

Lyman Hall SAE Program

SAE Information Sheet

With supervised agricultural experience programs (SAEs), a student designs a program to gain hands-on experience and develop skills in agricultural career areas that interest them.

A SAE program is the actual, hands-on application of concepts and principles learned in the agricultural education classroom.

Seven Basic SAE Types:

1. Exploratory

Learn about the “big picture” of agriculture and its many related careers.

2. Research/Experimentation and Analysis

Conduct research or analyze information to discover new knowledge.

3. Ownership/Entrepreneurship

Plan and operate an agricultural-related business.

Fifty (50) hour limit on pet care.

4. Placement

Work for someone else in agriculture or a related field either for pay or for the experience.

5. Directed School Laboratory

Projects that revolve around opportunities at school tied directly to the student’s career or academic goals. Students will work with a VoAg teacher to outline a program.

6. Agricultural Communications

Writing, producing and presenting agricultural topics via the newspaper, radio, TV or chapter website.

7. Improvement Projects

Project undertaken to increase the value of the home or business; or improve the environmental conditions of the home, business, or community.

SAE Criteria

A student’s SAE is considered appropriate when the student is able to answer “YES” to question **one** and “YES” to either question **two** or **three**.

1. Does the supervised experience involve the application of technical agriculture and employability skills?

2. Does the supervised experience contribute to the production and/or initial processing of an agricultural, horticultural, or natural resource products?

3. Does the supervised experience provide a service for the agriculture, horticulture and/or natural resources industries?

Lyman Hall Requirements

1. Freshman -	100 hours
2. Sophomores -	200 hours
3. Juniors -	250 hours

Examples of Freshman SAE Projects

1. Adopt a community building for beautification.
2. Adopt an area of the school campus for beautification.
3. Construct a backyard water garden.
4. Grow vegetables in a containers.
5. Perform landscape maintenance at home.
6. Operate a lawn maintenance service.
7. Rent indoor plants to teachers in your school.
8. Start a garden photography business.
9. Start a vegetable transplant seedling business.
10. Produce vegetables for decoration (gourds, Indian corn)
11. Provide a soil sampling service for neighbors.
12. Raise a horse for show.
13. Work at a horse stable.
14. Raise a market hog for show.
15. Raise sheep.
16. Raise goats.
17. Raise poultry for eggs.
18. Raise rabbits for show.
19. Raise aquarium fish for sale.
20. Raise bees for honey.
21. Raise dogs for show.
22. Raise worms and sell to bait stores.
23. Adopt a local stream to monitor water quality.
24. Conduct a research project on deer damage in the neighborhood.
25. Conduct a water quality study on a stream or lake.
26. Construct and install duck nesting boxes.
27. Develop a backyard bird habitat.
28. Develop a backyard wildlife habitat.
29. Develop a wildlife food plot.
30. Develop and monitor a bluebird trail.
31. Plant and monitor a butterfly garden.
32. Raise game birds for sale.
33. Volunteer at Quinnipiac Nature Center.
34. Build a patio at home.
35. Build frames for raised bed for gardeners.
36. Build picnic tables for sale.
37. Construct and sell lawn furniture.
38. Construct concrete products for sale.
39. Make personalized signs for sale.
40. Operate a lawn maintenance business.
41. Make craft items from wood, metal or concrete to sell at craft shows or farmers markets.
42. Do home improvement project including painting.
43. Construct custom made and painted mailboxes.
44. Attend training programs with the DEP.
45. Conduct plant growth and physiology experiments.
46. Grow crops with different fertilizer rates. Prepare research paper.
47. Plant and maintain a research plot on different types of turf grass.
48. Conduct general home maintenance - such as painting, rebuild room, new deck
49. Write "How To" pamphlets to sell.
50. Write news articles on agriculture or FFA for local newspaper.
51. Operate a snow plowing/shoveling business.
52. Interview a series of local Ag business persons.
53. Shadow a series of manager/workers of an agricultural business.
55. Prepare a history of agriculture in the local community.
56. "Adopt A Park"
57. FFA Activities
58. Pet Sitting
59. Ag technology - computer repair.
60. Counselor in training - Day camps, horse camps, etc.
61. Rebuild mowers, tractors, small gasoline engines.
62. Fund raiser for animal shelter.
63. "Adopt a Senior" - help senior citizen with yard, pets, home improvement.

