhibits develop from someone else's idea and can be easily replicated or replicated with modifications. You will follow steps and instructions and create a product from a pattern or a specific craft process kit.

- Explore different crafting techniques
- Follow directions to create a work of art from a pattern
- Complete a craft activity that comes from a kit

Fine arts exhibits are an original one-of-a-kind piece of art from an original idea of our own. We use our imagination to make a unique piece.

- Explore different types of art-painting, sculpting, multimedia work
- Utilize your imagination to create a work of an art

Resources include local arts organizations, businesses with art and craft supplies, library books about crafts and fine arts, and art educators.

Create an exhibit.

As you explore the many aspects of crafts and fine arts, you can create an exhibit to bring to your fair or showcase event. All artwork should be ready to be displayed, so a painting should be ready to hang. These might include:

Crafts

- Diamond Art kit
- Foam art kit
- Basket making
- Rosemaling
- Popsicle stick structure
- Items made at a camp
- Painting ceramics

Fine Arts

- Paint an original painting in the medium of your choice (acrylic, oils, watercolor)
- Mold a sculpture from your own design
- Produce a work of art using multiple forms of media, including collage, mosaic etc.
- Throw a unique pottery item
- Create a work of art from metals, stone, wood, plaster etc.

Engineering Design

In the engineering design project, you will address a problem by developing a solution that successfully solves the problem. Important in engineering design projects is identification of the problem and improving the solution.

- Ask: Define the problem.
- Imagine: Information gathering/idea generation
- Plan: Make a plan
- Create: Testing and decision-making.
- Improve: Redesign
- Explore simple machines and their purpose

Resources include: https://education.nationalgeographic.org/resource/nasa-kids-intro-engineering/ , https://4-h.org/clover/activities/rubberband-cars/ , your local library or science teacher.

Create an exhibit.

As you explore the many types of engineering, you can create an exhibit to bring to your fair or showcase event. These might include:

- Participate in the engineering design challenge with a team of 4-H members to create a machine with a series of steps to solve a problem and record your data and process
- Use everyday items to build a simple machine to complete a simple task or solve a real-life situation
- Use LEGOS to create and test different types of bridge designs
- Engineer a bridge, a roller coaster, a catapult/trebuchet, or a wind turbine

Exploring Animals

Exploring animals is intended as an introductory project area for youth who have limited experience with livestock/animal science. This area is a pathway for more in-depth study of the animal

- Practice investigating and researching an animal of your choice
- Explore the needs, and necessities of owning an animal
- Investigate careers involving animals-zoologist, caretaker, humane society and more

Resources include https://extension.umn.edu/animals-and-livestock , your local veterinarian, the public library, or other animal owners.

Create an exhibit.

As you explore the amazing world of animals, you can create an exhibit to bring to your fair or showcase event. These might include:

Make a poster, display, or video about:

- How to select an animal for a pet, working animal or food production
- How much does it cost to raise an animal?
- Where does my animal come from? What is the history of the species or breed? How did it evolve?
- How can I keep my animal healthy and well fed?
- What is a therapy animal? How are they raised and trained? Who can they help?
- Do a service-learning project with animals. What service did you provide? What did you learn?
- Research and report on a career working with animals.

Electricity

In the electricity project you can study electricity as a force of nature. Where does it come from? Can we create it? How can we use it efficiently and safely? How can we harness it to do things we want to do?

- Build circuits and test voltages.
- Learn about wiring, lighting, safety issues, and more.
- Build a rocket launcher, burglar alarm, flashlight, compass, electromagnet, or electric motor.
- Research how solar power, wind turbines and other sources of energy create electricity
- How does electricity affect our daily lives

Resources include https://extension.purdue.edu/4-H/projects/4-h-project-electric.html , https://www.sciencebuddies.org/blog/electricity-lessons or your local library or an electrician.

Create an exhibit

After studying electricity, you can create an exhibit to bring to your fair or showcase event. These might include:

- A detailed diagram of wiring in your home, including wattage, circuits, and type of wiring installation
- Working electrical item constructed for home, yard, or farm
- Rewire an antique lamp
- Electronic item built from a kit
- Display ideas include careers in electrical field, how electricity works, how it impacts the environment, cost analysis of electricity and more

Entomology

Entomology is the study of insects. There are WAY more insects on earth than there are people. Butterflies, dragonflies, bees, cockroaches, bed bugs and flies are just a few. Insects play a big part in our earth's ecosystem and food supply.

You can study:

- One species of insect
- Discover pollinators
- Explore threats to insect survival
- Study diseases transmitted by insects
- Learn how insects can be used to solve crimes

Check out this video for more information
https://z.umn.edu/DC4hentomologybeesV
https://entomology.ca.uky.edu/sites/entomology.ca.uky.edu/files/stfairbook.pdf gives information on starting your insect collection.

