

Plant Science SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Vegetable Garden Startup	Grow vegetables seasonally for home or market	Seeds, soil, compost, tools	Crop planning, soil health, budgeting
Hydroponic Lettuce System	Soil-less growing system for leafy greens	PVC pipes, nutrient solution, water pump	Hydroponics, water quality
Fruit Tree Management	Care and production of fruit trees	Pruners, fertilizers, tree saplings	Pruning, orchard maintenance
Greenhouse Tomato Farming	Grow tomatoes in a controlled environment	Greenhouse, pots, trellis system	Climate control, pest management
Microgreens Cultivation	Growing high-turnover leafy sprouts indoors	Trays, LED lights, organic seeds	Indoor farming, harvesting cycles
Organic Herb Garden	Small-scale herbs for kitchen or market	Raised beds, labels, compost	Organic practices, marketing
Mushroom Cultivation	Growing oyster or button mushrooms	Substrate, spores, humidifier	Fungal biology, sterile technique
Flower Bed Landscaping	Planting and designing aesthetic flowerbeds	Seeds/plants, mulch, edging tools	Landscape design, pollination awareness
Seed Saving Project	Collect, clean, and store seeds from crops	Envelopes, silica gel, storage bins	Genetic preservation, sustainability
Compost Soil Mix Testing	Comparing compost mixes for plant growth	Compost piles, test plots, journal	Soil fertility analysis

2. Animal Science SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Backyard Poultry Raising	Raising broilers or layers in small setup	Chicks, coop, feed, waterers	Animal husbandry, biosecurity

Goat Rearing Project	Raising goats for milk or meat	Shelter, fencing, minerals	Animal care, feeding, health checks
Rabbit Breeding Project	Breeding and managing meat or pet rabbits	Cages, feed, record book	Reproductive care, sanitation
Dairy Calf Project	Raising a calf for dairy or market	Bottle, starter feed, health logs	Ruminant care, vaccinations
Piglet to Market	Raising pig from weaning to sale	Pen, grower feed, scale	Feed conversion, financial tracking
Sheep Wool Production	Raising sheep and harvesting wool	Shears, fleece storage, shelter	Fiber care, marketing wool
Livestock Judging Practice	Evaluating animals based on breed standards	Judging cards, videos, live shows	Analysis, breed knowledge
Animal Nutrition Study	Testing diets and tracking weight gain	Scales, feed, spreadsheets	Feed formulation, data tracking
Poultry Incubation Project	Hatching chicks and monitoring success rate	Incubator, thermometer, egg turner	Embryology, incubation science
Cattle Grooming Practice	Prepping show cattle for competition	Grooming kit, chute, shampoo	Showmanship, animal handling

Agricultural Mechanics SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Garden Tool Restoration	Clean, sharpen, and repaint old tools	Grinder, paint, safety gloves	Tool care, safety
PVC Irrigation System	Build a low-cost crop watering system	PVC pipes, joints, valve	Fluid mechanics, measurement
Small Engine Repair	Fix a lawnmower or tiller engine	Wrenches, oil, spark plugs	Troubleshooting, engine operation
Chicken Coop Construction	Build a backyard poultry house	Lumber, nails, saw	Carpentry, animal comfort

Raised Bed Frame Building	Create beds for school/community gardens	Wood, screws, drill	Basic construction, dimensioning
Welding a Farm Gate	Create a small metal livestock gate	Welding machine, steel rods, helmet	MIG or arc welding, measurement
Drip Irrigation Prototype	Design water-saving drip system	Tubing, emitters, timer	Sustainable watering techniques
Solar Fence Charger Setup	Install solar-powered livestock fence charger	Solar panel, battery, wiring	Solar basics, wiring, fencing
Tractor Maintenance Log	Record and perform scheduled maintenance	Manual, oil, filters	Preventive maintenance
ATV Safety Checklist	Inspect and evaluate a farm ATV	Checklist, manual, tools	Safety practices, routine checks