Agricultural Ideas Research Projects

1. How do different conditions affect the speed at which fruit and vegetables ripen?

Temperature, light, placement in sealed bags, exposure to other ripe fruit all have different effects on different fruits. You'll need to look into ethylene gas.

2. How do different types of fertilizers affect plant growth?

Fertilizers differ in their amounts of the nutrients nitrogen, phosphorus and potassium. Get different fertilizers from a garden shop or nursery and apply them to groups of the same plant. Do the different fertilizers change how the plants grow? You could measure height, width, number of leaves, how fast the plants grow, number of flowers or yield.

3. What happens when you grow sweet potatoes next to other plants?

Compare how fast the other plants grow at different distances from sweet potatoes. Remember to grow some control plants nowhere near the sweet potato. Check out the term allelopathy.

4. How do different treatments change how fast seeds sprout?

You can find out how quickly seeds sprout under different temperatures, or after being soaked for different times or in different liquids. Or, see how one kind of treatment affects different types of seeds.

5. How close does a pesticide have to be to protect a plant?

Grow a number of groups of the same plant. Apply a Bt-based insecticide directly to the plant according to the directions on the package and at various distances from the plants. Compare the amount of insect damage to each group of plants. You might also look at how big or fast each group of plants grows.

6. What effect does seed size have on how well a crop like oats or wheat grows?

You can define success a number of ways: how many seeds sprout, how fast the plants grow, how tall the plants get.

7. How does soil pH affect the pH of water that touches the soil?

A pH meter can be found at almost any garden shop or nursery. Gather different types of soil. Put some of each type in a cup and check out the pH. Then add water to the cups, and mix. Wait for the soil to settle and measure the pH of the water. Be sure you use water from the same source for each soil. Find out more about soil.

8. Does soil type change how well crops grow?

Fill boxes with different types of soils and plant the same crop in all the boxes. What happens to the plants? You could measure height, width, number of leaves, how fast the plants grow, number of flowers, or yield of seeds or fruits.

9. How are different soil types affected by water running over them?

Farmers in many parts of the country have to irrigate to water their crops rather than rely only on the rain. But water running over soil can cause it to wear away, or erode. simple experiment in soil erosion

10. Do different varieties of the same fruit have the same level of vitamin C?

What about different brands of orange juice? Or fresh juice compared to juice from frozen concentrate? Does the way a fruit is stored or how long it is stored change the level of vitamin C? Here's how to test for vitamin C content.

11. Are there different amounts of iron in different breakfast cereals?

The iron in ready-to-eat breakfast cereals is in the form called elemental, not in combination with any other chemical compound. Iron is sprayed on the outside of cereal flakes. You can separate the iron with a strong magnet. Microbiology's easy to think of all microorganisms as bad things, as germs. But many microorganisms are very helpful, especially for agriculture, and some are even essential. Microorganisms are used to fight pest insects, diseases and weeds that make producing crops and raising livestock less efficient. Other microorganisms help make nutrients in the soil more available to plants.

12. What happens to the way plants grow if there are no microorganisms in the soil?

Take a sample of fertile soil from a field or garden and divide it into two portions. Bake one in an oven (to destroy the microorganisms). Leave the other portion alone as a control. Plant the same number of seeds in each soil sample. Remember to treat both samples the same while the plants are growing. Make sure all the plants receive the same amounts of water and light, and are kept at the same temperature. How do the plants differ as they grow?

