



Aerial Applicator/Agriculture Pilot

Skills Needed

- Technical Skills
- Problem-Solving
- Safety Awareness

Foundational SAE Ideas

Learn about aviation safety protocols and emergency procedures.

Educate peers on the role of aerial applicators in agriculture.

Immersion SAE Ideas

Study new technologies in aerial application methods and their efficiency in agriculture.

Develop educational materials on aerial application techniques for agricultural science classes.


FFA


Artificial Insemination Technician

Skills Needed

- Technical Skills
- Stamina
- Attention to Detail

Foundational SAE Ideas

Create a savings plan for education required for an artificial insemination technician.

Shadow an artificial insemination technician.

Immersion SAE Ideas

Intern at a local dairy farm or cattle ranch, learning artificial insemination techniques for improving genetic traits and reproductive efficiency.

Partner with a local research station to conduct a research project on improving conception rates through artificial insemination in dairy cattle.


FFA


Assembly Technician

Skills Needed

- Mechanical Skills
- Technical Skills
- Safety Awareness

Foundational SAE Ideas

Participate in mock interviews to practice answering common interview questions.

Explore how technology is used in agriculture.

Immersion SAE Ideas

Work at a local manufacturing company.

Restore tractors and other equipment in your local agriculture department.


FFA


Carpenter/Laborer

Skills Needed

- Physical Stamina
- Safety Awareness
- Material Knowledge

Foundational SAE Ideas

Build a portfolio showcasing your carpentry projects, skills and certifications to present to potential employers or educational institutions.

Obtain certifications in workplace safety relevant to carpentry, such as OSHA training.

Immersion SAE Ideas

Start a business designing and creating custom furniture pieces.

Help repair or renovate facilities for local nonprofits or shelters.


FFA



Construction Foreman

Skills Needed

- Construction Management
- Safety Awareness
- Leadership

Foundational SAE Ideas

Obtain an OSHA certification.

Shadow a construction foreman or project manager.

Immersion SAE Ideas

Work for a construction company that specializes in building agricultural facilities.

Manage a school-based construction project, such as building or renovating a garden shed for the school's agriculture program.


FFA


Custom Applicator

Skills Needed

- Equipment Operation
- Safety Awareness
- Product Knowledge

Foundational SAE Ideas

Learn to maintain and safely operate application equipment.

Research different application techniques and their effects on crop health and productivity.

Immersion SAE Ideas

Research and compare different application techniques and their effectiveness.

Work for a custom application service.


FFA


Drone Technician

Skills Needed

- Data Analysis
- Technical Skills
- Attention to Detail

Foundational SAE Ideas

Understand local regulations and guidelines related to drone use and safety.

Explore how drones are used in agriculture.

Immersion SAE Ideas

Research the impact of drones on precision agriculture.

Start a business collecting drone footage and crop monitoring for local farmers.


FFA


Environmental Science and Protection Technician

Skills Needed

- Report Writing
- Data Analysis
- Data Collection

Foundational SAE Ideas

Conduct an assessment of your school's environmental impact.

Research the qualifications, skills and job prospects for environmental science and protection technicians.

Immersion SAE Ideas

Start a composting project in your agriculture department.

Research the effects of different types of composting.


FFA



Falconer

Skills Needed

- Communication
- Problem-Solving
- Adaptability

Foundational SAE Ideas

Research and present on how falconry can be used for pest control and its benefits to agriculture.

Research careers available as a falconer.

Immersion SAE Ideas

Work at a bird rehabilitation center or wildlife sanctuary.

Organize conservation efforts aimed at protecting birds and their habitats.


FFA


Farrier

Skills Needed

- Equine Anatomy and Physiology
- Safety Awareness
- Attention to Detail

Foundational SAE Ideas

Create a plan for obtaining necessary training and certifications to become a farrier.

Create a personal budget to manage income and track expenses as if you were employed in this field.

Immersion SAE Ideas

Work at a horse stable or farm.

Conduct educational workshops about horses and their care for local horse owners and 4-H clubs.


FFA


Fisheries Technician

Skills Needed

- Water Quality Analysis
- Data Collection
- Habitat Restoration

Foundational SAE Ideas

Develop a simple guide on monitoring fish health and common diseases in aquaculture.

Create a plan for how you will pay for your continuing education should you choose this career path.

Immersion SAE Ideas

Start a small-scale aquaculture operation in your agriculture department.

Trap minnows to sell to local bait shops.


FFA


Forklift Operator

Skills Needed

- Safety Awareness
- Equipment Operation and Maintenance
- Loading and Unloading

Foundational SAE Ideas

Develop a report or infographic about the role of forklifts in agricultural warehouses.

Shadow a forklift operator in an agricultural setting to observe their work environment and responsibilities.

Immersion SAE Ideas

Work at a warehouse or distribution center.

Create and conduct farm safety workshops for elementary students.


FFA



Freezer/Refrigeration Specialist

Skills Needed

- Troubleshooting and Repair
- Safety Awareness
- Equipment Maintenance

Foundational SAE Ideas

Research various roles within the refrigeration field.

