



## AEROSPACE PROJECT AREA



*Do you want to learn about flight or space? It's all about moving through air and space in this project area. Whether you're flying kites, hot air balloons, airplanes, rockets, or reaching for the stars with astronomy, learn about our universe and what's beyond the Milky Way.*

### Ideas for Project Area Learning

- Make paper airplanes.
- Develop an interest and understanding of science, engineering, and technology.
- Develop problem-solving and logical reasoning skills.
- Improve communication and teamwork skills by working the way scientists and engineers do, in teams.
- Develop responsible attitudes about science and how it relates to the real world.
- Gain experience in problem solving and decision making using science process skills.
- Develop knowledge and skills related to aerospace.
- Identify different types of aircraft.
- Learn how weather affects flying.
- Learn star constellations throughout the year, and the stories told about them.
- Make and launch model rockets.
- Learn the forces that act on a rocket and experiment with roll, pitch, and yaw.
- Use your investigation skills to discover the principles of flight, rocketry, and astronomy.
- Design an experiment and enter your results in science and technology fairs.
- Use engineering principles to design air and space crafts.
- Construct an altitude tracker.
- Learn pilot certification requirements.
- Learn about airport issues in your county or across Iowa.
- Learn the science behind science fiction.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Do a presentation about life on the International Space Station.
- Prepare a working exhibit on the sizes of the planets in our solar system.
- Demonstrate what it takes to build a model airplane.

#### Civic Engagement

- Help clean up your local airport.
- Volunteer for a Young Eagles club.
- Give others tips to get through security in airports.

#### Leadership

- Teach younger kids to make model rockets.
- Bring your club to the local airport to learn more about airplanes and pilots.
- Lead a star-gazing session at an evening workshop or camp.

#### Entrepreneurship

- Start an online magazine about aviation topics or air travel.
- Start a radio show or podcast interviewing professionals in the industry.
- Write a book of safe and fun aerospace activities young people can do at home.



## Goal Setting and Record Keeping

Goal setting is an ongoing process that guides your project area learning. Having goals is like having a road map to show you how to get you to where you want to go. Record keeping is also an ongoing process and another important life skill. In 4-H, you are encouraged to select from a variety of record keeping formats to meet your own personal needs and your preferred learning style. Keeping records of your learning experiences helps you determine how well you met your goals. Goal setting and record keeping improve your skills in organization, communication, planning, and evaluating.

## Iowa 4-H Event Opportunities

- Participate in **county and state fair** exhibit classes.
- Check with your local county 4-H youth development staff to see if there are special events or **workshops in your county** that you want to attend to learn more about your project areas.
- Iowa 4-H members in grades 9–12 can apply for **State Project Area Awards** at State Recognition Day. Applications are open December through January.
- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.
- Each March, hundreds of student researchers in grades 6–12 meet with professionals to discuss their findings and compete for scholarships during the **State Science and Technology Fair of Iowa**.

## Share Your Learning With an Exhibit

- Make a poster on parts of an airplane or a rocket and their function.
- Create a display on different types of aircraft and what they are used for.
- Make a poster about the forces that act on an airplane or rocket.
- Chart the moon and make a display about how the moon affects the earth.
- Exhibit a model rocket.
- Demonstrate how weather affects flying.
- Create a display comparing birds and airplanes.

## CAREER CONNECTIONS

- **Aircraft mechanics** keep aircraft of all sizes in good working order. They complete inspections and perform maintenance checks and repairs.
- **Astronauts** go through physical training and learn to fly aircraft to lead their teams in missions to space.
- **Spacecraft designers** sketch, draw, and help with crafting large aircraft and engines suitable for space!
- **Pilots** manage weather and flight plans, inspect functions of aircraft, and fly passengers to and from cities.

## EDUCATION CONNECTIONS

- **Aerospace engineering** students research, design, and develop high-speed vehicles.
- Learn more about the planets, stars, galaxies, and how the universe has evolved with **astronomy**.
- Learn the behavior, life cycles, and materials of stars, planets, and galaxies with **astrophysics**.
- Obtain your **pilot's certificate** if you're interested in learning to fly and operate all types of aircraft.
- Students in **atmospheric science** learn about weather and climate events in outer space.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Bonnie Dalager, 4-H Product Development Specialist and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.



## AGRONOMY PROJECT AREA



*Get your hands dirty in agronomy! Find out how soils, bugs, beetles, and more affect your crops. Whether it's corn, soybeans, wheat, hay, or silage, 4-H agronomy helps you learn what makes plants grow.*

### Ideas for Project Area Learning

- Learn how soil, seeds, weather, pests, and fertilizer affect field crops.
- Learn the value and uses of field crops.
- Learn how new technology can change the way field crops are grown.
- Keep records of crop production.
- Plant something and watch it grow.
- Find differences when you plant seeds in different soils.
- Use different fertilizers and control weeds and pests.
- Identify what helps plants grow and what's harmful to them.
- Take a soil sample.
- Calculate growing degree days.
- Scout fields for growing conditions.
- Discover products that are made from field crops.
- Learn how to protect your plants from pests.
- Decide what varieties of crops to plant and at what time.
- Learn soil and nutrient requirements.
- Manage your crops based on integrated crop management principles.
- Explore career opportunities related to crop production.
- Calculate harvest losses and their causes.
- Calculate expenses and incomes to determine the profitability of field crops.
- Identify how new technology impacts crop production.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Show your group the difference between a healthy plant and a sick one.
- Do a presentation on sampling soil.
- Develop a journal with the details of the fields you scout.

#### Civic Engagement

- Help teach others about farm safety.
- Join and participate in a farm commodity association.
- Organize and lead an appreciation event for farmers during harvest.

#### Leadership

- Create farm safety rules for your family and share with others.
- Plan a tour of a seed corn plant for your group.
- Develop a harvest loss frame and use it to help other farmers calculate their harvest losses.

#### Entrepreneurship

- Start a niche online gift shop for farmers and their families.
- Grow herbs, sweet corn, or vegetables to sell at a local farmer's market.
- Create planting or harvest care packages people can buy for their farming friends or neighbors.



Exhibit resources, related events, and record keeping forms are available on our website.

[www.extension.iastate.edu/4h/projects/cropproduction](http://www.extension.iastate.edu/4h/projects/cropproduction)

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- Each March, hundreds of student researchers in grades 6–12 meet with professionals to discuss their findings and compete for scholarships during the **State Science and Technology Fair of Iowa**.
- Iowa 4-H partners with Iowa State University Integrated Pest Management to host an annual **Crop Scouting Competition** for youth in grades 8–12.

## Share Your Learning With an Exhibit

- Create a booklet of all the uses of corn and soybeans.
- Make a poster with a diagram of cut-off corn stalks and show the growing point.
- Keep a journal of your plans, recording rainfall and other weather data.
- Produce a video about the role of legumes in fixing nitrogen in the soil.
- Create a display showing potential safety hazards on a farm. Educate others on ways to prevent them.
- Design a poster to teach others about the information provided on seed labels.
- Develop a field map showing the locations you checked for stand counts.

## CAREER CONNECTIONS

- **Farmers** make decisions about how to get the most yield with the fewest inputs.
- **Agronomists, extension specialists and crop consultants** are professionals who help farmers make decisions about how to best manage their crops.
- **Plant breeders** create new types of crops using both traditional and modern technology.
- Seed companies need employees to make, promote, and sell seed to farmers. Jobs might include **marketing, sales, seed quality testing, and growing seed**.

## EDUCATION CONNECTIONS

- **Agronomy** is the major at most colleges that focuses on crop production and crop science. This is a good major if you are interested in a career in science, production agriculture, or consulting with farmers.
- If you are interested in doing scientific research that improves crop production, study **entomology** (insect pests), **plant pathology** (plant diseases), **soil science**, or **genetics**.
- Students in **agricultural business** learn about marketing agricultural commodities, managing a farm, and selling agricultural products.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Maya Hayslett, 4-H Crops Specialist, Bonnie Dalager, 4-H Product Development Specialist, Iowa State University Extension and Outreach.

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## BEEF PROJECT AREA



*In the 4-H beef project, you can select from a breeding animal or a market animal. Breeding animals allow you to start your herd while market animals produce meat products for people.*

### Ideas for Project Area Learning

- Learn the basic principles of animal science by owning, caring for, and keeping records on one or more head of livestock.
- Demonstrate knowledge of sound breeding, feeding, and management practices.
- Learn the value of scientific research and its influence on animals and the meat industry.
- Know your beef breeds.
- Select your animal.
- Identify parts of the animal and cuts of meat.
- Train your calf to lead.
- Feed your animal.
- Learn to show your animal.
- Groom your animal.
- Learn about beef by-products.
- Determine the quality grades of cattle.
- Recognize a healthy animal.
- Ramp up your judging and meat-grading skills.
- Understand the digestive system.
- Identify common external parasites and other health issues.
- Understand medication uses, storage, how to administer medication, and how it relates to food safety.
- Learn the appropriate handling techniques and proper housing for beef cattle.
- Balance a beef ration and understand feed quality.
- Learn about breeding and reproduction techniques.
- Learn to identify and treat common diseases.
- Evaluate beef carcasses and market your product.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Teach someone the essential traits in selecting a breeding heifer.
- Create a poster showing the beef cuts and how to prepare them.
- Share a presentation on the importance of following drug labels.

#### Civic Engagement

- Volunteer to do beef promotion presentations during May beef month.
- Provide a beef taste testing at a grocery store to promote local foods.
- Volunteer to help at the county fair weigh in.

#### Leadership

- Arrange a tour of your farm.
- Start a beef livestock judging team with the help of an adult volunteer.
- Lead a beef grooming and showmanship clinic for other 4-H members.

#### Entrepreneurship

- Package and sell cuts of grass-fed beef.
- Sell beef calves to local 4-H members as fair projects.
- During the fair season, sell beef shearing services.



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- Apply for an in-depth hands-on learning experience on the Iowa State University campus during the three-day **Animal Science Roundup** late June. Youth in grades 8–12 are welcome to apply.
- **Livestock Quiz Bowl** is a team event for 4th–12th graders where they test their knowledge of beef, sheep, swine and meat goats. This event takes place each Spring on the Iowa State University campus.

## Share Your Learning With an Exhibit

- Participate in the 4-H beef show at your county fair or the Iowa State Fair.
- Show in breeding heifer, cow-calf, bottle bucket calf, market beef, showmanship, or rate of gain.
- Demonstrate the nutritive value of beef.
- Do an exhibit on feeding rations.
- Make a poster comparing various preventative vaccinations.
- Make a book that shows your daily routine in caring for animals.

## CAREER CONNECTIONS

- **Livestock appraisers** determine market values of animals being sold or insured and document loans, audits, and insurance claims.
- **Livestock judges** provide fair evaluations of livestock and advocate for the industry.
- **Meat inspectors** work at private commercial slaughtering plants, inspecting animals before and after slaughter.
- **Animal geneticists** analyze the genetic makeup of animals to discover which genes cause them to act in certain ways or be immune to specific diseases.

## EDUCATION CONNECTIONS

- Students in **animal science** focus on the management of livestock species, as well as meat science, genetics, and nutrition.
- If you enjoy microbiology, chemistry, and genetics, studying **biology** may interest you.
- Learn **veterinary technology** if you're interested in animal health, anatomy, and disease transmission.
- If you enjoy teaching others about livestock production, leading activities, and mentoring others, you may enjoy a career in **agricultural education**.

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## CHILD DEVELOPMENT PROJECT AREA



*This 4-H project is designed to help you explore the world of child development. From discovering how children develop, creating safe places to grow, to learning leadership skills, you are bound to love all the opportunities available with child development projects!*

### Ideas for Project Area Learning

- Investigate the ways people grow.
- Celebrate differences in yourself and others.
- Observe how people express emotions.
- Learn about responsibility and self-motivation.
- Identify home safety hazards.
- Keep children safe from toys that are choking hazards.
- Learn to plan some fun and safe home-alone activities.
- Sort and select age-appropriate toys for babies, toddlers and preschoolers.
- Identify children's strengths and talents to work effectively in teams.
- Discover healthy food choices in planning and making meals.
- Explore safety concerns by inspecting your own home.
- Explore careers in the child development field and job shadow professionals.
- Learn child guidance and discipline techniques.
- Learn about disabilities that create special needs for children and adults.
- Study a public building to evaluate accessibility for persons with disabilities.
- Learn about parenting roles and responsibilities.
- Observe a child's physical, cognitive, emotional, and social skills.
- Learn the necessary skills needed as a babysitter or potential parent.
- Identify characteristics of children ages birth to six years old.
- Discover more about yourself and others.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Read books or stories you have written to younger children.
- Create a puppet show to teach children street-smart safety tips.
- Visit with Clover Kids members about their county fair projects.

#### Civic Engagement

- Collect puzzles, games, and toys for a local childcare center.
- Access the safety of a community playground and work for changes.

#### Leadership

- Organize a toy drive and donate items to children in the community.
- Volunteer in your community to help with 4-H educational Clover Kids activities.
- Create a family job chart.

#### Entrepreneurship

- Provide babysitting services or help lead educational workshops for kids.
- Write a children's book.
- Make baby blankets or baby clothes to sell.



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- Meet high school students from around the nation and develop your skills to address today's issues like nutrition education, wellness, and emotional wellbeing at the **National Healthy Living Summit**.

## Share Your Learning With an Exhibit

- Create a display of a choke-tube tester and toys that are safe and unsafe.
- Illustrate how to make a family job chart.
- Share a diary of all the changes a small child goes through after observing them for a few months.
- Create a game or puzzle to use with children and share the results.
- Showcase a book you have written, illustrated, and shared with children.
- Prepare an age-appropriate scavenger hunt and display the results.
- Demonstrate the development of a fun and safe home-alone plan.
- Rate the safety and appropriateness of various toys for babies, toddlers, and preschoolers.

## CAREER CONNECTIONS

- **Teachers** work to create lesson plans, track student progress, create tests, and present information to parents.
- **Psychologists** counsel patients to promote positive mental health.
- **Coaches** plan, organize, and deliver a range of sports activities and programs.
- **Social service caseworkers** provide assistance and counseling to children in troubled homes, senior citizens, and more.
- **Youth program coordinators** train staff to promote youth programs.

## EDUCATION CONNECTIONS

- If you enjoy working with children, scheduling, and leading projects, consider **education**.
- Learn **psychology** if you're interested in the behavioral, emotional, and cognitive development of children.
- Students in **pediatric nursing** learn about performing tests, comforting sick patients, and advising parents about health decisions.
- **Child, adult, and family services** students train to help people lead better lives.
- Students in **speech pathology** learn how to treat children with communication disorders.