Other resources include the extension office which has entomology curriculum

Create an Exhibit
After discovering the world of insects, you can create an exhibit to bring to your fair or showcase event. These might include:

- Live bee or ant colony
- Display or booklet about insects, or careers in entomology
- Display or poster of the benefits of insects and how they contribute to our ecosystem
- Insect collections
    - specialty collection such as a specific order
    - general collection of insects
    - insects native to Minnesota

Check out this video for more information
https://z.umn.edu/DC4hentomologybeesV

Exploring the Environment/Environmental Science

Explore ecosystems and wildlife in a forest or your own backyard and learn how you can be a good steward of the land.
You can learn about:

- Habitat where you live
- Conservation programs and practices
- What plants, and animals are native to the land around you
- How to better care for the land in your area
- Participate in a citizen science activity in your area-bird counts, weather collection

Resources include: your local library, your science teachers, Department of Natural Resources (DNR), state or national parks, plant and animal guidebooks

Create an exhibit
As you investigate your environment you can create an exhibit to bring to the county fair or your showcase event. These might include:

- Map of the ecosystem where you live
- Display about native plants in your area where you live
- Journal of what happens with growth and animals in a specific spot
- Report on environmental legislation
- Experiment with soil about erosion, nutrients, and quality
- Video of trail cam activity in a specific location

Fishing Sports

We are surrounded by water and lakes and fishing is a part of our culture. Take advantage of our natural resources and explore the world of fishing. You can learn about

- Fish species and habitats
- Experiment with fishing gear, baits, and lures
- Tie knots, lines, and flies
- Research fishing regulations
- Explore fishing careers
- Journal about your fishing experiences

For more information check out this video
https://z.umn.edu/DC4hfishingsportsV

Other resources include: Minnesota Fishing regulations, local bait shops, conservation officers and the DNR. Area lake associations.

Create and exhibit
While experiencing the wonderful world of fishing you can create an exhibit to bring to the county fair or showcase: These might include:

- Display about the habitat and food needs of selected MN fish
- Create fishing knots, lures, and flies
- Display about fish identification
- Results of water testing area lakes and rivers for water quality and health for fish
- Serve your community by introducing others to fishing
- Research and display of different fishing equipment and the purpose and use of
- Booklet on the role of the DNR in fishing programs

For more information check out this video
https://z.umn.edu/DC4hfishingsportsV

Flower Gardening

Grow your own flowers! Dig deeper into the science behind growing flowers, arranging flowers, fairy gardens and more in this 4-H project.
You can explore

- Differences between annuals, biennials, and perennials.
- Design and plant a flower garden,
- Start flowers from seed,
- Create flower arrangements or do a science exhibit on a flower project.
- Research flower growing as a business and sell locally grown flowers
- Learn about soil, watering, fertilizer, propagation, and more.

Check out this video for more information
https://z.umn.edu/DC4hflowergardeningV
Resources include local garden centers and nurseries,
https://extension.umn.edu/how/planting-and-growing-guides or
https://extension.umn.edu/planting-and-growing-guides/starting-seeds-indoors from U of M extension.

Create an exhibit
While appreciating the beauty of flowers and how they can make our world more beautiful you can create an exhibit for your county fair or showcase. These might include:

- Three stems of one variety of annuals flowers
- One stem of a hardy perennial, or summer flowering bulbs
- Flower bouquet or arrangement
- Display about propagation or reproduction of flowers
- Results of experiment with different methods of growing flowers including soil type, nutrients, location
- Serve your community by creating a flower garden in a public space with permission of local government where needed
- Share a business plan for creating your own flower growing business
- A booklet about careers in the floral industry

Food and Nutrition

Everyone eats, but not everyone makes healthy eating choices. Learn how to pick healthy foods, prepare nutritious meals, and make smart food purchases. Discover the science behind making food and keeping it safe. Explore careers related to food and nutrition and more in this 4-H project area. There are many subcategories of this project area including breads, dairy foods, microwave cooking, food revue and food

Resources for foods and nutrition categories (breads, dairy foods, microwave cooking) include: cookbooks, public health officials, your FACS teachers, professional chefs or bakers, or visit https://www.usda.gov/topics/food-and-nutrition

Food Preservation resources include:
https://extension.umn.edu/food-safety/preserving-and-preparing

For Food Revue check out this video
https://z.umn.edu/DC4hfoodrevueV

Create an exhibit
While exploring the many aspects of food and nutrition and how they impact the world around us you can create an exhibit for your county fair or showcase. These might include:

- Breads
  - Educational exhibit on nutritional value of bread
  - product
  - Study of basic ingredients in quick and/or yeast breads
  - Comparison of different kind of flour
  - One loaf of specialty bread, or half loaf of yeast bread-(include 8 1⁄2 X 11 poster showing nutritional value, recipe, and photo of the bread
- Dairy Foods
  - Exhibits can include one serving of a dish with a dairy
  - product as the main ingredient (cheese, milk, cream,
  - yogurt, ice cream, butter etc.)-Include an 8 1⁄2 X 11 poster showing nutritional value,
  - recipe and photo of the food
  - Study of nutritional value and health benefits of dairy products
  - Comparison of nutrient content of different dairy products
- Microwave Cooking
  - Can include one serving of a dish prepared in a microwave oven. Include an 8.5 X 11 poster showing nutritional value,
  - recipe and a photo of the food, independent study of topic related to project, or educational exhibit which might address menu and diet planning, buying consumerism, safety, sanitation, storage, nutrition, science principles, etc.
  - study how microwaves work and cook food
- Food & Nutrition
  - Food items such as: Bars & cookies, breads, cakes, or pastries (no commercial mixes)
  - Gluten-Free baked goods
  - Homemade meal or other homemade food
  - Recipe adaptation to improve nutrition
  - Cake/cupcake & cookie decorating
  - Food science experiment.
  - Exhibit showing food and/or kitchen safety.
  - Investigate food allergen of your choice.
  - Display about careers in the food industry.
  - One serving of nutritious food (vegetable or fruit dish, snack, bread, dairy, etc.) Include 8 1⁄2 X 11 poster showing nutritional value, recipe, and a photo of food.

    - Study of how physical fitness and/or food choices are
    - related to diseases (such as cancer, heart disease, osteoporosis, diabetes, etc.)
    - Study of labels from similar food items, comparing important nutrient content like fat, fiber, and sugar.
    - Explore nutrition-related careers
- Food Preservation-please refer to premium book for specific information about requirements in canning
    - Learn about cottage food producer requirements in Minnesota
    - Compare products used in food preservation
    - Teach others about safe canning methods
    - Suggested exhibits include one (1) jar or one (1) bag of products (see requirements for specific amounts):
        - Vegetables or fruits
        - Jams, jellies, preserves, low-sugar spreads (no frozen)
        - Pickled products (fermented or added acid, including pickles, sauerkraut, relishes, salsa).
        - Meats, poultry and/or fish. (Fish must be in pint jars.) Must be processed in a pressure canner.
        - Dried vegetables or dried fruits, dried herbs, beef, or venison jerky.
- Food Revue
    - Exhibitors plan a full menu and create a place setting that compliments the menu
        - Bring the place setting including dishes, centerpiece and table covering
        - Bring a binder with a picture of the full meal along with recipe, and nutritional information and you in action preparing the meal

If you love to entertain this is a great exhibit for you.

Forest Resources

Explore different types of trees, what forests need to grow and thrive, how to care for trees and conserve forests, and how we depend on and benefit from trees and forests in our world.

Resources include https://www.fs.usda.gov/learn/kids, https://mn.gov/frc/, https://extension.umn.edu/natural-resources#forestry, https://discovertheforest.org/, or local state park departments or tree specialists.

Create an Exhibit

After discovering the world of trees, forests, and woodlands, you can create an exhibit for your county fair or showcase. These might include:

- Identify parts of a tree and their function with a poster
- Create a collection of leaves, seeds, needles, leaf, and twigs for tree identification
- Display showing layers of the forest, renewable vs non-renewable resources
- Research and report on the forest ecosystem health
- Explore careers and opportunities in the forestry industry
- Organize or take part in a mass tree planting and how it impacts your community
- Investigate diseases that can affect trees and how to control them
- Be sure to follow local and state policies for collecting, removing and or transporting plants

Fruit

Grow your own food! You might choose to grow your favorite fruit. Explore how to plant, water, fertilize and prune your plant and how to manage weeds, insects, and diseases.

Resources include local garden center and nurseries that have fruit plants, local orchard or vineyard owners, and your local library.

Create an exhibit
Once you have decided on what fruit you are going to grow or learn about you can create an exhibit for your county fair or showcase. These might include:

- Bring a display of your fruit in a clear container, 4-6 items of one fruit-strawberries, cherries, apples or 3 bunches of grapes or similar fruit. Include a card labeled with variety
- Educational display illustrating diseases or insects and methods of control
- Display showing a comparison of several varieties of the same fruit
- Display about proper care including fertilization, harvesting, and pruning of fruit tree
- Report on the uses and health benefits of the fruit you grow

For more information on preparing your fruit for exhibit check out this resource https://docs.google.com/document/d/1YB-dt4PWW4XH5QBvXjiO4Q6CAWdUTMHERzuqi8ZZCec/edit?usp=sharing

Geology

Which minerals should I eat? Which minerals are used to make cement, paint, and light bulbs? Learn about materials, mythology of stones, careers and more in this 4-H project.