Create a visual map of career pathways within the refrigeration industry, including entry-level positions, advanced roles and potential career advancements.

Immersion SAE Ideas

Work at a meat processing facility.

Research how temperature fluctuations in refrigeration affect food safety and quality.


FFA


Heavy Duty Equipment Technician

Skills Needed

- Troubleshooting and Repair
- Equipment Operation and Maintenance
- Safety Regulations

Foundational SAE Ideas

Create a manual detailing common repairs and maintenance procedures for heavy-duty agricultural equipment.

Shadow a professional heavy-duty equipment technician.

Immersion SAE Ideas

Work for the agriculture department maintaining and repairing equipment.

Work for an agriculture implement dealership.


FFA


Heavy Equipment Operator

Skills Needed

- Equipment Operation
- Safety Awareness
- Attention to Detail

Foundational SAE Ideas

Research career paths in heavy equipment operation, including specialized roles and opportunities for advancement.

Create a checklist for inspecting heavy equipment before use.

Immersion SAE Ideas

Work for a lawn care and/or snow removal business.

Start your own lawn care and landscaping business.


FFA


Hydraulic Technician

Skills Needed

- Maintenance and Repair
- Troubleshooting
- Blueprint Reading

Foundational SAE Ideas

Analyze different hydraulic components used in agricultural machinery and create a report on their functions and maintenance needs.

Identify certifications related to hydraulic systems.

Immersion SAE Ideas

Work on maintaining and repairing hydraulic systems in school equipment or machinery.

Work at a local equipment repair shop.


FFA



Landscape Technician

Skills Needed

- Planting and Pruning Techniques
- Hardscaping and Softscaping
- Landscape Installation

Foundational SAE Ideas

Identify best practices for landscape maintenance.
Develop a guide for selecting appropriate plants for different agricultural environments.

Immersion SAE Ideas

Work at a local landscaping company.
Start your own landscaping business.


FFA


Livestock Auctioneer

Skills Needed

- Livestock Valuation and Pricing
- Auctioneering Techniques
- Sales and Negotiation

Foundational SAE Ideas

Research and analyze current market trends and pricing in livestock auctions.

Visit and observe livestock auctions to understand the dynamics of the auction environment.

Immersion SAE Ideas

Set up a mock auction event at school where students can practice auctioneering, bidding and managing the auction process.

Work for a livestock sales barn.


FFA


Livestock Hauler

Skills Needed

- Animal Handling
- Route Planning and Navigation
- Safety

Foundational SAE Ideas

Research best practices for livestock transport.
Develop a personal budget including income and expenses.

Immersion SAE Ideas

Work for a local livestock producer.
Research how different transport conditions affect livestock health and welfare.


FFA


Logger

Skills Needed

- Safety Awareness
- Tree Identification and Assessment
- Stamina

Foundational SAE Ideas

Design a safety poster for logging operations.
Research different types of logging equipment and their uses.

Immersion SAE Ideas

Research how logging activities affect local wildlife populations and ecosystems.
Work for a professional logger.


FFA


FFA

Machine/Equipment Operator

Skills Needed

- Equipment Operation
- Safety Awareness
- Technical Aptitude

Foundational SAE Ideas

Complete a safety training program focused on operating agricultural machinery and equipment.

Create a checklist for daily machinery inspections and safety checks.

Immersion SAE Ideas

Operate equipment for a construction company that specializes in building agricultural facilities.

Organize an annual event at school focused on machinery safety.


FFA

Maintenance/Service Technician

Skills Needed

- Equipment Maintenance and Repair
- Technical Skills
- Safety Awareness

Foundational SAE Ideas

Research different types of agricultural equipment and machinery and their maintenance needs.

Evaluate the costs associated with maintaining versus replacing agricultural equipment.

Immersion SAE Ideas

Conduct maintenance on machinery in the agricultural mechanics department.

Work at a local farm or agricultural equipment dealer.


FFA

Mechanic

Skills Needed

- Repair and Maintenance Techniques
- Safety Awareness
- Tool and Equipment Operations

Foundational SAE Ideas

Shadow a professional mechanic.

Create a portfolio showcasing completed projects, repair work and certifications.

Immersion SAE Ideas

Research how regular maintenance practices affect the lifespan and performance of agricultural machinery.

Restore tractors and other equipment in your local agriculture department.


FFA

Mechanical Electrician/ Electronics Technician

Skills Needed

- Systems Troubleshooting
- Problem-Solving
- Technical Aptitude

Foundational SAE Ideas

Develop a financial plan for pursuing further education or certification in electrical systems or electronics.

Research renewable energy sources.

Immersion SAE Ideas

Help a local agribusiness's maintenance team with the repair and upkeep of electronic systems in machinery.

Research how automated electronic systems improve efficiency and productivity in agricultural operations.



Millwright

Skills Needed

- Welding and Fabrication
- Blueprint Reading
- Systems Installation and Maintenance

Foundational SAE Ideas

Research various career options within industrial maintenance.

Conduct a hazard assessment of your agricultural mechanics shop.

Immersion SAE Ideas

Research how regular maintenance and proper installation impact the efficiency and longevity of machinery.