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## CIVIC ENGAGEMENT PROJECT AREA



*Make a difference. Discover the needs of your local community and beyond! Help others! Get into action! Civic engagement is the opportunity, right, and responsibility to contribute to shaping the world around you and provide service to others.*

### Ideas for Project Area Learning

- Get to know the other people in your club and what they like to do for fun.
- Construct a family tree of relatives identifying places lived and locations.
- Interview a neighbor and identify the similarities and differences between you.
- Create and carry out a plan to help someone outside your family.
- Discover the history of your school or community.
- Tour your city or state courthouse or capitol.
- Help pick up trash at a park.
- Find out the names of your local or state representatives and the committees they serve on.
- Collect samples of club bylaws and constitutions. Compare and contrast them.
- Observe a community board meeting.
- Create and carry out a plan to help someone in your community.
- Volunteer to be a tutor or a mentor in your school.
- Investigate the departments in your county governments and find out what they do.
- Interview someone from your local chamber of commerce or economic development agency to learn about the goals for your community.
- Identify a cause important to you and determine how to make a difference.
- Map out area resources available to youth and families.
- Explore your relationships with others.
- Get involved! Be an active, responsible citizen.
- Show social responsibility, respect, and response to the needs rights and responsibilities of others.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Give a presentation about the history of your school or town.
- Make an appointment with your state legislator and share your thoughts on an issue.
- Read newspapers or news magazines regularly.
- Research a community issue and share your ideas with the appropriate board or governing body.

#### Leadership

- Ask your local nursing home residents how they would like to celebrate the next holiday and involve others to carry-out that plan.
- Get approval and then create and conduct a survey for students on a school issue. Share the results with the administration.
- Serve as a youth delegate to a state political party convention.

#### Entrepreneurship

- Write an online magazine or blog on great ideas for service projects.
- Create a decoration or party favor for fundraising event coordinators.
- Start a walking/biking class for people in your community to bond over.



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- Travel to Washington D.C. to learn about being a leader in your community and the world through **Citizenship Washington Focus**.
- Apply to be an Iowa Delegate to the **National 4-H Conference** through State Recognition Day. Delegates research important topics and present solutions to national agencies.

## Share Your Learning With an Exhibit

- Create a “welcome to our school” kit to be given to new families.
- Map the resources for youth and families in your community.
- Report your exploration of an issue and define how each branch of government plays a role in its creation, interpretation, and carry-out.
- Research candidates for the next gubernatorial election and put a notebook together, sharing their stance on different issues.

## CAREER CONNECTIONS

- **State legislators** frame policy and pass laws for the people they represent.
- **School counselors** work as advocates for students well-being and are valuable resources for educational advancement.
- A **nonprofit manager’s** job is to analyze the impact of the organization and ensure it is meeting its legal and fiscal responsibilities.
- **City Administrators** oversee staffing and finances for a city.

## EDUCATION CONNECTIONS

- Learn **citizenship and civic engagement** if you’re interested in policy research, conflict management, and community collaboration.
- Students who get their **leadership certificate** learn more about leadership roles, emotional intelligence, and how to lead change.
- If you enjoy the nature of politics, public values, and institutions and their process, you may enjoy **political science**.
- **Public administration** students learn more about campaign relations, legislative analysis, communication, and policy development.

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## CLOTHING PROJECT AREA



*This 4-H project is designed to help you explore the world of clothing. Fashions fade—learn to make your style your own and timeless in the clothing project. Discover what looks best on your body, how to make it, where to buy it, and how to care for it.*

### Ideas for Project Area Learning

- Learn sewing machine parts, sewing tools, and how to sew on buttons.
- Examine the cost savings of buying new versus used clothing and accessories.
- Understand how fabrics are made from fibers.
- Learn how to sew garments using patterns and elements of design.
- Discover your image through clothing and accessories.
- Compare different fabrics, yarns, and finishes.
- Discover how to sew garments integrating the principles of design.
- Learn the pros and cons of different types of retail sales, various methods to pay for clothing, and techniques for assessing product advertisements.
- Understand the differences between natural and human-made fibers.
- Examine the effects of stage lighting on various colors and materials for costume design.
- Create a capsule wardrobe for a specific occasion, vacation, or time of year.
- Discover how to take part in a fashion show.
- Review and evaluate personal care products or tools for skin and hair.
- Discover your style with color and line.
- Design an outfit on paper for a specific event or activity.
- Create an efficient system for doing your laundry.
- Learn how different types of fabrics are made.
- Learn how to take great photographs of clothing for online sales or fashion blogs.
- Learn about the fashion of a decade or era in history.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster identifying sewing machine parts.
- Create a 4-H video demonstrating how to sew on a button.
- Teach others how to use a sewing machine.

#### Civic Engagement

- Collect gently used jeans and donate to a local shelter.
- Volunteer to sort donated clothing at second-hand stores.
- Organize a community clothing drive.

#### Leadership

- Make a stain removal chart and kit for your family's laundry area.
- Assist family members in going through their closets to recycle unused clothing.
- Bring your family or club together to organize a clothing garage sale.

#### Entrepreneurship

- Design and build costumes or accessories to sell.
- Write a business plan for organizing services or personal shopping.
- Provide sewing alterations for casual wear or special occasion apparel.



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- 4-H members in grades 9-12 are selected at their county clothing show for participation in the Iowa 4-H **Awardrobe Clothing Event** at the Iowa State Fair.

## Share Your Learning With an Exhibit

- Select multiple fabrics and compare fabric content, durability, wrinkle resistance, absorbency, colorfastness, and proper care.
- Show how to make necessary clothing repairs with a needle and thread.
- Illustrate how integrating design elements and principles can flatter body shapes and positively impact people's first impressions.
- Create a poster identifying fabrics based on the type of fibers, construction, finish, and coloring methods.
- Describe the process of sorting laundry and the effects of water temperature or detergent on fabrics.

### CAREER CONNECTIONS

- **Costume designers** work with a production team to design, create and care for theatrical costumes.
- **Garment technologists** work on the design and development of new materials.
- **Fashion designers** work in any area of specialty, designing clothes for large brands, boutique labels, or do freelance work.
- **Retail buyers** source and stock items for retail outlets in advance of each coming season.
- **Textile designers** create two dimensional patterns for interior fabrics or garment fabrics.

### EDUCATION CONNECTIONS

- Learn **apparel merchandising** if you're interested in how to apply marketing strategies and entrepreneurial practices for buying, displaying, and promoting fashion items.
- If you enjoy sketching and envisioning garments prior to them being made, studying **technical and creative design** may interest you.
- Students in **product development** learn about trends and business aspects of planning, creating, and presenting products to fill niches in the clothing markets.

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## COMMUNICATION PROJECT AREA



*Do you talk to friends? Take part in a school play? Write reports? Read books? See how the world of communication impacts you every day by participating in the 4-H communication project area. Learn about yourself and others!*

### Ideas for Project Area Learning

- Develop self-confidence through public presentations.
- Learn about the different ways you can express yourself creatively through communication.
- Illustrate puppetry and stagecraft skills.
- Learn how to organize and present information.
- Introduce a speaker at your club meeting.
- Learn the parts of speech.
- Write a thank-you note.
- Learn about puppets used around the world.
- Use clothing to create a character.
- Practice communicating with gestures.
- Add voice to a character.
- Learn and practice electronic etiquette.
- Learn to make good impressions with new people.
- Practice using technology with presentations.
- Develop listening skills. Observe and record listening types at your next meeting.
- Observe others in conversation keep a journal of your findings.
- Prepare for an interview by practicing with your leader.
- Prepare a resume.
- Learn how to project when playing a part on stage.
- Observe others' body language when giving a speech and determine best practices.
- Plan and perform a puppet show for a daycare center.
- Learn about text message etiquette and safety.
- Write poetry or participate in poetry readings.
- Learn how makeup is used to communicate the personality of a clown in performance.

### APPLY WHAT YOU'VE LEARNED

#### Civic Engagement

- Volunteer to teach Clover Kids how to do a new skill.
- Try out for a part in a local community theatre production.
- Construct props for a school play.
- Present puppet shows at a daycare.
- Write an article for a community organization you care about.

#### Leadership

- Write a short play for your 4-H club to perform.
- Help another member prepare their working exhibit or presentation.
- Volunteer to organize publicity for a community event.
- Direct a school or community theatre play.
- Offer to serve as the speaker for public club events.

#### Entrepreneurship

- Write and present a play.
- Create an entertainment service such as puppets, DJ services, or skits for corporate events.
- Begin freelancing as a social media manager for small local businesses.
- Draft fliers or marketing materials for small business owners.



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- Explore careers in communications by participating in the **Iowa 4-H Reporters** program. Apply through State Recognition Day in December through January.
- Be a leader and an advocate for Iowa 4-H by serving as an **Iowa 4-H State Council** member.

## Share Your Learning With an Exhibit

- Give an educational presentation working exhibit or extemporaneous speech.
- Perform in the “share the fun” class at the fair.
- Make a poster to demonstrate the use of visual aids.
- Construct a puppet theatre and puppets.
- Prepare an exhibit describing steps in preparing a speech.
- Write a short story or a novel.
- Make an audio file of sound effects to use with a play.

## CAREER CONNECTIONS

- **Public relations specialists** establish and maintain good-natured, cooperative relationships with the news media, consumers, government, and local communities.
- **Motivational speakers** motivate and incentivize a crowd to do something more with their lives.
- **Journalists** research, write, edit, proofread, and file news stories and articles.
- **Brand managers** research and create strategies to create a positive view of the brand.

## EDUCATION CONNECTIONS

- If you're interested in product design, pricing, and promotion, you may enjoy **marketing!**
- Students in **journalism** focus on generating ideas, writing, editing, and presenting information to mass audiences.
- Learn **English** if you're interested in literature, rhetoric, or creative writing.
- Students in **agricultural communications** study public relations and communications.
- Students in **organizational leadership** learn how communication is important to leaders and can impact business operations.

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## COMPUTER SCIENCE PROJECT AREA



*Get connected with hardware and software! Explore the digital side of life by building computers or learning how to use or program them for gaming, staying connected, solving problems, and building virtual networks.*

### Ideas for Project Area Learning

- Develop an interest in and understanding of computers and networking.
- Develop problem-solving and logical reasoning skills.
- 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 world and people's lives.
- Gain experience in problem-solving and decision-making using science process skills.
- Develop knowledge and skills related to computer hardware and software.
- Learn about computers and the internet, how they work, and how you use them.
- Teach your grandparents how to use a digital device or Internet application you like.
- Learn and practice electronic etiquette.
- Use computer hardware and software tools and skills to build a computer network, simple program, or social network tool.
- Learn about the proper care of your computer and computer accessories.
- Learn about the history of computers.
- Find out how computers are used in various industries.
- Keep a notebook with computing terms to reference.
- Learn the function keys or shortcut keys for a favorite program you use.
- Learn a proper technique for keyboarding.
- Discover the elements of proper email etiquette.
- Create your own database to track a collection.
- Learn about consumer skills when buying a computer.
- Discover the various safety and security issues related to computers.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Prepare an educational presentation on computer programming.
- Practice using technology with presentations.
- Practice essential skills for having an interview through video chat.

#### Civic Engagement

- Use a computer and network hardware media and skills to address personal or community issues.
- Offer to manage social media for a local nonprofit.
- Create an app to help people find volunteer opportunities.

#### Leadership

- Teach younger kids how to be safe when using social media.
- Organize a field trip to a local lab business to learn how computers and technology inform what they do.
- Lead a workshop on a computer program or platform at your local senior center.

#### Entrepreneurship

- Design websites for businesses.
- Create open source mobile apps.
- Sell digital items through a print-on-demand platform online.



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- Each March, hundreds of student researchers in grades 6–12 meet with professionals to discuss their findings and compete for scholarships during the **State Science and Technology Fair of Iowa**.
- Work with your 4-H club or county council maintaining databases or helping with social media posts.

## Share Your Learning With an Exhibit

- Make a poster on the parts of the computer.
- Create a display of social media etiquette and safety.
- Exhibit a simple computer game that you wrote.
- Do an educational presentation on the history of computer languages.
- Build a computer.
- Use a computer program to design a quilt or wall hanging or make a digital model of an item you are creating or engineering.

### CAREER CONNECTIONS

- **Information technology support** works to install and configure computer hardware, software, systems, networks, and scanners.
- **Software engineers** work to test software development, provide maintenance, design and develop tests, and more!
- **Web developers** are responsible for designing, coding, and modifying websites.
- **Database administrators** work to modify existing database software and secure data.
- **Computer systems analysts** assess technology systems and recommend changes.

### EDUCATION CONNECTIONS

- If you are interested in how to make computers and understanding software and web design, **computer programming** may be for you!
- Students who study **computer science** learn about programming systems, software development, and math related to computers.
- Learn **software engineering** if you're interested in designing, implementing, and testing software systems.
- Students in **management information systems** learn office telecommunications and perform system analysis.

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## CONSUMER MANAGEMENT PROJECT AREA



*Use the consumer management project to get more bang for your buck! Find out how to use your money to get the things you want and need.*

### Ideas for Project Area Learning

- Identify needs and wants and how you spend your money on each.
- Make informed consumer decisions to reach your goals and to solve problems.
- Know your rights as a shopper.
- Set a budget to make a list and go shopping.
- Make a list of your needs and your wants and write down how you spend your money on each.
- Compare the costs of similar products, different stores, or brands.
- Develop a savings plan to save for an item that you want to buy.
- Set goals to spend your money wisely.
- Learn why you decide to buy what you do. Topics include: advertising, perceived needs, and priorities.
- Identify the benefits of different savings account options.
- Identify and make ethical decisions in earning and spending your money.
- Compare return policies of different vendors stores and online.
- Set saving, spending, and sharing goals for your money.
- Identify the actual cost of different kinds of credit.
- Develop a plan for the future: college, car, and independent living.
- Learn about consumer rights and how to use them effectively.
- Compare warranty policies on different brands and stores for similar items.
- Study the costs of fraud.
- Learn about financial security and privacy issues.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster comparing similar products.
- Do a presentation about advertising techniques.
- Talk to a group about different Internet shopping sites and the value or concerns with those.

#### Civic Engagement

- Give a portion of your money to a cause you believe in.
- Volunteer to help manage money at a fundraiser.
- Go to a senior center and teach adults about safe online shopping.

#### Leadership

- Help your family identify needs and wants.
- Serve as the treasurer of a group or club.
- Organize a fundraiser for a cause that you believe in.

#### Entrepreneurship

- Manage a garage sale.
- Create a business where you shop best deals for consumers.
- Sell budget-friendly pre-planned menus for home cooks.



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- Work with your 4-H club or county council as a treasurer.

## Share Your Learning With an Exhibit

- Compare the price of similar pieces of clothing at a variety of places.
- Learn what happens to clothes donated to a thrift store if they don't sell.
- Track your spending for a month and see where your money goes.
- Track your spending related to each of your 4-H projects.
- Track how you spend another of your resources—your time.
- Compare colleges, trade schools, or other educational opportunities.
- Explore advertised products; who were the various target audiences?

### CAREER CONNECTIONS

- **Financial Planners** work with families and businesses to reach short- and long-term financial goals.
- **Retail Sales Associates** work to greet customers, offer assistance, and provide product information.
- **Retail Buyers** plan, select, and purchase merchandise to sell in stores.
- **Financial Managers** review reports, accounts, and search for ways to include profitability for companies.

### EDUCATION CONNECTIONS

- Learn **financial counseling and planning** if you're interested in giving advice on investments, taxes, and college savings.
- If you enjoy educating youth and adults, managing personal finances, and creating healthy relationships, **family and consumer sciences** may interest you!
- Students in **accounting** learn reporting, budgeting, tax information, and more!
- Learn **data science** if you enjoy computer programming, data analysis, and thinking critically.