Create an exhibit
Once you have dug deep into the world of geology, you can create an exhibit for your county fair or showcase. These might include:

- Display of rocks, minerals, or gemstones, can be displayed in an egg carton for younger members, progressing to a display case as you progress in the project. Include label with specimen name and location collected
- Rocks, minerals, or fossils from within Minnesota or on a definite theme such as metamorphism, weathering, quartz, ore, or theme of your choosing
- Polished rock specimen, include an unpolished specimen for comparison
- Exhibit showing the principles of geology, natural earth sciences, three main types of rock, careers in geology and more
- A model of a geological earth structure such as a mountain range, volcano, earthquake, or glacier

Resources include the Minnesota 4-H Geology Project Guide, or the Geology project resource guide.

Global Connections

Global connections project allows you to explore countries and learn about their government, history, people, and popular culture. It also allows you to further explore your own culture and traditions.

Here are a few resources you may find useful. What does it mean to be human? By Smithsonian National Museum of Natural History, Media That Matters video film festival collection, Audio stories from the Global Oneness Project, Kids World Travel Guide. U.S. States and Territories by National Geographic Kids. You can also visit with local language teachers or community groups.

Create an Exhibit
After learning about your own culture or another's, you can create an exhibit for your county fair or showcase. These might include:

- A poster exploring your own culture. Share elements of your culture and how it differs from another culture
- A display of stamps, or coins from another country, or recipes from other cultures you have prepared for others

- An oral history interview with someone from another culture living in your community
- An exhibit of items, pictures, charts, slides, pictures, or displays that depict the heritage of your family or community
- A report on your experience traveling to another country

Health and Wellness

In this project area study health issues or ideas associated with health and wellness. Connect fitness, motion, and athletics to a healthy lifestyle. Explore careers in the health industry.

Resources include National 4-H healthy living activity books, Utah 4-H fitness clubs activity book , KidsHealth. MyPlate Kids' Place or your local public health agency or healthcare provider.

Create and Exhibit

As you explore the many aspects of health and wellness, you can create an exhibit for your county fair or showcase. These might include:

- Research and report on health issue of your choice
- Research health resources that are available in our community
- Conduct a community project around a health issue and what you discovered
- Design a model of the human skeleton and label the bones, learn about other organs, or body systems
- Explore and report on careers in the health industry

Home Environment

Learn all about the home environment, from decorating a room and arranging furniture to landscaping. interior design, housing, architecture, furnishings, repurposing furniture, and more

Resources include Kentucky 4-H home environment activities-Unit 1: Exploring Your Home, Unit 2: Living with Others, Unit 3: Where I Live, Unit 4: In My Home. In addition visit with local furniture stores, interior designers, upholsterers or furniture refinishers. check out DIY books from the local library.

Create an Exhibit

As you explore all of the facets of home environment, you can create an exhibit for your county fair or showcase. Exhibit ideas include:

- Paint or refinish a piece of furniture, reupholster, or cover furniture with before and after pictures
- Repair, restore, repurpose an item for the home
- Description, diagrams/photos, samples and cost of a redecorating or remodeling plan
- Home organization or functionality
- Explore careers such as interior design, construction, architecture, and real estate.
- Showcase how what you created enhances the home

Horse Related/Horseless Horse

This project expands on owning a horse and allows youth to explore other aspects of owning a horse in a static/general exhibit form. Horse related is for youth who own a horse and are in the horse project. Horseless horse is for youth who do not own a horse but want to learn more about owning a horse. The exhibits might be similar.

Resources include local horse owners, equine veterinarians or community horse groups. https://extension.umn.edu/4-h-projects/4-h-horse-project and for more horseless horse check out https://extension.umn.edu/4-h-horse-project/no-horse-needed

Create and exhibit
After researching all things horse, you can create an exhibit for your county fair or showcase. Exhibit ideas include:

- Exhibits may be a model, poster, scrapbook, essay or display about something you learned about horses.
- Breeds of horses, differences, similarities, characteristics
- How to take care of a horse
- Make or refurbish a piece of horse equipment such as restoring a saddle
- Researching the different pieces of tack and their purpose
- History of horses in our country or throughout the world

Indoor Gardening

Houseplants have many uses in the home, investigate what plants grow best indoors, and how to take care of them to keep them looking healthy!