Some microorganisms and plants form mutually beneficial partnerships. For example, certain bacteria make a natural nitrogen fertilizer for plants in the family called legumes. Peas, alfalfa and soybeans are legumes. The nitrogen-fixing bacteria are available from garden supply stores and by mail order. Grow both legumes and non-legume plants with and without the bacteria. Are there differences in how well the plants grow?

13. Which way is up?

Many seeds and bulbs have a definite top and bottom. What happens if you plant them upside down or sideways? Will the seeds still grow; will it take longer for leaves to start showing up?

14. Which grows faster, hair or fur?

Shave a measured patch of hair on your head and the same size patch of fur on a dog. Measure the new growth daily and record the results on a chart. Back up your data with photographs.

15. Is seed germination affected by herbicide residues in the soil?

Suppose you are interested in planting a garden or farm field but have no idea what chemicals have previously been used in that soil? Or maybe you've seen dead grass and weeds along fence lines and have wondered how far the herbicides might have spread in the surrounding soil, or how long their effects will last. Perhaps you have applied an herbicide yourself and are wondering how long it will take before it is safe to plant new seeds in the area.

<http://www.hort.cornell.edu/weston/weedfacts/wdfct3.html>

16. Early detection invasive species survey.

One way to stop the damage an invasive species may inflict on an ecosystem is to control or eliminate the species when its populations are still small. An early detection survey locates problem species that are in the process of invading an area. For example, an early detection survey could be used to determine whether purple loosestrife is present in a wetland.

<http://ei.cornell.edu/ecology/invspec/early/default.asp>

17. Use a variety of methods to determine duckweed sensitivity to various compounds, or various concentrations of a single compound. <http://ei.cornell.edu/toxicology/bioassays/duckweed/thod.asp>

Exploratory SAE

1. Prepare a paper on agricultural marketing.
2. Tour agricultural businesses and prepare a career opportunity board and report.
3. Report on the agricultural development of a foreign country over the past 50 years.
4. Attend an agricultural field day and report on your observations.
5. Construct a display for an agricultural topic.
6. Prepare a paper on an agricultural career including salaries and educational requirements.
7. Interview the management and employees of an agricultural business/enterprise and report on the types of decisions they make.
8. Shadow an agricultural business/enterprise employee for a day. Report on your findings and activities.
9. Take a newspaper reporter on a tour of excellent SAE projects.
10. Collect and compare different examples of food packaging.
11. Attend meetings of agricultural organizations i.e. Connecticut BeeKeepers, Connecticut Mycological Society, etc. and report on their activities.
12. Prepare a paper on the impact of biotechnology in agriculture.
13. Prepare and conduct an educational program on recycling.
14. Visit and compare several types of greenhouses.
15. Prepare a website page on agricultural opportunities in your home town.