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## DAIRY CATTLE PROJECT AREA



*The dairy industry is one of the foundations of agriculture. There's more to it than just producing milk! The dairy industry is a sophisticated one, and there's a lot to learn.*

### Ideas for Project Area Learning

- Learn about dairy breeds.
- Select your animal.
- Identify parts of the animal.
- Learn to evaluate your animal.
- Feed your animal.
- Demonstrate multiple showing techniques.
- Groom your animal.
- Keep cost records.
- Research where to find answers to all your dairy questions.
- Learn showmanship techniques.
- Ramp up your judging skills.
- Make ethical decisions.
- Identify a sick animal, how to treat it, and future prevention.
- Understand medication—uses, storage, administering medication, and how it relates to food safety.
- Learn appropriate handling techniques and housing of dairy cattle.
- Evaluate feed quality and how it affects digestion.
- Find a career in dairy production.
- Learn body condition scoring.
- Debate animal welfare issues.
- Use records to make management decisions.
- Investigate the signs and causes of mastitis.
- Balance a dairy ration.
- Learn about breeding and reproduction techniques.
- Promote the dairy industry.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster on dairy breeds.
- Take part in a quiz bowl contest.
- Teach others about showmanship techniques.
- Give a speech on the importance of the dairy industry.

#### Civic Engagement

- Have your animal as part of a petting zoo sharing the importance of dairy.
- Be a part of a dairy promotional event.
- Lead tours of Dairy Farm Operations within your community.

#### Leadership

- Arrange for your class to tour a dairy farm.
- Be a mentor for a younger dairy cattle project area member.
- Organize a county grooming clinic.

#### Entrepreneurship

- Sell milk, butter, and cheese at your local farmers market.
- Create and sell feed troughs for cattle.
- Host a petting zoo of dairy calves.



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- Apply for an in-depth hands-on learning experience on the Iowa State University campus during the three-day **Animal Science Roundup** late June. Youth in grades 8–12 are welcome to apply.

## Share Your Learning With an Exhibit

- Assemble an emergency or medical kit.
- Investigate the carcass merit of dairy steers.
- Design a poster on the many dairy breeds.
- Learn proper selection and how to judge your animal.
- Make a display on proper feed rations.
- Do a presentation on how artificial insemination and cloning has changed the dairy industry.
- Give a presentation on how to groom your animal.

## CAREER CONNECTIONS

- **Food science technicians** test food and food additives and help scientists with food research, development, and quality control.
- **Dairy farm managers** supervise all aspects of dairy production, including preparing feed, maintaining equipment, and managing the herd.
- **Livestock judges** evaluate animals at shows and teach exhibitors more about their animals through effective communication.
- **Agricultural education teachers** teach students about livestock production and get students involved in the community.

## EDUCATION CONNECTIONS

- Study **dairy science** if you are interested in animal health, management, and how lactation works in animals.
- Learn how to effectively run a farm, as well as how to use marketing, finance, operations, and production to excel with **farm management**.
- Students who study **veterinary medicine** learn more about biology and microbiology, with an emphasis on animal studies.
- Study **food and nutrition** if you are interested in maintaining health, preventing diseases, and improving nutrition.

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## DAIRY GOAT PROJECT AREA



*The dairy industry is one of the foundations of agriculture; there's so much more to it than just producing milk! Most think of only dairy cattle that produce dairy products. Time to consider the dairy goat project area.*

### Ideas for Project Area Learning

- Acquire skills in dairy goat production through ownership and care of dairy goats.
- Learn marketing, processing, distribution, consumption, and use of dairy products.
- Discover selecting your project, raising it, or finding a career in the industry.
- Learn the nutritive value of dairy products and promote their use.
- Know your dairy breeds.
- Select your animal.
- Identify parts of the animal.
- Groom your animal.
- Learn showmanship techniques.
- Ramp up your judging skills.
- Make ethical decisions.
- Identify a sick animal, how to treat it, and learn future prevention.
- Learn the appropriate handling techniques and housing of dairy goats.
- Evaluate feed quality and how it affects digestion.
- Debate animal welfare issues.
- Use records to make management decisions.
- Investigate the signs and causes of mastitis.
- Learn about breeding and reproduction techniques.
- Promote the dairy industry.
- Learn how to register and keep records on your animal project.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster on dairy goat breeds.
- Teach others about showmanship techniques.
- Give a speech on the importance of the dairy industry.

#### Civic Engagement

- Have your animal as part of a petting zoo and share the importance of dairy.
- Be a part of a dairy promotional event.
- Lead tours of Dairy Farm Operations within your community.

#### Leadership

- Arrange for your class to tour a dairy goat farm.
- Organize a county grooming clinic.
- Attend a national or regional conference and encourage other youth to attend.

#### Entrepreneurship

- Sell milk, butter, and cheeses to local businesses and markets.
- Create a small animal petting zoo.



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## Share Your Learning With an Exhibit

- Assemble an emergency medical kit.
- Create a poster explaining how to tack your dairy goat properly.
- Design a poster on the many dairy goat breeds.
- Give a demonstration of proper feeding techniques for showing.
- Create a display on proper feed rations.
- Prepare a dairy goat show kit.
- Describe the proper terms when talking about dairy goats.

## CAREER CONNECTIONS

- **Agricultural education teachers** teach students about livestock production, lead activities, and get students involved in the community.
- **Food science technicians** test food and food additives and help scientists with food research, development, and quality control.
- **Livestock judges** evaluate animals at shows and teach exhibitors more about their animals through effective communication.

## EDUCATION CONNECTIONS

- Learn how to effectively run a farm, as well as how to use marketing, finance, operations, and production to excel with **farm management**.
- Students who study **veterinary medicine** learn more about biology and microbiology, with an emphasis on animal studies.
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## DIGITAL STORYTELLING PROJECT AREA



*In this project area, you get to tell your story or the stories of others by learning all about the production process and technology that makes it possible. Zoom in on animation, video production, editing, sound production, image manipulation, and the secrets to telling a story.*

### Ideas for Project Area Learning

- Develop an understanding of digital storytelling.
- Develop problem-solving and reasoning skills.
- Improve communication and teamwork skills by working the way professionals do in the real world, on production teams.
- Develop responsible attitudes about technology and how it relates to the real world and people's lives.
- Gain experience in problem-solving and decision-making using science process skills.
- Learn about cameras and microphones and their functions.
- Discover light and sound techniques that make quality productions possible.
- Analyze various media forms and evaluate their use in different situations.
- Use digital storytelling tools to create an image video or audio project.
- Play with audio- and video-editing software.
- Discover how audio can enhance the quality of video production.
- Discover how design elements and art principles impact your message.
- Work with the different media styles and evaluate when each would be the most effective at telling a story.
- Use digital storytelling hardware software in communication principles to tell a compelling story.
- Use your skills to create a 4-H story for member recruitment in your county.
- Use your digital storytelling skills to bring awareness to a need in your community.
- Organize a local media event for youth to exhibit and share their storytelling productions.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Enter a video or film competition for youth.
- Create an exhibit for your county fair or do an educational presentation about the technology or technique you used.

#### Civic Engagement

- Use video or audio production to inspire community members or your city council to act on a topic relevant to you.
- Use your digital storytelling skills to help a local nonprofit.

#### Leadership

- Organize a field trip to a local lab, business, or industry to learn how they use digital storytelling.
- Teach a workshop on video production or image editing during a day camp.

#### Entrepreneurship

- Host a drive-in movie night to display your video or film.
- Create short videos as a freelancer for small businesses.
- Make review or educational videos for online platforms with earning potential.



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- Apply to be a part of the **Iowa 4-H Reporters** program through State Recognition Day. Participants will work with industry professionals as a reporting team at the Iowa State Fair.
- Work with your 4-H club or county council to create promotional or event-related videos.

## Share Your Learning With an Exhibit

- Develop a presentation or working exhibit that shows a technique in digital storytelling.
- Do a working exhibit on developing a storyboard.
- Make a poster on the different shot angles for videos.
- Determine what impact sound has on video production.
- Learn something new and share your findings in a video.
- Create a timeline with visuals of significant events in the development of media messaging.
- Develop a workshop that shows others how to analyze media for its impact.

## CAREER CONNECTIONS

- **Digital campaign strategists** work to develop solutions to meet brand objectives based on consumer data.
- **Video editors** are responsible for editing and assembling footage, sound, and special effects.
- **User interface designers** make sure web pages have interaction opportunities and will conform to the rest of the website.
- **Content creators** promote content on social media by advertising products and writing.
- **Animators** draw and write images that come to life on screen.

## EDUCATION CONNECTIONS

- Study **journalism and mass communication** if you enjoy writing, multimedia production, and presenting across a variety of media platforms.
- Students in **marketing** learn more about communications, and personal selling.
- If you enjoy talking with others and finding the best ways to present information, study **communication studies**.
- Students in **design** unleash their creativity through drawing and computer techniques!
- If you explore your creativity through stories and poetry, **creative writing** may be for you!

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## DOG PROJECT AREA



*Dogs make great pets! Dogs are also used for sport and to assist in working with livestock. The dog project area helps you explore what kind of dog fits into your family's lifestyle and how to be an excellent trainer and caretaker for your dog.*

### Ideas for Project Area Learning

- Gather information and determine the best dog for your family.
- Learn about the proper care, grooming, and feeding of your dog.
- Learn to identify the parts of your dog for conversations with your pet.
- Create a plan to prevent your dog from getting lost or finding it if it does get lost.
- Purchase and use the appropriate grooming equipment and techniques.
- Practice appropriate training for your dog.
- Plan a training and exercise program for your dog.
- Prepare for participation in a dog show.
- Decide to breed or not breed your dog.
- Compare the labels on dog food to make an informed decision on content and price.
- Keep a diary of your dog's health and eating habits.
- Research cattle facilities in your area and decide if one is right for your dog.
- Create a trainer's diary to assist you when you work with your dog.
- Interview someone who uses a service dog to assist them.
- Help a friend decide on dog ownership.
- Research diseases in dogs.
- Identify symptoms and a course of action if your dog gets sick.
- Learn major dog breeds and identify their characteristics.
- Study the responsibilities of dog ownership.
- Learn dog health regulations, first aid, and simple treatments for ailments.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Prepare a demonstration on how to approach a dog safely.
- Demonstrate how to prepare a dog for showing.
- Make a poster of how to select a nutritional diet for your dog.

#### Civic Engagement

- Help clean up your local dog park.
- Volunteer at an animal shelter.
- Write a letter to your local paper about the importance of having dogs spayed or neutered.

#### Leadership

- Organize a dog show for your club.
- Organize a fundraiser to help benefit an animal shelter.
- Organize a dog therapy club in your community.
- Develop a plan to foster dogs of deploying soldiers.

#### Entrepreneurship

- Provide dog walking services for your local community.
- Create a local business for dog training.
- Make and sell dog toys or unique dog treats.



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## Share Your Learning With an Exhibit

- Participate in a dog show at your county fair.
- Make a first aid kit for your dog and tell why and how each item is used.
- Share care and nutrition information for raising a healthy dog.
- Interview your veterinarian about a microchip to identify your dog. Develop a video about your options.
- Attend a dog show. Take photos and make a notebook about dog breeds.
- Research jobs related to dogs. Make a poster showing three jobs that interest you.
- Develop a video showing the steps in training a dog.
- Visit a pet store and identify the necessary dog supplies, equipment, and their costs.
- Design a toy for your dog tell about your decisions related to safety and cleanliness.

## CAREER CONNECTIONS

- **Dog show judges** provide fair evaluations of livestock and advocate for the industry at various shows.
- **Dog trainers** work to condition canines through training, signals, and exercises.
- **Veterinarians** work to diagnose and treat different animal diseases.
- Become a **K-9 officer** if you enjoy training, exercising, and caring for work dogs.
- **Dog groomers** wash, clip and care for the coat and nails of others' family pets.

## EDUCATION CONNECTIONS

- Study **animal science** if you're interested in breeding, reproductive physiology, animal behavior, nutrition, and more.
- If you're interested in differing animal behavior, ecology, genetics, and anatomy, then **zoology** may be for you!
- Understand crime, study the **criminal justice** system, and research social factors if you are interested in becoming a K-9 Officer.
- Experiment with lab research, aid in animal surgery, and study animal production as a student in **veterinary medicine**.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.



## ENVIRONMENT AND SUSTAINABILITY PROJECT AREA



*Do you want to make the Earth a better place to live? It is all about the environment in this project, whether it's plants, animal habitats, environmental issues, saving energy, renewable resources, or recycling! You pick the topic and then learn to make a difference.*

### Ideas for Project Area Learning

- Develop an interest and understanding of environmental sciences and sustainable practices and technologies.
- Develop problem-solving and logical reasoning skills, then apply them to environmental issues.
- 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 world, people's lives, and the environment we all depend on.
- Develop knowledge and skills related to environmental stewardship.
- Observe the life cycles of animals that interest you.
- Learn about energy cycles.
- Create any collection and learn how to mount it.
- Shadow or interview a local environmentalist.
- Find out about Iowa's energy sources.
- Learn about different species on your vacation.
- Learn about tree diseases.
- Plan and conduct experiments to test ideas.
- Volunteer at an eco-fair for your community.
- Study an environmental issue such as acid rain, global climate change, or soil erosion.
- Conduct a forestry quiz bowl for your community.
- Organize a community service-learning project to weatherize homes.
- Investigate the potential of various energy sources to power Iowa Homes.
- Enter a research project in a science or technology fair.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Do a presentation on the benefits of wind energy.
- Create a poster of the various trees in Iowa.
- Demonstrate how to collect leaves and plants.

#### Civic Engagement

- Help at your local park.
- Write a letter to the editor about conservation or environmental issue that concerns you.
- Create a sustainability team to reduce non-recycled products.

#### Leadership

- Clean up a local pond or lake to help the local fish and wildlife.
- Plan and conduct an energy fair, teaching younger kids about wind and solar biomass and coal energy.
- Organize an environmental club in your community.

#### Entrepreneurship

- Provide a service to pick up people's compost.
- Write a business plan for starting a landscaping business/planting trees and plants.
- Make and sell products from recycled materials.

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## Share Your Learning With an Exhibit

- Develop a presentation or working exhibit that shows how to make a solar oven.
- Do a presentation on how to do a Home Energy Audit.
- Can you identify local trees? Make a poster to help others learn.
- What attracts butterflies to your garden? Find out and share your findings in a video.
- Create a new recipe and illustrate a cookbook about catching and cooking fish.
- Create an original piece of artwork using natural objects. Explain how they are connected.
- Develop a display or notebook on forest diseases.

## CAREER CONNECTIONS

- **Conservation biologists** are scientists that study the ecology of organisms and look for ways to preserve species and habitats.
- **Lobbyists** use their knowledge about environmental issues and current policies to educate lawmakers and persuade them to create policies that benefit the environment.
- Engineering is used to help solve problems and conserve resources. For example, a **water resource engineer** develops equipment to conserve water and keep it clean for use.