Create an exhibit
After studying the topic of indoor plants, you can create an exhibit for your county fair or showcase. Exhibit ideas include:

- All living indoor plants are to be exhibited in this project area including indoor fairy gardens
- Potted plant, or flowering plant with common and botanical name
- Foliage, terrariums, and/or hanging plants that are healthy and vigorous
- Explore the health benefits of having house plants in your home
- Investigate common pests and how to control them for house plants
- Exhibits are evaluated on knowledge, condition of and how established the plants are

Industrial Technology

Do you like to create items out of wood or metal, use various power tools to make furniture, explore welding and working with different metals, then this is the project area for you.
Create an Exhibit
After discovering and practicing working with wood and metal, you can create an exhibit for your county fair or showcase. Exhibit ideas include;

- Display on properties, uses or processing metals
- Create a metal structure by cutting, bending, and assembling metals
- Research different tools used in metal work
- Explore safety guidelines and practices for metal and woodworking
- Display on properties, uses or processing wood or wood alternatives
- Create items from wood using techniques of wood carving, joinery, carpentry, wood burning or other wood manipulation techniques

Landscape Design

In this project area you explore using plants to beautify the world around you in a purposeful and well-planned way. Learn about plants that work well in different landscapes and the space and place you are landscaping.

Once you have explored the many facets of landscape design, you can create an exhibit for your county fair or showcase. Exhibit ideas include:

- Design a community landscape plan. Report on the process you took, who you worked with and how it turned out
- Make a homeowner's landscape plan. Explain the choices you made.
- Make a diagram of your plantings and explain why
- Landscape a nature trail
- Plant and grow a lawn from scratch
- Explore a lawn care business
- Plan and build a playground

Needle Arts

If you enjoy working with your hands to create items by knitting, crocheting, embroidery, crewel, counted cross stitch to name just a few techniques of needlework. Explore tools and materials used to create works of art or useful items.

Create an Exhibit

Once you have mastered or learned about a needlework technique, you can create an exhibit for your county fair or showcase. Exhibit ideas include:

- Any item made using a needle arts technique-knitting, crocheting, cross stitch, embroidery, hardanger, weaving, latch hook, felting and more
- Comparison and evaluation of materials, supplies or accessories used for a needle arts technique
- Poster or display comparing different techniques of a particular needle art or showing how to care for your project supplies.
- Story, poster or display about a needle arts heirloom from your family or local history museum.

Performing Arts

Are you interested in the performing arts? Do you want to discover acting techniques, explore improvisation, create costumes and/or set design, learn about make techniques, stage lighting and more! You can perform onstage thought song, dance, poetry, dramatic speech, puppetry and more.

Create an Exhibit

Once you have chosen an aspect of the performing arts to learn about and explore, you can create an exhibit for your county fair or showcase. You can select a performance-based exhibit or a non-performance-based exhibit. Exhibit ideas include:

- A live performance that is evaluated for performance quality and content
- A poster or display about a previous performance in a play, a musical group, a dance competition, the possibilities are endless.
- An aspect that contributes to performing arts-lighting, costumes, electronics, set design, makeup, directing a play and or a performance, writing a skit and working with others.
- Poster or display sharing about the history of a specific performing art, or a local theater, take a field trip to a professional performance and evaluate the experience.
- Share a display about career opportunities in the performing arts including dramaturge, publicity, promotion, theater manager, fundraising, grant writing, teaching, performing and more.

Pets

Which pets would fit into your family? How could you be an excellent caretaker? Learn about a variety of small pets, such as cats, dogs, birds, guinea pigs, iguanas, snakes, or frogs. In the pets project, you can learn more about feeding, habitat, nutrition, health, things to consider when selecting your pet.

Create an Exhibit: Once you have narrowed down your focus or choice of pet you can create an exhibit to share at your county fair or showcase: Exhibit ideas include:

- Share your live pet at a pet show
- A display or report on an aspect of raising your pet-care of, breeds, habitat, nutrition and more
- A display or report on health needs, vaccinations, common diseases, vet care, reproduction, cost of
- Build a toy or a housing unit for the pet of your choice, consider cost, safety, and ability
- Share your pets with others through service-learning activities at a nursing home, school, club meeting or other public setting

Photography

In the photography project, you can learn about equipment basics, taking sharper pictures, lighting, and flash techniques. Explore photo composition, approaches, sequencing and evaluating photographs. Use multiple cameras and even assemble a whole production team. The possibilities are really endless. Use your imagination.

