



Animal Science

Scouts BSA · Nature

Name

Started

Completed

Animal Science is about caring for the animals that feed and help people, from cattle and horses to chickens and sheep. You'll learn about breeds, health, feeding, and how farmers improve their herds. If you love animals or farms, this badge lets you dig in with real hands-on work.

Requirements

Every official requirement, in plain language. Check the official wording when you sign off (scouting.org/merit-badges/animal-science/). Tips and examples are ideas, not extra requirements.

- ☐ **1** Name two breeds in each livestock class (beef cattle, dairy cattle, goats, hogs, horses, poultry, sheep); tell each breed's main uses and strengths and where it originated

Tip: Visit a county fair or farm and look at the breed signs on pens. Ask owners why they chose that breed.

Example: For beef cattle you might name Angus (known for marbled beef) and Hereford (hardy grazers). For poultry, Leghorn (egg layers) and Cornish Cross (raised for meat). Make a quick chart with a photo and one use for each breed.

- ☐ **2** For each animal class in requirement 1, list two diseases; describe each one's symptoms, how animals catch it, and how it can be prevented

Tip: Ask a farmer or large-animal veterinarian which diseases they watch for and how they prevent them.

- ☐ **3** Draw digestive tract models for ruminants, horses, pigs, and poultry; explain how differences in their structure and function change the way each species is fed and managed

Tip: Build simple models of the digestive tracts with clay, tubes, or bags. Label each part so you can compare them side by side.

Example: Build four digestive tract models with labeled balloons, tubes, and string. Show the cow's four stomach compartments, the horse's large cecum, the pig's simple stomach, and the chicken's crop and gizzard, then explain why each animal eats what it does.

- ☐ **4** Pick a beef cow, dairy cow, horse, sheep, goat, hog, or poultry flock and explain how to manage it well, covering feeding, housing, disease prevention, waste removal, breeding, and biosecurity as they apply

Tip: Pick an animal you can see in person. Learn its daily needs for food, water, shelter, and health care.

Example: If you pick dairy goats, explain a day of care: fresh water, hay and grain amounts, hoof trimming, clean bedding, watching for signs of illness, and when to call the veterinarian. A daily chore chart makes it concrete.

5 Breeding and technology

Tips for this section: Ask a breeder or 4-H leader how they choose animals to breed and what tools they use today.

Example for this section: Explain crossbreeding with a simple example: crossing two breeds can produce calves that grow faster and stay healthier than either parent, sometimes called hybrid vigor. Then add one modern tool, like artificial insemination or genetic testing.

- ☐ **5a** Explain how producers improve their animals through breeding practices and programs

- ☐ **5b** Explain what pure breeding and cross breeding mean

- ☐ **5c** List two modern technologies used to raise beef or dairy cattle, goats, hogs, horses, poultry, or sheep, and tell the benefits of each

6 Animal specialty option: Choose 1 of 6

Tips for this section: Choose the animal you're most interested in or have the best access to. A local farm, 4-H club, or FFA chapter can help you get hands-on time.

Example for this section: If you choose sheep, a 4-H or FFA member can help you raise a weaned lamb to market weight. Keep a log of its feed, weight gain, medication, and vaccinations to give your counselor, plus photos of the animal (not other kids).

6a Option A: beef cattle

- ☐ **6a1** Visit a beef farm or ranch (feedlot, cow/calf, or purebred breeding stock) and learn from the operator how cattle are fed, handled, weighed, and shipped; report what you saw and learned. If you can't visit, use a breed association video or online research (with parent or guardian permission) and report

- ☐ **6a2** Sketch a feedlot plan with forage and grain storage and a loading chute for 30 or more steers being fattened, or a corral with loading and cutting chutes able to handle 50 or more cows and their calves at once

- ☐ **6a3** Sketch the main wholesale and retail cuts of beef; explain the USDA dual grading system for beef and what each grade in each system is based on

- ☐ **6a4** Define calf, cow, heifer, heiferette, freemartin, bull, bullock, and steer

6b Option B: dairy

- ☐ **6b1** Explain how a cow or goat turns forage and grain into milk, and how typical dairy cow feeds differ from beef cow feeds

- ☐ **6b2** Make a chart of the components of cow's or goat's milk, showing how much of each there is