## EDUCATION CONNECTIONS

- Study **conservation biology** if you are interested in learning about living things and what you can do to conserve habitats.
- **Environmental science** is a general category of subjects and sciences that cover how the environment works and how to conserve it.
- Look into **civic engineering** if you want to design solutions to problems like water and energy conservation.
- **Rural sociology** students study human behavior and how rural environments impact people.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Maya Hayslett, 4-H Crops Specialist; the Iowa 4-H Communication and the Arts Program Priority Team; Bonnie Dalager, 4-H Product Development Specialist, Iowa State University Extension and Outreach.

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## FOOD AND NUTRITION PROJECT AREA



*This project area will help you discover the science behind food and how it fuels our bodies. Challenge yourself to prepare flavor-filled recipes with a balanced diet while learning how ingredients work together through cooking methods and to prepare foods safely.*

### Ideas for Project Area Learning

- Use “My Plate” from the USDA to make healthy food choices.
- Understand the principles of nutrition related to helping physical fitness.
- Learn how to prepare and store foods safely.
- Understand how the body breaks down and absorbs the nutrients in foods.
- Acquire and demonstrate skills in planning, purchasing, preparing, and serving tasty and nutritious meals.
- Learn how to read and convert a recipe.
- Learn how to use measuring equipment.
- Research healthy snacks and create a recipe based on your findings.
- Make homemade pizza.
- Make breakfast food.
- Compare the cost of purchased and homemade food.
- Learn how water and other liquids boil.
- Learn how to keep your kitchen germ free.
- Learn how to use kitchen equipment safely.
- Prepare a grocery list and go grocery shopping.
- Learn safety skills in the kitchen.
- Explore low-fat alternatives.
- Review “Spend Smart. Eat Smart.” and identify recipes you want to prepare.
- Explore healthy fast food alternatives.
- Prepare easy meals.
- Gain skill in evaluating nutrition information from the Nutrition Facts Label.
- Understand the connection between eating and emotions.
- Learn how to preserve and dry foods.
- Learn to purchase foods on a limited budget.

### APPLY WHAT YOU’VE LEARNED

#### Communication

- Teach friends how to make healthy snacks.
- Tell your family about the importance of eating a variety of foods from all the food groups.
- Design a poster about kitchen safety.

#### Civic Engagement

- Bake with the elderly at a care center.
- Volunteer in a food pantry.
- Offer locally grown food samples at a farmer’s market.

#### Leadership

- Take responsibility for preparing one family meal each week.
- Plan to help prepare food for a special family event.
- Create a club fundraiser around food.
- Volunteer to be your club’s Wellness Officer.

#### Entrepreneurship

- Sell homemade meals or dishes with nutritional information.
- Design and create a cookbook with original recipes and nutritional information for all dishes.
- Review kitchen gadgets or recipes on a food blog.



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- Iowa 4-H club members are encouraged to take part in the **Healthy Living Club Challenge** “Race Across Iowa” each November-May. Work together to make healthy choices.
- As a **4-H club wellness officer** you can encourage healthy habits and incorporate physical activity into your club’s meetings.
- Meet high school students from around the nation and develop your skills to address today’s issues like nutrition education, wellness, and emotional wellbeing at the **National Healthy Living Summit**.

## Share Your Learning With an Exhibit

- Experiment with altering recipes and share your results.
- Compare the cost of purchased vs. homemade foods.
- Research sports drinks vs. water. Share your results on a poster.

### CAREER CONNECTIONS

- **Chefs** direct food preparation, design menus, and keep records of food production.
- **Dietitians** provide dietary guidance, create nutritional programs, and design school menus.
- The **USDA** provides resources to promote balanced diets, improve food labeling, and ensure agricultural product safety.
- **Food bank directors** help keep communities healthy by providing nutritional food options to those in need.
- **Food service personnel** work in schools and hospitals to prepare healthy meal options.

### EDUCATION CONNECTIONS

- If you’re interested in improving food quality, safety, and nutrition, then **food science** may be the perfect fit for you!
- Students who attend **culinary school** learn more about necessary kitchen skills, hospitality, culinary arts, and professional cooking.
- Study **nutrition science** or **dietetics** if you’re interested in preventing and managing chronic illnesses and educating the public about healthy lifestyle choices.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Laura Liechty, 4-H Healthy Living Specialist, Nicole Kling, 4-H Healthy Living Student Assistant, Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.



## HEALTH PROJECT AREA

*From treating bug bites to finding safe playgrounds to starting a kids walk to school program, the 4-H health project area helps you explore health and wellness in your personal life as well as your home, club, community, country, and world.*

### Ideas for Project Area Learning

- Learn how to take care of your own physical, emotional, social, financial and environmental wellbeing.
- Practice a healthy lifestyle and share what you have learned with others.
- Learn about health and wellness resources in your community and state.
- Learn about environmental issues as they affect health.
- Learn how to make decisions and take action that positively affects your health, your family's health, and your community's health.
- Learn basic safety and first aid skills.
- Learn about poisons and how to keep you and your family safe.
- Develop a family safety plan.
- Identify safe places to play in your community.
- Learn about careers in emergency medicine.
- Create a personal health and wellness care plan.
- Learn about germs and how they affect your health.
- Learn how to choose food for fuel.
- Discover new ways to add physical activity to your life.
- Explore new foods to keep you healthy.
- Explore environmental health issues that might be in your community.
- Learn about careers in the health field.
- Explore how hydration affects the body.
- Learn how to avoid sports injuries.
- Explore what nutrient-rich foods are and how they benefit your body.
- Explore careers in the fitness and nutrition fields.
- Investigate community health issues like bullying, safe driving, or disaster management plans.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Show club members how to treat bee and wasp stings.
- Teach your club a new game to raise their heart rates.
- Prepare a poster about how to stay safe in case of a natural disaster.

#### Civic Engagement

- Organize a project to assemble first aid kits.
- Conduct a walking audit in your community to assess the safety of sidewalks.
- Promote wellness in your club by encouraging long term health habits.

#### Leadership

- Volunteer to be the club wellness officer.
- Write a grant for sport safety equipment for your community.
- Demonstrate how to make nutritious snacks at a club meeting.

#### Entrepreneurship

- Design, create, and sell emergency kits, from first aid to car safety
- Write a business plan for organizing a café with nutrient-rich, health-conscious meals
- Write a business plan for a weekly workout group lead by you!



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## Share Your Learning With an Exhibit

- Create first aid kits for your home and club.
- Make a poster on water hydration and exercise.
- Design a self-care plan.

### CAREER CONNECTIONS

- **Dentists and dental hygienists** help patients maintain good oral health through routine cleanings and education.
- **Physical therapists** help patients regain healthy movements following an injury, surgery or diagnosis.
- **Doctors** run diagnostic tests, provide health assessments, and prescribe treatments.
- **Nurses** care for patients and communicate with other professionals about patient needs.
- **Extension specialists** provide education on nutrition, cooking, food safety and preservation.

### EDUCATION CONNECTIONS

- **Pre-medical** students study chemistry, biology, and psychology to understand the human body.
- Study **music therapy** if you enjoy leading musical activities, addressing problems, and supporting others.
- Study **kinesiology** to learn more about health, active living, and keeping the body in motion.
- Try a **culinary arts** class if you enjoy preparing menus, preparing and cooking foods, and training others on food preparation practices.
- Becoming a **Certified Nursing Assistant (CNA)** is a great first step towards a career in nursing.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Laura Liechty, 4-H Healthy Living Specialist, Nicole Kling, 4-H Healthy Living Student Assistant, Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.





## HOME IMPROVEMENT PROJECT AREA



*Have fun learning how to design your space while being kind to the environment. If you are interested in creating a new color scheme, selecting new accessories for a room, or to installing a new floor or window covers, this is the project for you.*

### Ideas for Project Area Learning

- Master the elements and principles of design to make your house a home.
- Plan home living spaces in keeping with the needs of family members.
- Develop your skill in caring for home furnishings and accessories.
- Explore opportunities for environmentally friendly choices in your home.
- Learn the language of home improvement design elements and principles.
- Plan and design your own space with new techniques.
- Discover and compare costs to design and accessorize your space.
- Practice choosing wall treatments, window coverings, and floors.
- Discover how paint, wall treatments, flooring, and window coverings create different effects in a home.
- Get the 411 on furniture styles.
- Plan your space using needs, wants, and timelines to make choices.
- Create design drawings to visualize living spaces.
- Learn helpful strategies for developing a shopping list.
- Coordinate fabrics and patterns.
- Effectively reduce clutter and stash your stuff.
- Take care of your furniture possessions.
- Experiment with the arrangement of photos on a wall for different effects.
- Select fun accessories for the finishing touch.
- Install bright lighting fixtures.
- Examine environmentally friendly practices such as reduce, reuse, recycle, and rethink.
- Investigate energy wasters in the home.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Share with friends how to select a color scheme for their bedroom.
- Develop a step-by-step checklist showing how to cover a headboard using padding and fabric.
- Create a video showing how to be energy efficient in the home.

#### Civic Engagement

- Assist an older person with painting their living room.
- Share with family and friends how to keep living spaces safe.
- Show local museum staff how to arrange, protect, and display historical items correctly.

#### Leadership

- Show siblings how shared space can be divided using furniture placement.
- Teach adults the proper disposal methods of refinishing materials.
- Work with a non-profit in creating a functional meeting space.

#### Entrepreneurship

- Repurpose old furniture pieces into new items and resell.
- Refinish or reupholster items for people to go with their current décor.
- Create murals for nurseries, youth organizations, or personal homes.



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- Participate in **Design Camp**, put on each summer by Iowa State University College of Design in Partnership with Iowa 4-H.

## Share Your Learning With an Exhibit

- Take photos of home decoration that demonstrates the use of design elements and principles.
- Compare the pros and cons of sponging, rag rolling, stenciling, and stamping walls.
- Refinish a family antique chair, table, stand, or dresser.
- Illustrate how various wall coverings and flooring have different effects on living spaces.
- Create a poster that provides examples of elements of different furniture styles.
- Develop a design board showing how an existing floor plan can be made to be more functional.
- Compare the effectiveness of different products in removing stains from hard and soft home furnishings.

## CAREER CONNECTIONS

- **Interior designers** help their clients creatively and artistically decorate and furnish spaces.
- **Home remodelers** creatively design and construct the interior and exterior of houses.
- **Contractors** work to oversee construction jobs by hiring workers, providing materials, and scheduling inspections.
- **Architects** work to build, restore, and conserve buildings through innovative new ways.
- **Home appraisers** help people prepare and inspect homes while collecting data to find the worth of a home.

## EDUCATION CONNECTIONS

- Study **architecture** if you are interested in creating blueprints, managing development, and ensuring the safety of workers.
- Students in **interior design** artistically create, design, and furnish the interior of buildings.
- If you enjoy drawing, building, or designing, you may be interested in **structural engineering**.
- If you enjoy working with people, designing rooms, and studying scripts, you may be interested in studying **set design**.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by the Iowa 4-H Communication and the Arts Program Priority Team, Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.



## HORSE AND PONY PROJECT AREA



*The horse and pony project area is exciting because you can participate whether you own a horse or not! Discover all the aspects of raising and riding horses.*

### Ideas for Project Area Learning

- Learn horsemanship skills and understand breeding, training, and raising of horses as a business.
- Acquire skills in horse management by owning and being responsible for an animal.
- Acquire safety skills to prevent injury to persons and animals.
- Learn about basic horse care.
- Identify the parts of a horse.
- Learn breeds of horses.
- Learn the gaits of a horse.
- Understand horse reproduction parts.
- Learn about genetics and heredity of horses.
- Investigate horse diseases.
- Learn how to control parasites.
- Discover the causes of colic.
- Practice vaccinations.
- Learn the function of different horse tack.
- Learn the basics of trail riding.
- Check vital signs of your horse.
- Learn how to mount and dismount safely.
- Explain etiquette to ride safely as a group.
- Communicate with your horse.
- Practice horsemanship maneuvers.
- Improve your riding style.
- Research and purchase show clothing.
- Improve your showmanship pattern.
- Evaluate ethics in competitive situations.
- Learn about the knots used in horse care.
- Learn about horse grooming.
- Learn about the different saddles, bridles and tack.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Present about the parts of a horse.
- Send a letter to the editor describing your opinion on a horse topic.
- Present a riding safety session at your county for each course workouts before the county fair.

#### Civic Engagement

- Explore therapeutic riding and horse rescue assistance opportunities.
- Assist with the 4-H horse show at your county fair.
- Participate in the local saddle club charitable benefit.
- Ask friends to always wear a helmet when riding horses.

#### Leadership

- Lead a trail ride for your fellow 4-H horse project members.
- Work with a horseless horse member to care for a horse.
- Conduct a horse grooming clinic.
- Organize a tack swap for your club members.

#### Entrepreneurship

- Create a business plan for starting horse and pony riding classes.
- Start a trail riding class for all ages.
- Create and sell accessories for horse show exhibitors.



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- Apply for an in-depth hands-on learning experience on the Iowa State University campus during the three-day **Animal Science Roundup** late June. Youth in grades 8–12 are welcome to apply.
- Participate in **Equine Extravaganza**, a three-day event for horse project members that takes place annually in March.

## Share Your Learning With an Exhibit

- Make horse coloring and marking patterns.
- Make a poster identifying all the different parts of a horse.
- Do a presentation about how to be safe around horses.
- Draw up a health chart for your horse.
- Report on the history of horses.
- Create a game where you match up the parts of a horse with their names.

### CAREER CONNECTIONS

- **Equine boarding stable managers** feed and clean horses, keep them exercised and healthy, and have equipment ready to go.
- **Veterinarians** care for the health of animals and work to diagnose, treat, and research medical conditions and diseases.
- **Agriculture teachers** teach students about livestock production, lead activities, and get students involved in the community.
- **Jockeys** work to keep up the physical health of their horse and themselves through intense training.

### EDUCATION CONNECTIONS

- Students in **animal science** focus on the management of livestock species, as well as meat science, reproduction, and nutrition.
- If you enjoy different sciences like microbiology, chemistry, and genetics, studying **biology** may interest you.
- Learn **veterinary technology** if you're interested in animal health, anatomy, and disease transmission.
- Students in **genetics** learn more about why we have certain physical traits, how to conduct research, and how DNA works.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.



## HORTICULTURE PROJECT AREA



*How does your garden grow? In this project area, you will learn how to plant it, dig it, grow it, show it, and eat it.*

### Ideas for Project Area Learning

- Learn basic facts about plants and soils.
- Apply knowledge by experimenting with plants in a laboratory or the field.
- Identify different types of gardens.
- Grow and maintain a garden.
- Learn pest management techniques.
- Learn how to harvest crops.
- Examine the parts of a plant and discover the function of those parts.
- Learn to identify and use standard garden tools.
- Learn about garden fertilizer and nutrients that plants need to grow.
- Plant bulbs in the fall for spring blooms.
- Learn to divide plants and transplant favorite specimens.
- Create a container garden.
- Learn about compost and make a simple compost bin.
- Discover different ways to prepare and use garden produce.
- Sell produce at a farmer's market.
- Start an herb garden.
- Learn about food preservation methods.
- Take a soil sample and have it tested for nutrients.
- Learn about integrated pest management for the yard or garden.
- Experiment with organic production.
- Test different varieties or management techniques.
- Design a landscape plan for your home.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Give a presentation on garden tools or techniques.
- Make a video on how to make a water garden.
- Teach your club how to identify common garden weeds.