Manage and maintain the equipment in your agricultural mechanics lab.


FFA


Propane Sales and Delivery Associate

Skills Needed

- Handling and Safety
- Inventory Management
- Regulatory Compliance

Foundational SAE Ideas

Help with a local sales initiative or fundraiser.

Research how propane is used in agricultural settings.

Immersion SAE Ideas

Conduct a project at school to raise awareness about the propane industry.

Teach lessons to elementary students about the propane industry.


FFA


Sawmill Operator

Skills Needed

- Equipment Operation
- Safety Awareness
- Production Efficiency

Foundational SAE Ideas

Create a diagram of a sawmill, and identify the careers needed to help the mill run.

Identify the steps involved in harvesting and processing timber and the role of sawmills in the lumber industry.

Immersion SAE Ideas

Create jewelry, pens and other items using a lathe.

Start a small business that offers custom woodworking services.


FFA


Sheet Metal Worker

Skills Needed

- Metal Fabrication Techniques
- Welding and Soldering
- Safety

Foundational SAE Ideas

Develop a checklist of safety procedures for working with sheet metal.

Create a simple budget for a small sheet metal project.

Immersion SAE Ideas

Organize and lead workshops for beginners interested in learning basic sheet metal-working skills.

Start a business making and selling decorative wall art made from sheet metal.


FFA



Storage and Hygiene Coordinator

Skills Needed

- Hygiene and Sanitation
- Quality Control
- Organization

Foundational SAE Ideas

Explore educational requirements and certifications needed for a storage and hygiene coordinator.

Study the specific storage needs of different agricultural products.

Immersion SAE Ideas

Research and compare the effectiveness of different fumigation methods for controlling pests in stored grains.

Work for an elevator or other grain storage facility.


FFA


Truck Driver

Skills Needed

- Vehicle Maintenance and Inspection
- Loading and Unloading Procedures
- Time Management

Foundational SAE Ideas

Create a budget for obtaining a CDL license, estimating costs for training courses, permit fees and preparing for potential job opportunities in the trucking industry.

Study DOT regulations, hours of service requirements and transportation safety guidelines.

Immersion SAE Ideas

Work for a trucking company or logistics provider.

Collaborate with school administration to organize a truck driving simulator program.


FFA


Veterinary Assistant

Skills Needed

- Animal Handling
- Compassion
- Sample Collection

Foundational SAE Ideas

Create a budget for pursuing certification as a veterinary assistant.

Research safety training courses on handling animals safely, preventing zoonotic diseases and maintaining hygiene standards.

Immersion SAE Ideas

Work at a veterinary clinic or animal hospital.

Start a pet care service business (e.g., pet sitting, dog walking, grooming) to provide care services for pets in the community.


FFA


Water Treatment Technician

Skills Needed

- Equipment Operation
- Safety Awareness
- Troubleshooting

Foundational SAE Ideas

Create a budget for pursuing certification as a water treatment technician.

Determine what PPE is required for a career as a water treatment technician.

Immersion SAE Ideas

Work at a water treatment plant or utility company.

Conduct a research project on water purification methods.


FFA



Water Treatment Technician

Skills Needed

- Equipment Operation
- Safety Awareness
- Troubleshooting

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Immersion SAE Ideas

Work at a water treatment plant or utility company.
Conduct a research project on water purification methods.


FFA


Welder

Skills Needed

- Welding and Fabrication
- Weld Inspection
- Attention to Detail

Foundational SAE Ideas

Compare jobs where different welding methods may be used and create an infographic to explain.

Research different educational institutions for welding.

Immersion SAE Ideas

Start a small welding business offering mobile welding services for local farms, businesses or homeowners, focusing on repair and fabrication projects.

Conduct a research study on the strength of different weld types and joints.


FFA


Wildland Firefighter/Fire Tower Watchman

Skills Needed

- Firefighting Techniques
- Safety Awareness
- Physical Fitness

Foundational SAE Ideas

Interview a wildland firefighter to learn about the duties, training requirements and career pathways in wildland fire management.

Complete certifications in first aid and CPR.

Immersion SAE Ideas

Volunteer with a local fire department or conservation organization.

Develop a wildfire prevention education program at school, organizing workshops, creating educational materials and conducting fire drills to promote fire safety awareness.


FFA


Wind Substation Technician

Skills Needed

- Troubleshooting and Repair
- Safety Awareness
- Equipment Operation and Maintenance

Foundational SAE Ideas

Research renewable energy sources, grid integration and environmental impacts of wind energy.

Analyze labor demand for wind substation technicians.

Immersion SAE Ideas

Work for a wind energy company or utility provider.

Research the efficiency of wind energy compared to other energy sources.


FFA



FFA

Wind Turbine Technician

Skills Needed

- Equipment Maintenance and Repair
- Troubleshooting
- Documentation

Foundational SAE Ideas

Determine what safety certifications are required for a wind turbine technician.

Study the role of wind turbines in sustainable energy production and conservation.

Immersion SAE Ideas

Conduct a research project about turbine blade design.

Collaborate with science teachers to build a model wind turbine prototype, testing different blade designs and measuring energy output.