Agri-Business & Entrepreneurship SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Farm Stand Startup	Selling own produce or value-added items	Tent, table, signage	Pricing, customer service, profits
Backyard Egg Business	Sell eggs locally from small flock	Layers, cartons, records	Branding, safety, local regulations
Farmers Market Booth	Weekly booth selling jams, plants, or veggies	Display, register, transport	Marketing, accounting
Online Plant Store	E-commerce for selling plants	Website, social media	Digital skills, packaging
Honey Product Branding	Package and brand honey for resale	Jars, labels, design software	Value addition, branding
Floral Arranging Services	Offer bouquet or event flower arrangements	Shears, vases, flowers	Aesthetics, delivery, pricing
Homemade Compost Bags	Selling compost from school/community waste	Bags, scoops, label printer	Recycling, packaging

Organic Soap Business	Soaps using herbs or goat milk	Oils, molds, wrapping paper	Product development, artisan skills
Agri-Tourism Guide	Offer farm tours for schools or families	Safety gear, route maps	Public speaking, business planning
Petting Zoo Day Camp	Host hands-on learning for kids	Animals, handouts, fencing	Education, customer care

Environmental & Natural Resource SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Water Quality Testing	Sampling and testing local water	Test kits, bottles, GPS	Science skills, data logging
Tree Planting Campaign	Organize community tree planting	Saplings, gloves, diggers	Conservation, volunteer leadership
Wildlife Habitat Survey	Map and monitor habitat use in an area	Binoculars, camera, field book	Ecology, documentation
Soil Health Study	Test various plots and compare practices	Soil probe, test kits	Agronomy, observation
Pollinator Garden	Create a garden for bees and butterflies	Native plants, signage	Pollination, design
Litter Cleanup + Audit	Remove trash and track sources	Gloves, tally sheets, bags	Environmental awareness
Renewable Energy Model	Small solar or wind model on a farm	Solar panel kit, LED light	Energy literacy
Invasive Species Removal	Identify and remove harmful species	Cutting tools, ID guide	Biology, safety handling
Forest Trail Maintenance	Help maintain or create a nature trail	Rake, shovel, brush trimmer	Environmental stewardship
Wetland Observation Report	Track wetland birds and health indicators	Boots, scope, notebook	Bird ID, aquatic ecosystem study

Research-Based SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Fertilizer Impact on Growth	Compare plant growth under different fertilizer types	Plots, fertilizers, ruler, journal	Scientific method, measurement, data analysis
Organic vs. Conventional	Study crop performance under organic vs. chemical inputs	Seeds, compost, fertilizer, notebook	Sustainability comparison
LED vs. Sunlight Growing	Analyze growth under artificial vs. natural light	LED panels, pots, seeds	Light spectrum effects
Soil pH and Plant Health	How pH levels affect plant development	pH test kit, different soil samples	Soil chemistry, plant science
Feed Efficiency in Rabbits	Test which diet results in better weight gain	Scales, various feeds, cages	Nutritional science, animal care
Pollinator Frequency Study	Observe and log visits to plants by bees/insects	Timer, field journal, flowers	Ecology, tracking behavior
Compost Composition Research	Study how different waste types affect compost quality	Food scraps, bins, thermometer	Decomposition science
Seed Germination Rates	Compare germination rates by storage conditions	Seeds, paper towels, water	Seed viability testing
Plant Growth in Reused Water	Study effects of greywater on plants	Water sources, plants, tracker	Water conservation research
Antibiotic Resistance in Livestock	Research bacterial resistance in farm animals	Samples (simulated or secondary data)	Lab technique or secondary research skills

Communication & Media SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
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Ag Blog/Website	Create content to educate about agriculture	Laptop, CMS (WordPress), camera	Content writing, digital marketing
Farm Photography Portfolio	Capture images of crops, animals, farm life	Camera, editing software	Photography, storytelling
Ag Career Interview Series	Interview professionals in agriculture	Phone or recorder, questions, editing	Interviewing, communication
Weekly Ag Facts Social Media	Post educational facts with visuals	Canva, social accounts	Social media strategy
Livestream a Farm Tour	Virtual tour to teach about agriculture	Phone tripod, social platform	Public speaking, video production
Monthly Newsletter	Send updates on a farm or ag program	Email tool (Mailchimp), content calendar	News writing, mailing list management
Podcast on Ag Issues	Produce a podcast discussing local/global ag topics	Mic, editing software	Audio editing, research
Agriculture Myth Busters	Bust myths about farming through video or posters	Canva, Instagram, YouTube	Visual communication, research
Educational Poster Design	Create visuals on farming topics for schools	Poster board or digital tools	Infographic design
Farm Safety Campaign	Develop awareness campaign for young farmers	Posters, brochures, media	Safety promotion, creativity