#### Civic Engagement

- Plant a flower bucket for the fairgrounds.
- Adopt a flower bed at a park.
- Make a compost bed for a community garden.

#### Leadership

- Organize a flower or vegetable sale to raise money for a particular cause.
- Teach a WIC class on using garden produce.
- Volunteer to host a garden tour.

#### Entrepreneurship

- Design and create corsages and boutonnieres for various formal occasions.
- Start a booth at your farmers market selling bouquets, potted plants, and succulents.
- Sell farm fresh fruits and vegetables to local businesses.
- Design and create raised gardens for sale.



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## Share Your Learning With an Exhibit

- Exhibit vegetables and herbs or flowers at the county or state fair.
- Make a poster about the parts of a plant.
- Build a compost bin or rain barrel.
- Prepare an exhibit on how to use fresh herbs and cooking.
- Create a notebook of common plants for a butterfly garden.
- Create a design for a landscape for your home.
- Compare pepper varieties. Keep a record and show the results in a display.

## CAREER CONNECTIONS

- **Horticulturists** grow plants in a variety of situations including vegetable farms, orchards, plant nurseries and greenhouses. They also research how to grow plants better and develop new varieties of plants.
- A **greenhouse manager** does all the planning, purchasing, and daily management of plant production for a greenhouse.
- **Landscape architects** prepare sites, inspect landscapes, and use environmentally friendly practices.

## EDUCATION CONNECTIONS

- **Horticulture** is the major at most colleges that focuses on the biology and production of plants for human use.
- **Plant physiology** is the science that studies how plants live and grow at all levels from the molecular level to how whole plants interact with their environment.
- **Genetics** is an important field of study if you are interested in improving plant varieties.
- Students in **arboriculture** learn more about the functions and needs of plant life, and the best way to care for plants.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Maya Hayslett, 4-H Crops Specialist; the Iowa 4-H Communication and the Arts Program Priority Team; Bonnie Dalager, 4-H Product Development Specialist, Iowa State University Extension and Outreach.



## LEADERSHIP PROJECT AREA



*Leaders influence and support others in a positive manner for a shared goal. Leaders aren't just elected. You can be a leader of committees, small groups, and teams. Learning about yourself and how you work with others is a vital part of developing leadership skills.*

### Ideas for Project Area Learning

- Understand the roles, attitudes, tasks, and functions necessary for effective leadership.
- Participate in program planning, development, and implementation.
- Job shadow or interview a local leader.
- Take responsibility for a weekly chore in your home.
- Plan and present a fun club activity.
- Identify non-verbal communication behaviors.
- Create a weekly schedule for you and your family.
- Create a list of what motivates you, interview others to find out what motivates them and compare those lists.
- Identify characteristics of a good leader and how leaders develop trust.
- Research, write, and deliver a presentation.
- Identify leadership talents in your club, group, or community.
- Work with members to establish ground rules for club meetings.
- Experiment with different group decision-making techniques.
- Plan and present a project workshop.
- Run for office in your club.
- Create a list of your strengths and weaknesses in leadership.
- Practice interviewing skills with an adult.
- Write a personal vision and mission statement.
- Plan a meeting.
- Develop and implement a school survey of student's teachers and administrators.
- Identify various leadership styles.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Notify families about club activities.
- Give a presentation on parliamentary procedure or other decision-making methods.
- Create a club web page.
- Write a letter to an elected official about an issue that is important to you and your community.

#### Civic Engagement

- Plan for your club's next service project.
- Investigate a historical leader and share their accomplishments.
- Volunteer to serve on a committee for your next town celebration.
- Mentor a younger member with record-keeping and preparing exhibits for fair.
- Join a political campaign for a candidate you support.
- Serve on a local board that deals with youth issues.

#### Entrepreneurship

- Review and revise resumes or online professional profiles.
- Start a motivational speaking business.
- Lead a summer class on how to become a leader in your community.



## Goal Setting and Record Keeping

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## Iowa 4-H Event Opportunities

- Participate in **county and state fair** exhibit classes.
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- Iowa 4-H members in grades 9–12 can apply for **State Project Area Awards** at State Recognition Day. Applications are open December through January.
- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.
- Travel to Washington D.C. to learn about being a leader in your community and in the world through **Citizenship Washington Focus**.
- Apply to be an Iowa Delegate to the **National 4-H Conference** through State Recognition Day. Delegates research important topics and present solutions to national agencies.

## Share Your Learning With an Exhibit

- Make a poster with a time line to demonstrate a historical leader's rise and accomplishments.
- Exhibit a calendar or log of weekly responsibilities in your home.
- Create before and after photos of a room that you organized, focusing on the development of your organizational skills.
- Give a presentation on the elements of an effective meeting.
- Develop a graphic organizer to showcase the talents in your club or community.
- Create a resume showcasing your skills and strengths.

### CAREER CONNECTIONS

- **Business managers** work daily with their employees, solve conflicts, and prepare reports.
- **Public relations specialists** establish strong relationships with the news media and business groups.
- **Organizational development specialists** ensure companies develop efficient organizational skills and action plans.
- **Management consultants** work with companies to solve issues, communicate with employees, and improve performance and value.

### EDUCATION CONNECTIONS

- Get your certificate in **organizational leadership** to develop management and leadership skills.
- Students in **business management** study how to best market, manage and oversee a company while working with a team.
- If you enjoy communicating with others through verbal, written, and news broadcasting, you may enjoy a degree in **communications!**
- Learn **organizational psychology** if you enjoy communicating conflict management practices with others.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.





## MEAT GOAT PROJECT AREA



*In the meat goat project area, you can learn about breeds, health care, grooming, production, reproduction, management, showmanship, marketing, and careers! Learn about the fastest growing livestock project area in the country!*

### Ideas for Project Area Learning

- Learn about the basic principles of animal science by owning, caring for, and keeping records on one or more head of livestock.
- Gain knowledge about sound breeding, feeding, and management practices.
- Identify quality in wholesale and resell cuts of meat to understand the relationship to management principles.
- Learn about caring for healthy and sick animals.
- Be a good sport when showing your animals.
- Produce a healthy and safe meat product.
- Identify different meat goat breeds.
- Locate and name the parts of a goat.
- Learn the proper feeding of goats.
- Tell the difference between dairy goats and meat goats.
- Develop a medical kit for goats.
- Learn about fencing options.
- Learn about body condition scoring.
- Identify and record the types of plants on your property.
- Develop a predator control program.
- Determine breeding dates.
- Learn about manure management programs.
- Research goat meat markets.
- Construct a model of a soil profile.
- Measure the level of parasite infestation in your herd.
- Conduct a judging clinic.
- Formulate a ration.
- Measure your pasture to productivity.
- Examine meat products.
- Learn about buying and producing good quality meat.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster on the parts of a meat goat.
- Participate in a judging contest providing oral reasons.
- Explain the cuts of meat and how to prepare them.

#### Civic Engagement

- Volunteer a goat for a hall of breeds.
- Hand out food samples at your local grocery store.
- Volunteer to help at the county fair market goat weigh in.

#### Leadership

- Invite other 4-H members to tour your farm.
- Teach others how to handle goats safely.
- Lead a meat goat selection and feeding clinic.
- Secure sponsorships for goal related awards.

#### Entrepreneurship

- Create a weed eating/grazing business for local parks and pastures.
- Sell locally various cuts of meat at farmer's markets and door to door.
- Begin a local goat yoga class that focuses on movement and a growing industry.



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- Iowa 4-H members in grades 9–12 can apply for **State Project Area Awards** at State Recognition Day. Applications are open December through January.
- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.
- Apply for an in-depth hands-on learning experience on the Iowa State University campus during the three-day **Animal Science Roundup** late June. Youth in grades 8–12 are welcome to apply.
- **Livestock Quiz Bowl** is a team event for 4th–12th graders where they test their knowledge of beef, sheep, swine and meat goats. This event takes place each Spring on the Iowa State University campus.

## Share Your Learning With an Exhibit

- Participate in a meat goat show at the county or state fair.
- Create and share an exhibit on the nutritive value of meat goats.
- Explain the different meat cuts and their proper preparation.
- Create a poster on feeding rations.
- Exhibit about preventative vaccinations.
- Create a poster with photos of all the different meat goat breeds.

## CAREER CONNECTIONS

- **General farm managers** organize the sales and purchases of livestock, farm equipment, crops, and agricultural products.
- **Livestock judges** provide evaluations of livestock and advocate for the industry at various shows.
- **Agricultural education teachers** teach students about livestock production, lead activities, and get students involved in the community.
- **Veterinarians** care for animals by diagnosing and treating animals with illnesses and injuries.

## EDUCATION CONNECTIONS

- Students in **animal science** focus on the management of livestock species, as well as meat science, reproduction, and nutrition.
- If you enjoy different sciences like microbiology, chemistry, and genetics, studying **biology** may interest you.
- Learn **veterinary technology** if you're interested in animal health, anatomy, and disease transmission.
- Study **zoology** if you enjoy working with wild animals in controlled environments and studying animal lifestyles.

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## MECHANICS PROJECT AREA



*The mechanics project area examines a range of fields linked to practical applications of power, energy, and electricity. Experience this technology firsthand while increasing technical and scientific literacy, communications, and decision-making skills.*

### Ideas for Project Area Learning

- Develop the skills and techniques needed to construct or repair items.
- Develop knowledge of safe practices and procedures.
- An understanding of the basic principles and theories of electricity.
- Increase knowledge and concern regarding the generation, transmission, and distribution of Electric Energy.
- Understand safety and equipment used in welding.
- Learn about electricity and electronics as they fit daily life.
- Maintain small engines in your home and garage.
- Discover how pistons work and how they are used in different machines.
- Understand the risks and importance of safety related to all mechanical systems.
- Learn about the different methods of welding and what materials are best suited to each type.
- Learn the different types of circuits and how they compare and how to construct each.
- Learn about the parts of your lawn mower and how to adjust the fuel and ignition systems.
- Diagnose engine problems and repair engines.
- Identify and eliminate risks in using mechanical systems.
- Experiment with different welds and beads for joints for constructing products.
- Practice safe operation of engines and engine driven systems, including tractors, combines, mowers, and other applications.
- Restore, repair, modify, or use the engine and drive system knowledge in practical ways with tractors.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Present safety information related to mechanical systems.
- Demonstrate the workings of a mechanical system.
- Teach how to construct or repair a mechanical system.

#### Civic Engagement

- Promote safety-related mechanical systems in your community.
- Do a small engine repair for the community.
- Check your friends' homes for electrical safety issues.

#### Leadership

- Lead a safety workshop.
- Organize a lawnmower tune-up clinic.
- Create a safe and responsible driving presentation.
- Give a demonstration on winter driving tips.

#### Entrepreneurship

- Write a business plan for a small mechanical repair business.
- Restore and resell automobiles or tractors.
- Review mechanical repair tools online in videos or on a blog.



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## Share Your Learning With an Exhibit

- Restore an automobile.
- Present or create a display on safe and responsible driving.
- Prepare a poster on how to drive cheaper and smarter.
- Make a display comparing the properties of gasoline and diesel engines.
- Make an exhibit of a small engine project.
- Give a demonstration of a small engine.
- Make an exhibit designing a wind generator.
- Create a poster display on tractor safety.
- Create a poster on GPS guided information.
- Prepare an educational exhibit on welding safety.
- Create an artistic or home furnishing exhibit by welding.

## CAREER CONNECTIONS

- **Electrical mechanics** test, repair, and rebuild motors, heaters, generators, electrical wiring systems, and controllers.
- **Aircraft mechanics** keep aircraft of all sizes in good working order. They complete inspections and perform maintenance checks and repairs.
- **Automotive mechanics** inspect and repair vehicles which run on gas, electricity, or ethanol. They diagnose problems through running and evaluating diagnostic tests.
- **Industrial machinists** repair the machinery used in factories when it needs to be serviced..

## EDUCATION CONNECTIONS

- If you're interested in the study of motion, and force through human and economic resources, you may enjoy **mechanical engineering!**
- Get your **mechanical certificate** if you're interested in brake systems, engine repair, electrical systems, and more!
- **Study heating, air conditioning, and refrigeration mechanics (HVAC)** to inspect, repair, or replace elements in a system's pump, motor, fan, thermostat, or switches.
- Learn **diesel mechanics** to perform maintenance and repairs on heavy equipment.

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## MUSIC PROJECT AREA



*Music rocks! It's all around us. It's in movies, TV, radio, computers, school, concerts, and just about everywhere! Music sets the mood and is the focus for voice or instrumental performances. Challenge yourself or learn to increase your skill level!*

### Ideas for Project Area Learning

- Perform your music in different places. Compare how location affects the sound.
- Interview members of your family about their favorite music.
- Investigate the role of a music conductor or director.
- Identify an event or place you'd like to perform. Plan out your performance and perform.
- Dig into the works by a single composer or performer.
- Seek out music you usually do not listen to. Compare with the music you do often listen to.
- Discover what it takes for a group of musicians to stay together for a long time.
- Survey radio stations in your area to find out how they decide what music to play.
- Trace a musical style such as jazz or baroque.
- Compare and contrast different arrangements of the same piece of music.
- Write a piece of music and have someone else test it out.
- Trace the history of an instrument that interests you.
- Explore the size, shape, and materials of different instrument classes such as woodwinds or brass.
- Learn about the different types of music from around the world.
- Learn about the music from a specific decade and determine how society and culture affected it.
- Discover how a genre of music was started and developed over time.

## APPLY WHAT YOU'VE LEARNED

### Communication

- Create a poster to promote a musical performance.
- Write a review of a musical performance for your school or local newspaper.
- Write a poem and set it to music.

### Civic Engagement

- Perform at a community event or a nursing home.
- Assist with the music at your local community theatre.
- Volunteer to sing the national anthem at a community sporting event.

### Leadership

- Organize a talent show to increase awareness of the musical talents of other 4-H members
- Organize a club outing to a musical performance.
- Volunteer to lead or teach music at a 4-H day camp.

### Entrepreneurship

- Compose music for people who make videos or need advertising jingles.
- Play an instrument or sing for corporate or entertainment events.
- Create and sell your original pieces.



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## Share Your Learning With an Exhibit

- Develop your musical abilities and perform music.
- Learn about and report on a style of music and its history.
- Compose or arrange music.
- Report on a composer.
- Report on how a musical instrument is made and how it affects the sound.
- Create poster listing common musical notations.
- Trace the history of an instrument over time and the changes made on a timeline.
- Interview an organizer of musical performances about how advertising affects attendance.
- Report on how music is used to add meaning or heighten emotions in films or TV shows.
- Report on the relationship of music to movements such as in dance, marching, or ice skating.

## CAREER CONNECTIONS

- **Music teachers** plan and prepare lessons to students and help develop their musical skills.
- **Music conductors** work as a team with the performers to unify them, set the tempo, and listen critically.
- **Recording technicians** work with sound equipment and assist in the recording process.
- **Sound technicians** work with performers to set up microphones and run sound checks.
- An **accompanist** works with other musicians to practice during rehearsals, play at performances, and coach the performers.