- ☐ **6b3** Explain what it takes to produce grade A milk, and how and why milk is pasteurized

- ☐ **6b4** Describe the milking equipment used and the sanitation standards dairy farms must meet

- ☐ **6b5** Define buck, doe, kid, bull, cow, heifer, springer, and steer

- ☐ **6b6** Visit a dairy farm or milk processing plant and describe what you saw and learned. If you can't visit, use a breed or dairy association video or online research (with parent or guardian permission) and report

6c Option C: horse

- ☐ **6c1** Sketch a practical barn and exercise yard for saddle horses

- ☐ **6c2** Describe the history of the horse and how horses have helped people; discuss the special uses of each of the four horse breeds you chose in requirement 1

- ☐ **6c3** Define these horse terms. Sex and age: colt, filly, foal, gelding, mare, stallion; types: draft horse, mustang, pacer, quarter horse, trotter; colors and patterns: calico, overo, palomino, pinto, roan, tobiano

- ☐ **6c4** Visit a horse farm and describe what you saw and learned. If you can't visit, use a breed association video or online research (with parent or guardian permission) and report

- ☐ **6c5** Outline how to feed a horse doing light work and why feed type and amount change with the horse and its work; describe colic, its causes, and its symptoms

6d Option D: sheep or goat (pick one animal)

- ☐ **6d1** Sketch a live lamb or goat and mark where the wholesale and retail cuts are

- ☐ **6d2** Discuss how wool is sorted and graded

- ☐ **6d3** List products made from sheep or goat milk

6d4 Raise or visit sheep or goats: Choose 1 of 2

- ☐ **6d4a** Raise a weaned lamb or goat until it reaches market weight, recording feed, weight gain, medication, vaccination, and deaths, and give the records to your counselor to review

- ☐ **6d4b** Tour a farm or ranch raising sheep or goats and describe what you saw and learned. If you can't visit, use a breed association video or online research (with parent or guardian permission) and report

- ☐ **6d5** Define these terms for sheep (wether, ewe, ram, lamb) or for goats (doe, nanny, kid, buck, billy)

6e Option E: hog

- ☐ **6e1** Sketch the main wholesale and retail cuts of pork; explain the recommended USDA pork grades and what each is based on

- ☐ **6e2** Write an outline of proper feeding from breeding a gilt or sow through weaning the litter, and discuss feeding during the growing and finishing periods

6e3 Raise a pig or visit a hog operation: Choose 1 of 2

- ☐ **6e3a** Raise a weaned feeder pig until it reaches market weight, recording feed, weight gain, medication, vaccination, and deaths, and give the records to your counselor to review

- ☐ **6e3b** Visit a hog farm or a packing plant that handles hogs and describe what you saw and learned. If you can't visit, use a packer or processor video or online research (with parent or guardian permission) and report

- ☐ **6e4** Define gilt, sow, barrow, and boar

6f Option F: avian

- ☐ **6f1** Sketch a layer or broiler house with nests, roosts, feeders, waterers, and ventilation; explain how insulation, airflow, temperature controls, automatic lighting, and other controls shield birds from heat, cold, and weather, and why light matters for laying

- ☐ **6f2** Explain why overcrowding puts a poultry flock at risk

- ☐ **6f3** Explain how eggs are graded and describe the classes of chicken meat

6f4 Flock, chicks, or facility visit: Choose 1 of 3

- ☐ **6f4a** Run an egg-laying flock for 5 months, recording feed bought, eggs sold, medication, vaccination, and deaths, and give the records to your counselor to review

- ☐ **6f4b** Raise five chicks from hatching, recording feed, weight gain, medication, vaccination, and deaths, and give the records to your counselor to review

- ☐ **6f4c** Visit a commercial poultry operation and describe what you saw and learned. If you can't visit, use a poultry association video or online research (with parent or guardian permission) and report

- ☐ **6f5** Define chick, pullet, hen, cockerel, cock, and capon

- ☐ **7** Learn about three animal science careers; pick one, find out the education, training, and experience it needs, discuss it with your counselor, and explain why it might interest you

Tip: Look into jobs like veterinarian, rancher, animal nutritionist, or extension agent, and ask one about their path.