Possible Agricultural SAE Projects

1. Become an agricultural consultant for farm news for local radio or newspapers
2. Conduct a study of commodity trading over a period of time
3. Conduct general home maintenance.
4. Create a custom labor venture: mow pastures, remove undesirable weeds from crops, paint outbuildings, etc.
5. Design a computer application plan for some agricultural facility or program
6. Develop a marketing plan for an agricultural commodity
7. Install electrical circuits or wiring system at home
8. Job placement with a local florist
9. Job-shadow agribusiness professionals, visits to agribusinesses to interview personnel, educational tours, etc.
10. Marketing Christmas trees
11. Offer a custom parts and supplies delivery business to farms in your county
12. Provide a custom barbecue service for community
13. Provide a custom feed for livestock. Tap the organic, all natural, no-chemical market
14. Provide custom hay baling and/or hauling
15. Provide farm sign business (manufacture, sale, install, and maintain)
16. Provide livestock hauling
17. Provide small engine maintenance and repair service
18. Provide systematic maintenance and service on outdoor power equipment at home or at school provided facilities
19. Package fresh fruit or vegetable gift packs
20. Sell ready to freeze processed vegetables
21. Start a composting business by buying cow manure from local farmers, bagging for resale
22. Start a farm sitting business for vacationing farmers
23. Start a MSDS compliance business by compiling and maintaining current sheets for farms and businesses in your county
24. Start a recycling business (collecting and selling newspapers and plastics to recycling plants)
25. Start an agricultural business promotion business. (Sell custom caps, T-shirts with farm or Ag business names or logos to clients.)
26. Start an agriculture photography service (Animals, equipment, barns, families, children with animals, show animals)
27. Start local farm produce sale paper and sell ads to farmers
28. Form a cooperative with other students and share in profits of a greenhouse crop or flower sales
29. Write "How To" pamphlets to sell at local garden supply stores. (Ex. How to Grow Tomatoes, etc.)
30. Write news articles on agriculture or FFA for local newspaper for Ag. Communications
31. Build a patio for the home
32. Build frames for raised beds for gardeners
33. Build handicap ramps in local community
34. Build picnic tables / sell to schools and local community
35. Construct a utility building
36. Construct a wind powered generator and show its applications to agriculture
37. Construct and sell birdhouses and feeders
38. Construct and sell lawn furniture made of PVC
39. Construct compost bins to sell
40. Construct concrete projects for the home or farm
41. Construct or recondition a welding project (such as a trailer, cooker, etc.)
42. Construct pre-fabricated wooden fence panels for sale to local hardware, building supply stores
43. Construct spray rigs for four wheelers
44. Constructing and marketing woodworking projects (birdhouses, dog houses, etc.)
45. Constructing metal projects - garden ornaments
46. Contract with school system to maintain and service lawn care equipment.
47. Cut out and paint lawn figures for sale
48. Electrical repair service
49. Install plumbing fixtures or plumbing system in your own building

50. Lawn mower maintenance service
51. Making craft items from wood, metal, or concrete to sale at arts and craft shows
52. Making personalized signs for sale
53. Paint the home; supervised by agriculture teacher
54. Placement in a parts store
55. Provide custom painted mailboxes and stands
56. Repair and rebuild damaged pallets for businesses
57. Start a chain saw basic maintenance & service business
58. Start a custom vehicle refurbishing or painting business
59. Start a detailing business for cleaning farm equipment on the farm (wash, wax, clean, maintain)
60. Start an equipment locating business. Match folks with something for sale with folks who want to buy something
61. Start a farm equipment tire disposal business. (Turn old tires into livestock feeders.)
62. Start a farm fence maintenance business (cleaning fence rows, repairing)
63. Start a farm fencing company for custom work
64. Start a pallet manufacturing business
65. Start a small engine repair service
66. Wire a home shop, utility room, barn, or tree house
67. Work as an agricultural mechanics aide
68. Work at a welding operation
69. Working at a building supply business
70. Working with a farm equipment dealer
71. Conduct a plant growth and physiology experiment in school agriscience lab
72. Conduct a research project for Agriscience Fair (local and national)
73. Conduct a research project on a specific career, set up a business plan, including expenses, possible income etc.
74. Provide non-game wildlife management
75. Conduct food science experiments
76. Grow crops with different mechanical/chemical applications, fertilizer, growth regulator, etc. Observe/report results
77. Monitor local air quality; record and report
78. Plant and maintain a research plot on different types of turf grasses
79. Plant raised beds and monitor the growth of plants
80. Research pines planted on tight spacing, water and fertilize, and compare with regular spaced planted pines
81. Research project on how light intensity affects plant growth
82. Research project on how light quality affects plant growth
83. Research project on plant reproduction
84. Soil conservation project on private or public land
85. Study effect of fertilizer run-off into a stream or pond
86. Study effect of manure run-off into a stream or pond
87. Study effects of herbicide type and varying concentrations
88. Temperature effects on worms' food consumption
89. Work with agencies involved in research (USDA, etc.) Conduct a plant growth and mineral deficiency experiment
90. Provide a beehive rental service for farms and gardens
91. Raise a dog for show
92. Raise dairy goats
93. Raise dogs for sale
94. Raise fish in tanks or floating cages - research the rate of growth based on factors such as temp. and amount of feed given
95. Raise llamas
96. Raise market goats for show
97. Raise meat birds (chickens, turkeys, ducks) to the desired weight and sell to consumers
98. Raise meat goats
99. Raise mice, hamsters, or gerbils
100. Raise miniature cattle
101. Raise miniature horses
102. Raise quail or other game birds for flight and meat
103. Raise rabbits for pets or meat animals