## EDUCATION CONNECTIONS

- If you enjoy exploring your creativity through singing, playing, and teaching music, you may enjoy studying **music!**
- **Sound design** students learn how to use recording equipment to create sound effects and soundtracks for different productions.
- Learn **commercial music** if you are interested in business practices of the music industry, as well as recording and production practices.
- If you enjoy communicating with others through verbal, written, and news broadcasting, you may enjoy a degree in **communications!**

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## OUTDOOR ADVENTURES PROJECT AREA



*Do you like being outdoors? You can become the ultimate explorer by designing an outdoor adventure! Choose from backpacking, biking, camping, canoeing, fishing, or hiking to create an adventure in the outdoors.*

### Ideas for Project Area Learning

- Choose an adventure like biking, camping, canoeing, fishing, or hiking.
- Learn about the proper gear for your adventure.
- Attend an Iowa 4-H summer camp or with your local 4-H club.
- Plan an outing for you and a friend or a family member.
- Learn about first aid and safety with the adventure that you choose.
- Research the saying “leave no trace.”
- Learn survival skills in different environments.
- Route your adventure using technology like a compass or geospatial mapping.
- Learn about equipment maintenance for various types of outdoor adventures.
- Learn how to cast for fish in many situations.
- Learn how to cook outdoor meals.
- Plan an overnight outdoor adventure for your family, friends, or club.
- Practice good outdoor manners using the “leave no trace” principle.
- Learn to prepare for emergencies in remote areas.
- Prepare for a big adventure such as RAGBRAI, or a backpack or canoe trip away from home.
- Start your own Geocaching adventure with your friends.
- Learn how to be a good environmental steward while engaging in your adventure.
- Learn about what it takes to camp overnight, what to take and where to go.
- Learn about water and boating safety.
- Learn about wildlife and plants you might encounter on a camping or hiking trip.
- Learn about GPS and compasses.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Create a how to tie knots poster.
- Do a working demonstration on how to set up a tent.
- Create a blog on hot spots for fishing or great places to canoe.

#### Civic Engagement

- Volunteer to clean up community campgrounds or trails.
- Help at your local county park.
- Serve as a camp counselor.
- Plan an event at your local park.
- Map trees in city parks using GPS.

#### Leadership

- Clean up a pond or lake in your area to help the fish environment.
- Help catch fish for a fish fry to raise money for a charity.
- Plan an adventure for kids in your community.
- Teach younger kids how to cast a line.

#### Entrepreneurship

- Make a business plan for a weekend summer camp for youth.
- Create a how-to guide on all basic camping necessities.
- Lead a mountain biking course.



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- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.
- Enjoy the out-of-doors by attending one of several annual **summer camps** through Iowa 4-H at the Clover Woods camping center.

## Share Your Learning With an Exhibit

- Develop a presentation showing how to set up and take down a tent.
- Present on cooking outdoors.
- Make a poster showing how to start a fire with just one match.
- Make an exhibit about cooking a pizza over a campfire.
- Investigate the types of fish that can be found in your area.
- Develop a workshop that shows others how to make knots.
- Write and illustrate a cookbook about catching and cooking fish.
- Create an original piece of artwork using fish prints or other natural objects or dyes.

## CAREER CONNECTIONS

- **Camp directors** oversee camp events and work as a team with employees to create curricula for different camps.
- **Photographers** often work for themselves, building a business where they host sessions with clients or sell photos.
- **GIS analysts** use mapping tools to manage and keep a collection of geographic maps.
- **Conservationists** work with government parks to study the environment.
- **Tour guides** lead visitors through places of interest and provide valuable information.

## EDUCATION CONNECTIONS

- Students in **photography** learn more about digital photography, color balance, and artistic practices.
- If you enjoy spending time outside, working with the environment, and physical wellness, you may enjoy studying **outdoor leisure**.
- Study **natural resource conservation** if you enjoy studying soil, water, wildlife, and plants outside.
- Students in **GIS** programs learn more about geological sciences, biology, and computer science.

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## PETS PROJECT AREA



*The pet project helps you explore what kind of pet fits into your family's lifestyle and how to be an excellent caretaker for your pet.*

### Ideas for Project Area Learning

- Gather information and determine the best pet for your family.
- Learn about the proper care, grooming, and feeding of your pet.
- Learn to identify the different parts of your pet for conversations with your veterinarian.
- Create a plan to prevent your pet from getting lost.
- Purchase and use the appropriate grooming equipment and techniques for your pet.
- Practice appropriate training for your pet.
- Plan a training and exercise program for your pet.
- Prepare for participation in a cat or pet show.
- Make a decision about breeding or not breeding your pet.
- Compare the labels on pet foods to make an informed decision on content and price.
- Keep a diary of your pet's health and eating habits.
- Do some comparison shopping for setting up an aquarium.
- Assess careers related to pets and the pet business.
- Help a friend decide on pet ownership.
- Research diseases of pet mammals, birds, and fish.
- Identify symptoms and a course of action for a disease in your pet.
- Discover how pets affect the environment.
- Learn and practice animal ownership responsibilities.
- Explore health regulations, first aid, and simple treatments for ailments.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Explain how to prepare a pet for showing.
- Show how to select a nutritional diet for your pet.
- Do an educational presentation on how to make a carrier for your pet.

#### Civic Engagement

- Clean up after your pet in public spaces.
- Volunteer at an animal shelter.
- Write a letter to your local paper about the importance of having household pets spayed or neutered.

#### Leadership

- Organize a pet show for your club.
- Organize a fundraiser to help benefit an animal shelter.
- Research and share with others why it is not a good idea to keep wild animals as pets.
- Develop a plan to foster the pets of deploying soldiers.

#### Entrepreneurship

- Develop a business plan for a pet care or pet sitting business
- Start a dog walking business.
- Design pet accessories like scratching posts or toys.



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## Share Your Learning With an Exhibit

- Exhibit your cat or pet at the fair.
- Make a first aid kit for a pet. Tell when and how each item is used.
- Share health and nutrition information for raising a healthy pet.
- Interview your veterinarian about a microchip to identify your pet. Develop a video about your options.
- Attend a pet show. Take photos and make a notebook about pet breeds.
- Make a poster on diseases your pet can get. Tell about its discovery, effects, and treatments.
- Research jobs related to pets. Make a poster showing three jobs that interest you.
- Develop a video showing the steps in training your pet.
- Research the county or area your pet came from. Take special note of the people, traditions, and other types of animals that live in the area.

## CAREER CONNECTIONS

- **Small animal vets** diagnose diseases, give vaccinations, prescribe medication, and treat wounds for pets and livestock.
- **Pet groomers** work in boutiques that shampoo, shape fur, clip nails, and care for pets.
- **Agricultural education teachers** teach students about livestock production, lead activities, and get students involved in the community.
- **Animal control workers** care for animals they take in and educate the public on pet laws.

## EDUCATION CONNECTIONS

- Students in **animal science** focus on the management of livestock species, as well as meat science, reproduction, and nutrition.
- If you enjoy microbiology, chemistry, and genetics, studying **biology** may interest you.
- Learn **veterinary technology** if you're interested in animal health, anatomy, and disease transmission.
- Study **zoology** if you enjoy working with wild animals in controlled environments and studying animal lifestyles.

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## PHOTOGRAPHY PROJECT AREA



*This project area is designed to help you explore the world of photography. From learning about camera equipment to capturing great images and sharing what you have learned with others, you are bound to love photography!*

### Ideas for Project Area Learning

- Learn all the parts of your camera.
- Use tripods and bracing to steady and level your camera.
- Try various lighting techniques.
- Use flash for fill and solving red eye.
- Study photo composition.
- Try out different viewpoints.
- Take photos of places, people, and pets.
- Tell the story with photographs.
- Learn to evaluate photographs.
- Try different shutter speeds and aperture.
- Adjust the depth of field.
- Practice using hard and soft light to create moods.
- Manipulate light using flash techniques.
- Evaluate composition using the rule of thirds, the golden triangle, and the golden rectangle.
- Use photographs to tell the story.
- Take candid photos to capture a moment in time.
- Use wide angle and telephoto lenses.
- Practice with light sources.
- Use viewpoints, framing, and lines to lead the eye.
- Use a trait, shape, pattern, and texture to capture creative photos.
- Use specialized equipment to learn advanced photography techniques.
- Learn about using photo editing software.
- Explore video production and using photographs to create them.
- Learn about lighting techniques and how you can use them to enhance your photographs.
- Practice using different flash techniques.
- Keep a photography journal to track your progress.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Tell your friends about the different types of cameras.
- Interview a professional photographer.
- Demonstrate how to present your photos properly.

#### Civic Engagement

- Photograph your club activities and make an album to share.
- Volunteer to take photos for a community event.
- Help archive historical photos.

#### Leadership

- Show your friends how to create trick photography.
- Arrange for a guest photographer to present to your club.
- Organize a photo shoot for a local organization or your school.

#### Entrepreneurship

- Write a business plan for creating your own photography business.
- Provide and sell custom framed photos.
- Sell your images online through print-on-demand stationary platforms.



## Goal Setting and Record Keeping

Goal setting is an ongoing process that guides your project area learning. Having goals is like having a road map to show you how to get you to where you want to go. Record keeping is also an ongoing process and another important life skill. In 4-H, you are encouraged to select from a variety of record keeping formats to meet your own personal needs and your preferred learning style. Keeping records of your learning experiences helps you determine how well you met your goals. Goal setting and record keeping improve your skills in organization, communication, planning, and evaluating.

## Iowa 4-H Event Opportunities

- Participate in **county and state fair** exhibit classes.
- Check with your local county 4-H youth development staff to see if there are special events or **workshops in your county** that you want to attend to learn more about your project areas.
- Iowa 4-H members in grades 9–12 can apply for **State Project Area Awards** at State Recognition Day. Applications are open December through January.
- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.
- Take part in the statewide **Camera Corps** program to sharpen your photography skills year-round.
- Meet high school students from around the nation and develop your skills in photography at the **National Photography Summit**.

## Share Your Learning With an Exhibit

- Identify the different parts of a camera.
- Select, mount, and mat a photograph.
- Photograph different subject matter, such as portraits, and self-portraits, pets, landscapes, panoramas, buildings, reflective, sports, or still life.
- Experiment with color variations like black and white, sepia, or bright colors.
- Use a computer to render photos such as enhancing color, making color corrections, or using filters.
- Present a poster about matting and framing photographs.

## CAREER CONNECTIONS

- **Commercial photographers** maintain studios and work with digital photography to create high-quality images for clients.
- **Marketing photographers** take quality images for advertisements.
- **Photo editors** redesign photos through editing and positioning applications.
- **Wildlife photographers** work outdoors to take live action shots of wildlife.
- **Wedding Photographers** take pictures before, during, and after the wedding ceremony, as well as editing photographs afterward.

## EDUCATION CONNECTIONS

- **Art history** students study the history and innovations of art, as well as write reviews.
- Students in **photography** learn more about color balance and artistic practices.
- Study **marketing and advertising** if you are interested in working with media, researching a market, and business ethics.
- If you enjoy creating artistic designs and communicating through images, study **design and visual communications**.
- Unleash your artistic and computer creativity by studying **graphic design**!

Written Iowa 4-H Youth Development 2013. Revised in 2019 by the Iowa 4-H Communication and the Arts Program Priority Team, Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.



## POULTRY PROJECT AREA

*In the poultry project area, you can learn about the selection and raising of your birds, but you can also dive into learning about health issues, poultry products, and careers!*

### Ideas for Project Area Learning

- Learn the basic principles of animal science by owning, caring for, and keeping records on one or more head of poultry.
- Explore the knowledge of sound breeding feeding and management practices.
- Investigate current issues facing the industry and how you can start a career in poultry.
- Learn the different types of birds and what they are used for.
- Produce a healthy and safe meat product.
- Identify different poultry breeds.
- Locate and name the parts of a bird.
- Learn proper feeding techniques.
- Demonstrate good sportsmanship when showing your animals.
- Learn more about nutrients and poultry products.
- Compare poultry carcasses and grading.
- Explore the difference between class, breed, and variety.
- Discover how tags are made.
- Learn how to candle eggs.
- Describe the signs of a healthy bird.
- Learn effective advertising.
- Learn different housing systems.
- Conduct a judging clinic.
- Manage your flock.
- Investigate DNA and genetics.
- Outline the steps of poultry processing.
- Discover proper food safety techniques from farm to table.
- Learn proper cooking techniques.
- Investigate ethics in the poultry industry.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster on the parts of a bird.
- Participate in a judging contest providing oral reasons.
- Explain the cuts of meat and how to prepare them.

#### Civic Engagement

- Volunteer your bird for a community petting zoo.
- Hand out food samples at your local grocery store.
- Volunteer to help at the county fair poultry show.

#### Leadership

- Invite other youth to tour your farm.
- Teach others how to handle poultry safely.
- Lead a poultry selection and feeding clinic.

#### Entrepreneurship

- Write a business plan for managing hens and selling eggs to local businesses and community members.
- Market and sell free-range meat products.

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- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June. Apply for an in-depth hands-on learning experience on the Iowa State University campus during the three-day **Animal Science Roundup** late June. Youth in grades 8–12 are welcome to apply.

## Share Your Learning With an Exhibit

- Participate in a 4-H poultry show. You may show chickens, ducks, geese, turkeys, exotic poultry, market broilers, layers, or showmanship.
- Make a display on the nutritive value of poultry.
- Explain various meat cuts and proper preparation.
- Create an exhibit on feeding rations.
- Create an exhibit with photos of different breeds.
- Create a journal outlining your daily routine in caring for your animals.
- Do an educational presentation showing proper grooming techniques.

## CAREER CONNECTIONS

- **Broiler managers** perform administrative duties and maintain records, review reports, and prepare a production budget.
- **Small animal vets** diagnose diseases, give vaccinations, prescribe medication, and treat wounds for pets and livestock.
- **Livestock judges** provide evaluations of livestock and advocate for the industry.
- **Agricultural education teachers** teach students about livestock production, lead activities, and get students involved in the community.

## EDUCATION CONNECTIONS

- Students in **animal science** focus on the management of livestock species, as well as meat science, reproduction, and nutrition.
- If you enjoy microbiology, chemistry, and genetics, studying **biology** may interest you.
- Learn **veterinary technology** if you're interested in animal health, anatomy, and disease transmission.
- Study **zoology** if you enjoy working with wild animals in controlled environments and studying animal lifestyles.

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## RABBIT PROJECT AREA



*In the rabbit project area, you can learn about the selection and raising your animals. Dive into learning more about rabbit health issues, management practices, and careers!*

### Ideas for Project Area Learning

- Learn the basic principles of animal science by owning, caring for, and keeping records on one or more head of rabbits.
- Explore information on sound breeding, feeding, and management practices.
- Investigate marketing, project expansion, and how you can start a career in the rabbit business.
- Learn the different breeds and their ideal weights.
- Determine the use of your rabbit projects.
- Develop a rabbit care management plan.
- Identify rabbit equipment and its uses.
- Locate and name the parts of a rabbit.
- Learn proper feeding techniques.
- Discover proper rabbit showmanship steps.
- Learn to judge rabbits and provide oral reasons.
- Discover the difference between four class and six class.
- Explore the different rabbit body types and their function.
- Design a plan for preparing rabbits for show.
- Learn proper grooming techniques.
- Tattoo your rabbits.
- Learn about diseases and environmental concerns.
- Learn about rabbit breeding programs and genetics.
- Manage your rabbitry.
- Evaluate rabbit health.
- Develop and maintain a rabbit pedigree system.
- Market your rabbits to others.
- Expand your project into other areas.
- Learn to write for a judge at a sanctioned show.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster on the parts of a rabbit.
- Participate in a judging contest and provide oral reasons.
- Explain the use of rabbits for meat production.