Create an exhibit: Once you have explored the world of photography and chosen an aspect to focus on, you can create an exhibit to share what you have learned at your county fair or showcase. Exhibit ideas include:

- A photo story of 4-7 4 X 6 photos around a common theme (people, landscapes, seasons, animals, events) or before and after, documenting a trip, or landmarks around town
- Exhibiting photos manipulated through photo editing programs-editing photos for clarity, color, effects and more
- Enlarging your favorite photograph, including the original
- A poster or display on the history of photography, cameras, film, etc.
- Creating a calendar, brochure, advertising using your photographs
- An exhibit showcasing portrait photography
- A poster or display showing knowledge of shutter speed, aperture, use of light, rule of thirds, what constitutes a good photograph
- Research and report about careers in photography-photo journalist, advertising, editing, event photography (weddings, senior photos), model photographer and more

Plant Science

In the plant science project, you can explore ag technology and how it has changed and improved farming practices, investigate how cross-pollination works, discover how plants are used other than for food. Learn about the impacts certain weeds and pests can have on the farming industry.

Create an exhibit: after exploring your area of interest in the plant science project area you can create an exhibit. Exhibit ideas include:

- A display comparing two different varieties of seed corn with research from online and farmer interviews.
- Plant a small plot comparing side by side different varieties; take photos and data to create a display or booklet with what you learned.
- A display talking about your alfalfa field from start to finish including photos (preparation, planting, cutting, baling, sample testing, etc.).
- Take photos of the growing stages of a plant and create a display about the process.
- Create a display sharing the process of how to grade a grain sample.
- Create a book highlighting current pests in crops that crop scouts are on the lookout for.

- Bring a crop, forage, or feed sample
- Compare methods for controlling weeds in your crop-chemical versus mechanical for example

Potatoes

Grow your own food! You might choose to grow the particularly useful potato. Explore the varieties of potatoes, how they differ or are the same. Research the history of the potato and how it has influenced immigration and the economy in different parts of the world.

Create an exhibit: After you have decided on your emphasis about the potato you can create an exhibit to share your learning at the county fair or showcase. Exhibit ideas include:

- Display a box (fruit crate size) or clear container of potatoes that contains all the potatoes in that hill (all the potatoes one plant produced)
- Educational display illustrating diseases and control, methods of mulching and reasons or causes and effects of sun scald.
- Display a potato box, you need 6-10 potatoes of the same variety or 2-3 varieties (this year's crop) similar in size with variety identified on an information card.
- Be familiar with crop input costs and the growing process
- Research and report on the history of the potato on the economy, immigration, diet and more

Safety

Keep yourself safe and help others stay safe, too. In the safety project you can learn about safety for water, fire, electricity, and recreational vehicles, identify farm hazards and make them less dangerous, make a first aid kit or a winter survival kit and more.

Create an Exhibit: After exploring your focus area in safety you can create an exhibit to share your learning your learning at the county fair or showcase. Exhibit ides include:

- A first aid or childcare kit with explanations for the items you included
- Create a public service announcement or social media toolkit to promote a safety topic of your choice
- List tips for being safe when home alone
- Attend and report on a safety program such as farm/livestock/animal, fire, flooding, food, firearms, ATV, to name a few
- Interview a safety professional and showcase their advice
- Research and create a plan to educate others about safe sun practices, wearing your seatbelt, not texting while driving etc.

Science Inquiry

What do you wonder about? What are you curious about? Turn those wonderings and curiosities into testable questions and conduct a science investigation! Design a science investigation to test a question. Analyze and interpret results to answer your question. Develop knowledge and understanding about what you were investigating.

Create an exhibit: Once you have decided on your question to investigate and design your experiment you can create an exhibit to share you learning at the county fair or showcase. Exhibit ideas include:

- Create a video exploring the properties of slime
- Display different bird feeders you used to determine if there is a preferred bird feeder type in your backyard

- Display showing the different types of treats and the data you collected as you explored how your dog responds to different treats during training
- Tri fold display board showing the results of your investigation of different types of sunscreens to see their effects on UV beads
- Slide shows illustrating different water filtration systems you tested, and the results analyzed to identify which one resulted in the cleanest water.

Science of Animals

Explore issues related to livestock health and wellness, breeding, facilities, and general care. Other topics include exploring careers, consumer issues, animal by products, zoonotic diseases and more. You can choose the animal of your choice from beef, dairy, goat, poultry, rabbit, sheep and/or swine.

Create an exhibit: After you have narrowed your focus and decided on the animal and topic of your choice you can create an exhibit to share your learning at the county fair or a showcase. Exhibit ideas include:

- Construct a feeding system after researching options to increase feed efficiency and reducing waste
- Investigate a disease and how to prevent or treat the disease
- Research facility needs and evaluate your housing situation and make changes accordingly and document in a display or report
- Create an exhibit educating the public on an aspect of your animal of choice around health, breeding, zoonotic, production or other.