104. Raise special breeds of dogs
105. Raise tropical fish
106. Raise tropical fish in aquariums
107. Raise worms, collect and sell to bait stores
108. Start a crawfish farm
109. Start a cricket ranch
110. Start a dog and cat boarding business for vacationing families
111. Start a dog exercising business for elderly folks or sick people
112. Start a dog obedience school
113. Start a fish bait farm (mealworms, golden grubs, etc.)
114. Start a honey production business (would work well with above hive rental)
115. Start a pet grooming business
116. Start a turtle farm (sale to pet stores and pond owners)
117. Train sporting dogs. (quail, rabbit, and retrievers dogs)
118. Work at a dog kennel
119. Work at a pet store
120. Work at a veterinary hospital
121. Board horses
122. Build a backyard poultry research project
123. Contract finish swine
124. Develop a cow-calf operation
125. Develop a small swine operation
126. Develop a stock cattle operation
127. Raise replacement heifers
128. Raise dairy replacement heifers
129. Produce feeder pigs
130. Provide a home animal care service
131. Provide a horse training service
132. Provide a horse shoeing service
133. Raise a beef heifer for show
134. Raise a horse for show
135. Raise a market hog for show
136. Raise a market steer for show
137. Raise breeding sheep for show
138. Breeding swine for show or breeding
139. Raise dairy heifers for show
140. Raise market lambs for show
141. Raise poultry for show
142. Start a small animal care business
143. Start an Easter egg business
144. Work at a horse operation or stables
145. Work at a poultry processing operation
146. Work in the egg industry packaging and distribution
147. Work on a beef cattle operation
148. Work on a dairy operation
149. Work on a poultry operation
150. Work on a sheep operation
151. Work on a swine operation
152. Operate a pay-to-fish business
153. Provide fish pond management
154. Raise catfish in cages
155. Raise fish in an aquaculture system
156. Raise fish in cages in a pond or other body of water
157. Care and incubation of hatching eggs

158. Organic vegetable production
159. Produce vegetables for decoration, Indian corn, mini pumpkins, gourds, etc.
160. Produce farm crops (at home or school provided facilities)
161. Produce forage crops (at home or school provided facilities)
162. Produce watermelons
163. Buy unusable lumber from builders supply and building sites; grind up or chip for mulch to sell
164. Collect green pine cones (for seeds in the fall)
165. Collect used Christmas trees and yard trimmings. Grind, compost, bag and sale as organic fertilizer
166. Collect/market natural supplies (i.e. pine cones, acorns, nuts, corn shucks, etc.) to sell to craft stores
167. Container Pine Seedling Production
168. Contract with a tree removal service to cut firewood and remove fallen trees
169. Contract with local timber companies and landowners to maintain boundary lines by painting and chopping
170. Cut and sell firewood provided free by national forests and state and local parks
171. Cutting and/or marketing firewood
172. Measure timber; determine volume and establish a management plan
173. Provide a soil sampling service for farms and lawns
174. Purchase bulk pine bark from sawmill, bag and resale
175. Remove lightning strike trees (insect damaged, mechanical injuries) for landowners
176. Start a custom forest herbicide application crew. (Must have forest commercial pesticide license.)
177. Start a forest tree planting business
178. Start a ornamental tree care service
179. Start a small Christmas tree plot
180. Adopt a community building for beautification (may use a local garden club)
181. Collect and sale dry/preserved native plant materials (acorns, leaves, wiregrass); especially for floral design retail/wholesale
182. Collect, press, mount and identify plants that are growing on campus
183. Construct a garden arbor
184. Construct backyard water gardens
185. Container gardening with ornamental plants
186. Container gardening vegetables
187. Create and market custom floral designs
188. Develop a business making dried arrangements to sell
189. Grow lirioppe for sale
190. Grow herbs for sale
191. Produce daylilies
192. Develop a park on public property
193. Entrepreneurship in floral design
194. Establish a community roadside wildflower planting
195. Garden plots at home or at school; produce crops to market
196. Grow and sale mushrooms
197. Grow and sell produce crops
198. Grow greenhouse plants on rented school greenhouse/cold frame space
199. Grow, harvest and can or preserve fruits and vegetables
200. Grow organic cut flowers for farmer's market
201. Horticulture therapy
202. Indoor plant rentals and care service for businesses and offices
203. Landscape maintenance
204. Landscape pruning enterprise
205. Offer a shrub care service (pruning, trimming and cutting back shrubs, fertilization)
206. Produce fruit crops (at home or school provided facilities) i.e. watermelons
207. Produce greenhouse crop (at home or school provided facilities) i.e. ferns
208. Produce perennials from seed
209. Produce turf grass (at home)
210. Propagate and market shrubs
211. Provide a fruit tree pruning service