#### Civic Engagement

- Volunteer your rabbits for a community activity such as visiting a nursing home.
- Hand out food samples at your local grocery store.
- Volunteer to help at the county fair rabbit show.

#### Leadership

- Invite other youth to tour your farm.
- Teach others how to handle rabbits safely.
- Lead a rabbit selection and feeding clinic.
- Lead a tattoo clinic and project workshop.

#### Entrepreneurship

- Write a business plan for a pet grooming business.
- Breed and sell different types of rabbits for show projects.
- Spin rabbit's fur into knit sweaters, hats, and scarves for sale!



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## Iowa 4-H Event Opportunities

- Participate in **county and state fair** exhibit classes.
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- Iowa 4-H members in grades 9–12 can apply for **State Project Area Awards** at State Recognition Day. Applications are open December through January.
- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.

## Share Your Learning With an Exhibit

- Participate in a rabbit show at your county or state fair.
- Develop an exhibit showing the economic value of your rabbit.
- Prepare an emergency medical kit for caring for rabbits.
- Discover genetic variations and line breeding.
- Create an exhibit about feeding rations.
- Explain various preventative vaccinations.
- Create a poster display with photos of the different breeds.
- Create a journal outlining your daily routine in caring for your rabbits.
- Do an educational demonstration showing the proper grooming techniques for rabbits.
- Do a video interview with a rabbit producer.

## CAREER CONNECTIONS

- **Livestock judges** provide evaluations of livestock and advocate for the industry at various shows.
- **Small animal vets** diagnose diseases, give vaccinations, prescribe medication, and treat wounds for pets and livestock.
- **Agricultural education teachers** teach students about livestock production, and get them involved in the community.
- **Animal control workers** care for animals they take in and educate the public on pet laws.

## EDUCATION CONNECTIONS

- Students in **animal science** focus on the management of livestock species, as well as meat science, reproduction, and nutrition.
- If you enjoy microbiology, chemistry, and genetics, studying **biology** may interest you.
- Learn **veterinary technology** if you're interested in animal health, anatomy, and disease transmission.
- Study **zoology** if you enjoy working with wild animals in controlled environments and studying animal lifestyles.

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## SEWING AND NEEDLE ARTS PROJECT AREA



*Use your sewing skills and creativity to make clothes, pillowcases, horse blankets, or anything else that you can stitch, knit, or crochet!*

### Ideas for Project Area Learning

- Learn to use your sewing machine, its attachments, and other equipment like cutters and needles.
- Sew on a button by hand.
- Make a pillowcase or a tote bag for yourself.
- Select fabric and a pattern for a project.
- Learn to read care labels on fabric items.
- Practice sewing various types of seams.
- Learn to knit or crochet simple projects.
- Learn to use a Serger or sew French seams.
- Explore the properties and care techniques for different types of fabric.
- Install a zipper, add a pocket, or use embellishments.
- Die some fabric.
- Learn to sew specialty fabrics like heavy denim or a high-stretch fabric.
- Select yarn and create a knit or crocheted article of clothing.
- Design a sewing pattern, using design elements and art principles.
- Measure windows for curtains.
- Compare the cost of ready made vs. homemade items.
- Use a computer program to design a quilt.
- Learn about different needle art stitches and keep a collection of swatches.
- Learn what the needle gauges mean and how do they affect your stitches in crochet or knitting.
- Learn the names of all the different stitches.
- Learn about different cultures and how their beliefs and customs influence their needle art.
- Learn about different periods in history and how customs and historical events affected needle arts.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster identifying sewing machine parts and the proper care of a sewing machine.
- Interview a local business owner to find out how they select products.
- Teach others how to use a sewing machine.

#### Civic Engagement

- Make pillowcases to send overseas.
- Organize your group to knit mittens for a local shelter.
- Crochet or knit blankets for patients at your nearby hospital.

#### Leadership

- Lead a large-scale service project like a community-wide sewing event such as pillowcases for veterans.
- Do a working exhibit for your county fair on embellishing techniques.
- Organize a prom dress exchange service at your school.

#### Entrepreneurship

- Design and make a clothing accessory to sell, and market your product.
- Begin your own business, altering clothing for customers.
- Select an item you can knit or crochet to sell on an online marketplace.



## Goal Setting and Record Keeping

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## Iowa 4-H Event Opportunities

- Participate in **county and state fair** exhibit classes.
- Check with your local county 4-H youth development staff to see if there are special events or **workshops in your county** that you want to attend to learn more about your project areas.
- Iowa 4-H members in grades 9–12 can apply for **State Project Area Awards** at State Recognition Day. Applications are open December through January.
- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.
- Participate in the sewing class of the **Iowa 4-H Awardrobe Clothing Event** called “fashion revue.” Participants are selected at their county clothing event.

## Share Your Learning With an Exhibit

- Select a fabric and explain what it is, how it’s made, and how to care for it.
- Explain how woven fabrics differ from knit fabrics.
- What are some new fabrics, and why are they made?
- Describe the process of doing laundry.
- Explain how to make simple repairs using only needle and thread.
- Construct a soft furnishing like a pillow, quilt, or comforter.
- Develop a portfolio or notebook of your sewing leadership project.
- Show how yarn is created and the different properties of various fibers used in making it.

## CAREER CONNECTIONS

- **Fashion designers** study fashion trends, draw designs for, and create clothing pieces.
- **Upholsterers** repair furniture using a variety of different fabrics.
- **Family and consumer science teachers** instruct students on how to cook, sew, budget, child care, and other life skills.
- **Costume designers** create and design costumes for characters in plays or movies.
- **Materials engineers** work to create materials for different products, like metals and plastics.

## EDUCATION CONNECTIONS

- If you enjoy drawing and creating designs, working with fabrics, and researching new trends, you may enjoy studying **textiles!**
- If you enjoy working with new materials and products, study **materials engineering**.
- Students in **clothing** learn about fabric materials, sketching, construction, and more!
- **Family consumer sciences education studies** learn how to instruct classes, speak publicly, and how to teach essential life skills.
- Learn **history** if you enjoy studying the past, and how society and culture influence art.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by the Iowa 4-H Communication and the Arts Program Priority Team, Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.



## SHEEP PROJECT AREA



*In the sheep project area, you can learn about breeds, selection, grooming, production, management, showmanship, marketing, and careers in the sheep industry.*

### Ideas for Project Area Learning

- Learn about the health and care of your sheep.
- Learn how show your animals.
- Produce a healthy and safe meat product.
- Identify different breeds of sheep.
- Locate and name the parts of the sheep.
- Learn the proper care and feeding of a sheep.
- Tell the difference between sheep of different ages.
- Learn about food safety management practices.
- Learn the life cycle of sheep parasites.
- Judge and present your sheep.
- Understand medications used to maintain the health of your sheep.
- Communicate with the vet for disease prevention.
- Practice breeding management best practices.
- Care for a newborn lamb.
- Explore sheep shelters for adequate protection.
- Plan and organize production records.
- Develop cost and expense records.
- Explore sheep genetics.
- Interview people in sheep industry careers.
- Explore issues facing the sheep industry.
- Select breeding animals.
- Identify lamb cuts at the local grocery store.
- Measure your pasture to productivity.
- Assist a younger member in exploring the sheep project area.
- Organize a judging clinic.
- Plan and conduct a sheep showmanship clinic for younger project area members.
- Arrange questions and hold a sheep quiz bowl.
- Research state and national sheep organizations.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Design a poster that explains the parts of a sheep.
- Participate in a judging contest, providing oral reasons.
- Give a sheep shearing demonstration.

#### Civic Engagement

- Volunteer your lamb for a community petting zoo.
- Hand out food samples at your local grocery store.
- Volunteer to help at the county sheep weigh-in.

#### Leadership

- Invite your club members to tour your farm.
- Teach others how to handle sheep safely.
- Lead a sheep showmanship and grooming clinic.

#### Entrepreneurship

- Provide sheep's wool to sewing companies or crafters.
- Write a business plan for sheep products, from blankets to meat cuts.
- Provide your services as a farm hand assistant to farmers within your area.



## Goal Setting and Record Keeping

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## Iowa 4-H Event Opportunities

- Participate in **county and state fair** exhibit classes.
- Check with your local county 4-H youth development staff to see if there are special events or **workshops in your county** that you want to attend to learn more about your project areas.
- Iowa 4-H members in grades 9–12 can apply for **State Project Area Awards** at State Recognition Day. Applications are open December through January.
- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.
- Apply for an in-depth hands-on learning experience on the Iowa State University campus during the three-day **Animal Science Roundup** late June. Youth in grades 8–12 are welcome to apply.
- **Livestock Quiz Bowl** is a team event for 4th–12th graders where they test their knowledge of beef, sheep, swine and meat goats. This event takes place each Spring on the Iowa State University campus.

## Share Your Learning With an Exhibit

- Participate in your county or state fair sheep show in breeding, market, showmanship.
- Make an exhibit showing the various cuts of meat and their proper preparation.
- Create a poster demonstrating the nutritive value of sheep.
- Make a notebook of all your sheep feeding records.
- Make an exhibit showing many vaccinations and what they prevent.
- Make a poster exhibit of the different breeds of sheep.

## CAREER CONNECTIONS

- **Farm managers** organize sales and purchases of livestock, farm equipment, crops, and agricultural products.
- **Veterinarians** care for the health of animals by diagnosing, treating, and researching medical conditions and diseases.
- **Agricultural education teachers** teach students about livestock production and lead agriculture education activities.
- **Livestock judges** provide fair evaluations of livestock and advocate for the industry at livestock shows.

## EDUCATION CONNECTIONS

- Students in **animal science** focus on the management of livestock species, as well as meat science, reproduction, genetics, and nutrition.
- If you enjoy sciences like microbiology, and genetics, studying **biology** may interest you.
- Learn **veterinary technology** if you're interested in animal health, anatomy, and disease transmission.
- Study **zoology** if you enjoy working with wild animals in controlled environments and studying animal lifestyles.

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## SHOOTING SPORTS PROJECT AREA



*The Safety and Education in Shooting Sports project area uses skills and disciplines of shooting to assist young people and their leaders in obtaining knowledge and developing life skills. The disciplines include archery, rifle, shotgun, muzzle loader, and wildlife skills.*

### Ideas for Project Area Learning

- Identify the parts, uses, and care of archery equipment or rifles.
- Learn and practice range commands.
- Learn and use safety rules such as eye and ear protection and proper behavior on the range.
- Learn wildlife or hunting basics.
- Learn the differences and uses of a variety of equipment.
- Develop shooting skills using different techniques and positions.
- Advance your shooting experiences by trying shotguns or muzzleloaders.
- Learn and use hunter safety rules and hunter ethics.
- Make some archery equipment.
- Learn the art of gun smithing.
- Demonstrate advanced skills by participating in higher level competitions.
- Learn and then teach conservation practices.
- Encourage an understanding of our natural resources and the development of a personal environmental stewardship ethic through participation in shooting-related activities.
- Learn about the different breeds of hunting dogs.
- Learn general outdoor safety and orientation skills related to shooting sports.
- Learn about various targets and help your club make targets for their practices.
- Explore the historical development of a certain type of firearm.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Listen to and respect range commands.
- Create a poster, news release, or video related to shooting sports.
- Speak about proper handling, shooting, and types of firearms.

#### Civic Engagement

- Follow range and hunting safety rules and regulations.
- Clean up the shooting range and participate in environmental projects.
- Partner with local groups to promote safety and hunting ethics.

#### Leadership

- Invite friends to participate in your club.
- Partner with local groups to promote conservation and habitat improvement in your community.
- Plan and organize a shooting match.

#### Entrepreneurship

- Make targets to sell to people who enjoy shooting sports.
- Provide gun cleaning and craftsmanship services.



Exhibit resources, related events, and record keeping forms are available on our website.

[www.extension.iastate.edu/4h/projects/shootingsports](http://www.extension.iastate.edu/4h/projects/shootingsports)

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- Iowa 4-H members in grades 9–12 can apply for **State Project Area Awards** at State Recognition Day. Applications are open December through January.
- Meet young people from around the state who have completed grades 8–12, and share your interests at the **Iowa 4-H Youth Conference** held at Iowa State University in late June.
- Use your leadership skills to advocate for the Shooting Sports program as a **Shooting Sports Ambassador**. Apply for this opportunity through State Recognition Day.
- Showcase your skills and make new friends by competing at the **4-H Shooting Sports Nationals** in Grand Island, Nebraska.

## Share Your Learning With an Exhibit

- Present the proper outfit and accessories for hunting.
- Give a presentation on proper gun handling, shooting skills, wildlife, or archery equipment.
- Make a poster comparing different brands of available equipment.
- Give a demonstration on how to train a dog for hunting.
- Present about the different breeds of hunting dogs.
- Make a poster comparing wildlife habitats and how humans interact with them.
- Write a paper about general outdoors safety and orienteering skills.

### CAREER CONNECTIONS

- **Law enforcement officers** prevent, detect and investigate criminal activities and maintain public safety.
- **Summer camp directors** work to manage daily functions of camp life and planning recreational programs including shooting sports disciplines.
- **Forensic ballistics experts** use science related to weapons to help solve crimes.
- **Firearms engineers** improve the design and safety of firearms.
- **Combat arms professionals** in the military study a variety of disciplines to aid in defense.

### EDUCATION CONNECTIONS

- **Leisure studies** students study how to develop, deliver, and oversee recreational programming for a diverse public.
- If you enjoy writing, leading, controlling functions, and project planning, you may enjoy **sports management**.
- Study **marketing** if you enjoy discussing firearms and publicly speaking about products.
- If you're interested in preventing or solving crimes, study **criminal justice**.
- Study **forensic science** to learn about the collection and analysis of forensic evidence.

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## STEM PROJECT AREA



*This project area is designed to help you explore the world of Science, Technology, Engineering, and math. Science is a way for us to look at and work to understand the world around us.*

### Ideas for Project Area Learning

- Investigate issues ranging from geology to climate change by studying earth sciences. Make and find your way using the technology and software that puts the world at your fingertips, and geospatial mapping.
- Develop an interest and understanding of science and Engineering Technology and math.
- Develop your problem solving and logical reasoning skills through experiments.
- Develop responsible attitudes about science and how science relates to your world.
- Learn about how bridges are built.
- Learn about electric motors and how they work.
- Discover the science behind theatre lighting.
- Explore the principles involved in building roller coasters.
- Find out how wind turbines work.
- Try to make your own Rube Goldberg-type machine with materials around your house.
- Learn about genetics.
- Explore what kinds of careers are available in various STEM industries.
- Learn about the chemistry of adhesives and test their strength.
- Learn about cloud formations and weather patterns by studying meteorology.
- Learn about the chemistry involved in baking.
- Learn about wearable technology.
- Discover some of the creative uses for 3D printing.
- Learn about a historical scientist or mathematician that interests you.
- Discover how robotics technology is used in medicine.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Do an educational presentation at your county fair related to science and technology.
- Enter a robotics event.
- Present information about hand washing and germs to a local daycare class.