Agriscience Fair SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Soil Type & Water Retention	Test which soil holds water the longest	Soil samples, measuring cup	Experiment design, observation

Plant Music Response	Study effect of music/sound on plant growth	Speaker, music playlist, plants	Variable control, growth tracking
Effect of Mulch on Weeds	See how mulch types affect weed suppression	Organic mulch, test plots	Scientific comparison
Eggshell vs. Lime Fertilizer	Compare calcium sources for plant health	Crushed eggshells, lime, seeds	Chemistry in farming
Antibiotics in Milk Test	Test store milk for trace antibiotics	Milk test kit (or hypothetical study)	Food safety understanding
Temperature & Germination	Study how temp affects seed sprouting	Thermometer, seeds, paper towel	Data charting, lab work
Recycled Paper Seed Pots	Evaluate plant growth in eco-friendly pots	Newspaper, mold, seedlings	Sustainability science
Water Source & Plant Growth	Use tap, rain, and bottled water for same plants	Water samples, plants, journal	Controlled experiments
Animal Bedding Comparison	See how different bedding affects livestock comfort	Sawdust, straw, hay	Animal science + measurement
DIY Plant Growth Hormones	Use natural vs. synthetic growth boosters	Banana peel tea, rooting powder	Biostimulant testing

Placement SAE (Internship/Job-Based) Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Dairy Farm Assistant	Work milking cows, feeding, cleaning	Boots, record sheet	Livestock care, scheduling
Vet Clinic Helper	Assist with checkups, grooming, cleaning	Gloves, clipboard	Animal health basics
Crop Scout Intern	Identify pests, weeds, and diseases in fields	Field book, phone, agronomy knowledge	Agronomy, decision-making
Greenhouse Worker	Care for plants, transplanting, watering	Gloves, labels, schedule sheet	Greenhouse management

Agricultural Equipment Shop	Shadow or help repair tractors/machines	Safety gear, wrenches	Mechanical skills
Landscape Maintenance	Work with local landscaper	Mower, edging tools	Plant ID, design
Seed Retail Job	Work with seed or ag chemical company	Sales catalog, labels	Agribusiness operations
Ag Journalism Internship	Write for local farm magazine or blog	Camera, laptop	Reporting, editing
Farmers Market Assistant	Help vendors sell and organize booths	Tent, register	Retail, customer service
FFA Summer Leadership Aide	Help teach or guide younger members	Handouts, presentation materials	Leadership, teaching

Food Products & Processing SAE Projects

Project Title	What It Is	Resources/Tools Needed	Skills Learned
Jam & Jelly Production	Make and sell fruit-based spreads	Jars, fruit, sugar, canner	Food safety, preservation
Farm-to-Table Recipe Book	Collect and write recipes using local ingredients	Word processor, camera	Food writing, photography
Dehydrated Fruit Snacks	Dry local fruit for snacking or selling	Dehydrator, slicer, packaging	Processing, quality control
Homemade Herbal Teas	Harvest and dry herbs, blend for sale	Tea bags, labels, herbs	Packaging, ingredient pairing
Pickle Production	Cucumber or beet pickling for resale	Vinegar, jars, sterilizer	Preservation methods, flavor profiles
Goat Milk Soap Making	Turn milk into natural soaps	Lye, molds, oils	Artisan crafting, safety
Baking with Local Grains	Bake bread or snacks using local flour	Oven, flour, recipe books	Nutrition, ingredient sourcing

Cornmeal from Scratch	Make meal from grown or purchased corn	Grinder, sifter, corn	Milling process, labeling
Tomato Sauce Bottling	Cook and bottle homegrown tomato sauce	Tomatoes, canner, jars	Cooking, food laws
Freeze-Dried Treat Testing	Experiment with freeze-drying for storage	Freeze dryer (or study), packaging	Long-term storage science