Self-Determined

Do you have an idea for something you'd like to do? If it doesn't fit into a 4-H project area, no problem! You can still do 4-H project learning in the self-determined project. In the self-determined project, you can participate in a self-guided learning experience and present on it. These are learning experiences that members select, plan, and manage on their own. This is not a catch all category, but rather is focused on intentional self-directed learning.

Create an exhibit: After determining your path to your project you can create an exhibit to share your learning at a county fair or showcase. Exhibit ideas include:

- Share a portfolio describing the selection, planning and management of a serve learning project.
- Create a photo collage capturing the experience and stages of development of an event, planned, and facilitated in the member either individually or as part of team.
- Build a LEGO creation (not a kit) intended to include deeper learning that is not in any other project. This showcases the learning path of the youth.
- Develop a video or digital blog capturing the behind-the-scenes work done by an individual member while working as part of a team on a project or assignment.

Shooting Sports

Learn important life skills through safe and educational experiences. You can explore wildlife and firearms safety. You can participate in active disciplines depending on age including archery, BB, air, trap, .22, and black powder. Learn ethical behavior and responsibility when it comes to shooting sports and equipment.

Create an exhibit: After exploring all of the avenues you can learn about in this project area; you can create an exhibit to share your learning at a county fair or showcase. Exhibit ideas include:

- Create a display board demonstrating safety techniques applied to shooting activities, including range commands and range safety or eye and ear protection.

- Share information on shooting skills, such as basic safety rules, basic parts, and functions of each piece of equipment or care and maintenance.
- Design and create shooting sports equipment, including a pellet stand, kneeling role, target stand or quiver.
- County Fun shoot is a local opportunity for youth to experience a shooting sports contest.
    - Participants must be enrolled in the shooting sports project
    - Participants must have received a minimum of seven hours on the line-marksmanship/safety instruction per discipline with certified instructors
    - Participants must have received a minimum of 5 hours of wildlife education.
- In order to participate in the Minnesota 4-H State shoot there are more requirements to fulfill.

Small Engines/Tractor/Auto/Marine

Learn about the safety, fuels, maintenance, restoration and operation of tractors, small engines, machinery, automotive and marine engines, and components. There are so many engines and so little time, the possibilities are endless!

Create an exhibit: Once you have narrowed down your focus and decided on your field of study you can create an exhibit to share your learning at a showcase or county fair. Exhibit possibilities include;

- A small engine that has been reconditioned or repaired
- A device constructed by a member utilizing a small engine
- Display on the parts of an engine, etc.
- Exhibit focusing on any area such as automotive, implement, heavy machinery, tractor or marine
- Restored, reconditioned, rebuilt tractor, boat, car, golf kart
- Exhibit representing learning about tractor safety, history of, purchasing decision, establishing a custom business with your field or lawn tractor
- Modifying equipment for another purpose or to be more accessible to all

Small Grains/Legumes/Forages

This project area is a smaller focus of the larger agronomy/plant science project areas. Members focus on growing small grains, legumes and/or forages. Learning can include experimenting with different varieties, exploring use of technology and careers available.

Creating an exhibit
After exploring and learning about small grains/legumes and/or forages you can create an exhibit to bring to your fair or showcase event. These might include:

- A crop sample with variety labeled and planting method, two quart jar of wheat, oats, soybeans, barley, rye etc.
- A dried sample of alfalfa or other grass
- Specialty crops such as sugar beets, edible beans, popcorn in a clear container equaling 8 cups.
- A display about weed and pest control and pros and cons.
- A report about testing your soil and adding nutrients.
- Display explaining costs of production and/or marketing.

Technology

This expanding project area includes aquatic robotics, computers, and robotics. Expand your understanding of technology as you explore the impact of computers and robots on society. You'll gain skills in engineering design, research and development while learning to analyze and interpret data. Explore the impact of computers and robotics on society and how they make our lives better.

Create an exhibit
Once you have chosen your area of concentration in technology you can create an exhibit to bring to your fair or showcase event. These might include:

- Robot-and display of how you built, programmed, created the robot and its purpose
- Explain the foundations of computers and explore how computers work for various projects.
- Create an educational app
- Design computer hardware/software
- Display of careers in technology
- Exhibit an ROV and operation, show the use

Vegetable/Herb Gardening

Grow you own food! You might choose to grow your favorite herb, or vegetable. Explore how to plant, water, fertilize and prune your plant, how to manage weeds, insects, and diseases. Explore and try new varieties or new growing methods.