#### Civic Engagement

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

#### Leadership

- Organize a field trip to a local lab, business, or industry to learn how science and engineering inform their work.
- Teach a workshop on robotics or car restoration at a day camp.

#### Entrepreneurship

- Provide tutoring services for STEM-related classes.
- Offer a summer science camp with hands-on activities.



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## Share Your Learning With an Exhibit

- Make a poster on food safety in the kitchen.
- Create a display on the difference between colored light and the pigments used in paint.
- Create a hand-washing presentation kit that can be used at club meetings.
- Design a machine that solves an everyday problem.
- Conduct a science experiment and report on your findings.
- Create a display on the geometry involved in basketball.
- Do a presentation on the chemistry involved in making ice cream.
- Build a microscope for your cell phone.

## CAREER CONNECTIONS

- **Statisticians** gather numerical data and present it to help companies spot trends and make predictions.
- **Civil engineers** plan, design, and oversee construction and maintenance of building structures and infrastructure.
- **Software developers** work on researching, designing, implementing, and managing software programs.
- **Environmental scientists** study the effects of human activities on the environment and conduct tests to solve ecological problems.

## EDUCATION CONNECTIONS

- If you're interested in algebra, calculus, and developing new ways of conducting math, then you may enjoy studying **mathematics**.
- Learn **chemical engineering** if you're interested in designing products that involve chemical and biological changes.
- Students in **data science** learn more about technological methods and algorithms.
- **Engineers** study all types of math, science, and technology to create innovative new products.

Written Iowa 4-H Youth Development 2013. Revised in 2019 by the Iowa 4-H Communication and the Arts Program Priority Team, Bonnie Dalager, 4-H Product Development Specialist, and Payton Sash, 4-H Student Office Assistant, Iowa State University Extension and Outreach.





## SWINE PROJECT AREA



*In the swine project area, you can learn about breeds, health care, production, management, showmanship, marketing, and careers in the swine industry.*

### Ideas for Project Area Learning

- Learn the names of different breeds and their descriptions.
- Identify the parts of swine.
- Learn how to judge swine.
- Plan a facility that would keep swine safe and healthy.
- Learn how to feed and water your pick.
- Identify how a healthy pig looks and acts.
- Name and describe the cuts of meat of pork.
- Learn about pork by-products.
- Conduct a workshop for cooking pork.
- Prepare to show your swine at the fair.
- Learn the differences in preparing different cuts of pork by cooking and tasting.
- Explore common pig characteristics.
- Outline the health care plan for your pig.
- Understand swine management practices.
- Analyze and make decisions on how to solve swine issues.
- Formulate a swine ration.
- Plan and conduct a pork promotional activity.
- Help others learn each of the baby pig management practices.
- Assist a younger member in exploring the swine project area.
- Organize a judging clinic.
- Plan and conduct a swine showmanship clinic for younger project area members.
- Arrange questions and hold a swine quiz bowl.
- Research state and national swine organizations.
- Learn about swine genetics.
- Interview agencies about environmental issues related to the swine industry.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Make a poster on the parts of an animal.
- Participate in a judging contest, providing oral reasons.
- Give a demonstration of preparing your pig for a show.

#### Civic Engagement

- Volunteer your baby pig for an agriculture class at school.
- Participate in a service project donating to food pantries.
- Volunteer to help at your county livestock judging event.

#### Leadership

- Lead other swine project area members during a local pork producer event.
- Teach others how to handle swine safely.
- Lead a swine showmanship and grooming session before your county fair.

#### Entrepreneurship

- Sell local, home-grown pork products.
- Provide confinement cleaning services to local hog operations.



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- Apply for an in-depth hands-on learning experience on the Iowa State University campus during the three-day **Animal Science Roundup** late June. Youth in grades 8–12 are welcome to apply.
- **Livestock Quiz Bowl** is a team event for 4th–12th graders where they test their knowledge of beef, sheep, swine and meat goats. This event takes place each Spring on the Iowa State University campus.

## Share Your Learning With an Exhibit

- Participate in your county or state swine show in market, breeding, or showmanship.
- Make an exhibit explaining the nutritive value of pork.
- Make a poster showing the cuts of meat and proper preparation.
- Make an exhibit explaining the importance of reading feed labels.
- Make a poster display of the different swine breeds with photos.
- Make a journal outlining your daily routine in caring for your animals.

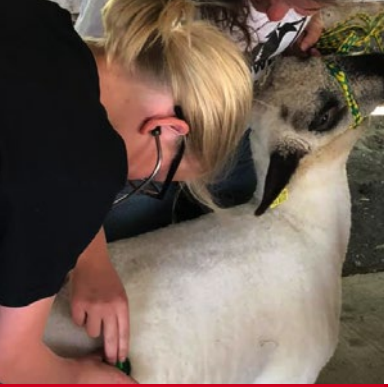
## CAREER CONNECTIONS

- **Veterinarians** care for animal health by diagnosing, treating, and researching medical conditions and diseases.
- **Livestock judges** provide fair evaluations and advocate for the industry at various shows.
- **Lab assistants** take samples, perform tests, and record and analyze data.
- If you enjoy teaching others about livestock production, leading activities, and mentoring others, you may enjoy a career in **agricultural education**.

## EDUCATION CONNECTIONS

- Students in **animal science** focus on the management of livestock species, as well as meat science, reproduction, genetics, and nutrition.
- If you enjoy sciences like microbiology and genetics, studying **biology** may interest you.
- Learn **veterinary technology** if you're interested in animal health, anatomy, and disease transmission.
- Study **zoology** if you enjoy working with wild animals in controlled environments and studying animal lifestyles.

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## VETERINARY SCIENCE PROJECT AREA



*Do you have an animal you want to keep healthy? Are you interested in a career helping lots of animals stay healthy? The veterinary science project area enables you to explore and learn more about animal health in your home, club, and community.*

### Ideas for Project Area Learning

- Understand the differences of species in body styles, systems, breeds, and life stages.
- Explore the basic needs of health and safety for various animals.
- Learn how veterinarians and owners work together to keep animals healthy.
- Investigate the many careers in animal science and veterinary science.
- Discover the importance of food safety.
- Explore bio-security and make an animal health management plan for animals.
- Consider ethics and animal welfare.
- Develop and maintain accurate health records for animals and pets.
- Investigate health issues related to body systems, diseases, parasites, and immunity.
- Incorporate science into the understanding of genetics and animal reproduction and health.
- Research the use of veterinary technology and procedures.
- Identify the transfer of diseases between animals and humans.
- Explore non-veterinary, animal-related careers.
- Take a tour of the Iowa State University Veterinary College.
- Learn about newly-approved feed additives for livestock and their uses.
- Study animal growth curves over their lifetime.
- Learn about proper hoof care.
- Explore the different aspects of ethics in the livestock industry.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Give an educational presentation on the types of injections and how to vaccinate animals.
- Develop an animal health management plan with a veterinarian.
- Help present a session at your county veterinary science workshop.

#### Civic Engagement

- Volunteer at a local veterinary clinic.
- Volunteer at an animal rescue.
- Start a campaign encouraging pet owners to neuter and spay their pets.

#### Leadership

- Help members develop a health care plan for their animal projects.
- Create a bio-security informational sheet for members to keep near their livestock.
- Organize a pet first aid class through your local Red Cross.

#### Entrepreneurship

- Write a business plan for a pet walking and sitting service.
- Hold training seminars on proper pet and livestock nutrition, health, and medicines.
- Make and sell homemade healthy pet treats.



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## Share Your Learning With an Exhibit

- Create a display of products that come from livestock or animals.
- Compare and contrast various health management plans for each type of animal.
- Interview a veterinarian and report on the various parts of their job.
- Create a display showing the difference in animal digestive systems.
- Create a poster illustrating the types of injections for animals.
- Research domestic animal health issues and how they affect people.
- Research wild animal health issues and how they affect people.

### CAREER CONNECTIONS

- **Veterinary zoologists** work to design and conduct research projects and studies of animals and wildlife conservation.
- **Laboratory animal science technicians** provide basic care to lab animals and study animals involved in research programs.
- If you enjoy teaching others about livestock production, and mentoring others, you may enjoy a career in **agricultural education**.
- **Animal trainers** work with pets and livestock to instill sound behavioral patterns with client's animals.

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## VISUAL ART PROJECT AREA



*Do you want to express yourself, be creative, and make an impression? The visual arts project area is for you. You can work with paint, chalk, metal, wood, origami, and computers.*

### Ideas for Project Area Learning

- Interview a local artist.
- Create a portfolio and design an idea book for storing your great works and ideas.
- Explore ways to cut and assemble paper to make art.
- Exchange art materials with friends.
- Create an art or craft project with a friend.
- Find places to share your art with family, friends, and your community.
- Experiment with line and color.
- Identify a town or country and its local art.
- Seek out a creative person that you would like to learn more about.
- Arrange an art trip to a local art fair or a farmer's market.
- Experiment with various brushes and paint.
- Compare different types of media.
- Experiment with shape and texture.
- Experiment with rhythm and proportion.
- Experiment with emphasis and balance.
- Understand and apply media techniques and processes.
- Understand visual art in relationship to history and culture.
- Enter your art in a local exhibition.
- Study the elements and principles of design and apply them to your various exhibits.
- Learn how to use shape and space to make optical illusions in your artwork.
- Learn about colors by exploring vegetable dyes.
- Study silk screening.
- Learn how to make jewelry using handmade beads.
- Study the different art and artists that are from your community.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Create a flier, poster, or brochure.
- Teach an art activity at an afterschool or summer program.
- Plan and conduct an ongoing workshop.

#### Civic Engagement

- Volunteer at a local art event.
- Donate your art for a fundraiser.
- Share your art skills with others at school, church, or recreation center.

#### Leadership

- Lead your family in an art project.
- Offer to critique your friend or family's artwork.
- Volunteer to serve on a local art council.

#### Entrepreneurship

- Sell services creating murals for businesses or homes.
- Create a craft business. Sell locally or with an online selling platform.
- Create a commissioned-artwork business.



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- Participate in **Design Camp**, put on each summer by Iowa State University College of Design in Partnership with Iowa 4-H.

## Share Your Learning With an Exhibit

- Make an original artwork in charcoal, watercolor, acrylic, pen, or colored pencil.
- Make a portfolio of visual arts techniques such as perspective, sketching, or blending.
- Make a display of various drawing tools.
- Report on your favorite artist, their life and art.
- Make a notebook based on an interview with a local artist.
- Make a report about your visit to a museum.
- Make an original sculpture out of cardboard, wire, plaster, or clay.
- Make a poster or display on design elements or art principles.
- Demonstrate mixing colors on a poster or display.

## CAREER CONNECTIONS

- **Production designers** manage the visuals of films by working with sets, graphics, costumes, and lights.
- **Graphic designers** create images through computer applications that create a message.
- **Art teachers** work with and instruct students on basic art skills, like painting and ceramics.
- **Animators** sketch images that come to life on screen as a movie, video game, or cartoon.
- **Jewelers** work to design and create jewelry, as well as make repairs on gems or clasps.

## EDUCATION CONNECTIONS

- Students in **art and visual cultures** study past and present materials from a wide variety of cultures and the messages they represent.
- Unleash your artistic and computer creativity through design, sketching, and drawing by studying **graphic design!**
- Students in **advertising** learn how to work with and create media, as well as how to draw attention to products and services.
- If you enjoy drawing and painting designs and working with others to create a production, you may enjoy a degree in **set design!**

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## WOODWORKING PROJECT AREA



*Woodworking is a valuable skill for a hobby, household repairs, or even a career. Learn about the types of wood, uses for various kinds of wood, how to make connections and joints, safety tips, and exhibit ideas from the very simple to the impressive!*

### Ideas for Project Area Learning

- Identify the tools and needs for your work area.
- Learn safety rules, tools safety settings, and how to use safety gear.
- Identify what different woods look and feel like.
- Understand how to use a variety of hand tools.
- Learn how to connect wood using glue and nails.
- Finish wood projects by sanding and painting.
- Learn how to use right-hand tools.
- Determine which woods are good for a product.
- Learn to cut and measure angles.
- Learn the importance of proper sanding and finish application.
- Discover joining, clamping, and connecting techniques.
- Use stain to emphasize the grain of the wood.
- Understand the difference between wood, laminates, and veneers.
- Correctly and safely use power tools.
- Explore woodworking careers and entrepreneurial opportunities.
- Identify the functions of a selection of woodworking tools.
- Compare the different types of hinges.
- Learn to enlarge scale-drawn woodworking plans.
- Compare the different grades of plywood.
- Evaluate exotic and veneer woods.
- Learn how to create inlays and overlays.
- Test various adhesives for specific uses.

### APPLY WHAT YOU'VE LEARNED

#### Communication

- Conduct a wood finishing seminar.
- Prepare an exhibit that explains the types of woods and the best applications for each.
- Give a safety demonstration for woodworking tool usage.

#### Civic Engagement

- Build toys out of wood for a homeless shelter.
- Make a bench or other product and donate to a charity.
- Join a building project with an organization such as Habitat for Humanity.

#### Leadership

- Conduct a basic building workshop for younger club members.
- Organize your club to assist older community members winterize their home.
- Be a project helper for the younger members in the project area.

#### Entrepreneurship

- Write a business plan for a custom furniture shop.
- Design and sell house or porch decorations.
- Provide furniture fixing services.



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## Share Your Learning With an Exhibit

- Create a poster on safety precautions when working with wood and tools.
- Develop an exhibit on woodworking tools and what they are used for.
- Make an exhibit on various wood fasteners, where they would be used, and why.
- Create an exhibit on various woodworking techniques.
- Make an exhibit evaluating the merits of different joinery.
- Develop an exhibit on furniture repair.
- Make an exhibit on green woodworking and sustainable wood types.
- Create an exhibit comparing wood to synthetic replacements.
- Make and finish a piece of furniture.
- Build a tack box for your show animal project.
- Make a toy train set out of wood.

### CAREER CONNECTIONS

- **Mill workers** cut and stock wood products, and instruct to clients on how to install products.
- **Finish carpenters** trim and complete final wood products, install windows and doors, and make adjustments to products as necessary.
- **Contractors** hire and work with workers, provide materials, receive permits, and oversees the completion of buildings.
- **Furniture designers** sketch plans for different furniture pieces and develop innovative models.
- A **handy person** works on general maintenance like plumbing or carpentry.

### EDUCATION CONNECTIONS

- If you enjoy art, architecture, and studying different social institutions, you may enjoy **art and visual cultures**
- Students in **furniture design** study trends to sketch and create innovative and unique furniture.
- Study the arts through **vocational education!**
- Learn directly through work experiences with an **apprenticeship** with a company.
- **Project management** students learn about initiating, planning, executing, controlling, and closing a project such as a construction job.

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