212. Provide a mulching service for urban gardeners
213. Provide landscaping materials for local businesses (Pine straw and rocks.)
214. Raise tomato seedlings and replant into one-gallon pots to sell
215. Rent indoor plants to teachers in your school
216. Rent houseplants to homeowners. (Care for plants, change plants weekly)
217. Rent-A-Plant -- rent plants for wedding, banquets, parties i.e.; ferns and tropicals
218. Start a commercial flower up-keep business. Change hanging baskets, potted plants, and window boxes for business
219. Start a floral design business by creating table centerpieces for sale at farmers markets, grocery stores, and vegetable stands
220. Start a garden photography business
221. Start a hydroponics vegetable business
222. Start a lawn irrigation installation business
223. Start a renovating houseplant business
224. Start a turf grass establishment business (seeding, sodding, hydroseeding, etc.)
225. Start a vegetable transplant seedling business
226. Work at a florist
227. Work at a garden center
228. Work in a nursery business
229. Adopt a local stream to monitor water quality
230. Collect water run-off from school parking lot and analyze for various pollution indicators
231. Collect, mount, and identify insects found on school campus
232. Conduct a research project on how to prevent deer damage to a home garden
233. Conduct a water quality study on area lakes or streams
234. Conduct endangered plant surveys for landowners
235. Construct deer stands for sale. (Portable and stationary)
236. Construct duck nesting boxes for sale to landowners
237. Construct turtle traps for pond owners (Use this in conjunction with turtle farm as a source of breeding stock.)
238. Develop a backyard bird habitat
239. Develop a backyard wildlife habitat
240. Develop and/or maintain a wildlife food plot on private or public land
241. Monitor success rate of bluebird houses
242. Plan and develop a school nature trail
243. Plan and develop an outdoor classroom
244. Plant a butterfly garden at school
245. Provide a debris removal service along rivers and streams; sell driftwood and other items to consumers
246. Provide a pond fertilization and testing service
247. Provide custom dove shoots or quail hunts
248. Raise mallard or wood ducks for sale to pond owners
249. Raise popular game birds; sell them for meat and as taxidermy products
250. Start a bullfrog farm. (Sell fresh frog legs to local restaurants.)
251. Start a fish fingerling nursery. (Catfish, trout, bream)
252. Start a rock store; sell for landscaping purposes. (Gravel, pebbles, stones)
253. Start a wildlife food plot and native plant enhancement business for local landowners and hunting clubs
254. Start an equipment trailer fabrication business
255. Trap nuisance animals

zip\wpfiles\Portfolio - 2006\Section 4-Planning Sheets\Lyman Hall SAE Program