Create an exhibit
Once you have designed and planted your vegetable plot, your fruits, or herbs you can create an exhibit to bring to your fair or showcase event. When exhibiting be sure to include information on the vegetables and herbs included in the exhibit. These might include:

- A vegetable collection of six different kinds of vegetables for example one large specimen (cabbage, squash, melon, pumpkin, cauliflower etc.) three different medium vegetables specimens of 3 each (tomatoes, onions, peppers, cucumbers, kohlrabi, carrots, beets, turnips etc.) Two small vegetable specimens and 6-12 of each (green beans, peas, lima beans etc.)
- A vegetable plate of three different kinds of vegetables including one large, one medium (3 each) and one small (6-12 each)
- Educational display showing some aspect of raising or using herbs
- An herb container garden
- A dried sample of herbs you have raised, harvested, and dried
- Display comparing three varieties of the same kind of vegetable
- A mini vegetable garden planted in a tub
- Display showing different growing methods, use of fertilizer, location, watering, thinned versus un-thinned vegetables
- A largest vegetable contest including squash, cabbage, pumpkin, melons, field corn or cucumber

Veterinary Science

Investigate how to keep animals healthy, learn about basic anatomy, research diseases and prevention. Explore veterinary careers.

Create an exhibit
Once you have narrowed down your focus in the field of veterinary science you can create an exhibit to share at your fair or showcase event. These might include:

- A display focused on technology or industry advancements in veterinary science
- An exhibit on diseases of animals focusing on the history, management and/or prevention
- Display on use of medications in veterinary science
- A report on surgical and non-surgical procedures used in veterinary science
- An exhibit focused on careers in veterinary science
- Model of the skeletal systems of an animal

Video/filmmaking

Discover how videos are used in your daily life, for school projects or in a future career. Videography is art, communications, and technology all at the same time. Learn how to create and connect media messages through video/film.

Create and exhibit

After exploring all of the possibilities around video and filmmaking and deciding on your video story you can create an exhibit to share at your fair or showcase event. Any electronic device capable of capturing a video image can be used. If you use a drone youth must meet operator requirements. These might include:

- Showcase various video/film techniques
- A selected subject, include a storyboard or outline
- A poster that illustrates how a camera or device works, how to care for your equipment.
- A video made by blending computer technology and traditional camera created film
- Trail camera video and how you have used it
- A video/film using Claymation or stop action.
- Documentary of an issue in your community
- This is not a slide show.

Water Resources

Wetlands are important as they store water, clean it, and help prevent flooding. Learn how to protect wetlands and water quality, and we depend on our state's wetlands. Explore surface water, groundwater, pollution and how to be a good water steward.

Create and exhibit

Once you have explored, researched, and investigated the world of water resources, you can create an exhibit to share at your fair or showcase event.

- Demonstrate water's unique chemical/physical properties, such as how heat and salt affect water density or how a wetland ecosystem changes throughout the seasons.
- Exhibit showing how water is necessary for life, such as a display on water/wetland ecosystem services like filtration or nutrient cycles from plants.
- Share how water connects earth systems displaying local water cycle or watershed
- Research and report a local water body's thermoclines or nutrient cycles.
- Map out local, regional, state, or global water bodies and water quality

Wildlife Biology & Management

Explore Minnesota's diverse wildlife habitat in prairies, forests, wetlands, or your own backyard. Learn about wildlife populations, what impacts their habitats, and how to become a good steward of the land.

Create and exhibit

As you explore the unlimited possibilities in this project area you can create an exhibit to share at your fair or showcase event. These might include:

- Create a guide of local wild animals include habitat, diet, and shelter needs
- Explore and share basic concepts of wildlife management.
- Explain factors that threaten or endanger animal species such as urbanization, climate change or habitat loss
- Build a birdhouse, bat house or nesting structure include how and why
- Display a collection of identified wildlife scat (droppings), skulls, or skins. How do they differ?
- Journal your experience shadowing or volunteering at a nature center or park.

Youth Leadership

Learn how to be a leader in your club or community. Develop communication skills and build relationships with others. You might serve as a club officer, camp counselor, Cloverbud leader or more. Find the leader within you and make a positive impact.

Create and exhibit

Once you have served your community and made an impact you can share what you have learned and how your skills have developed through creating an exhibit to share at your fair or showcase event. These might include:

- A report on your youth leadership experience-planning, implementation, impact, and personal growth
- Develop a career and or college prep portfolio
- Present how you've built an understanding of leadership
- Share about leadership programs you have attended or led
- Explain how you have served as a mentor and/or teacher to younger youth
- Display sharing about skills you have developed serving as a club or county officer

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