



Resica Falls Scout Reservation will be using the 2017 Boy Scout Merit Badge requirements for the 2018 season. This does not affect the validity of the merit badges earned this season. In this document is the requirements necessary for completing badges that have had their requirements changed this year. These are only to clarify the requirements needed to be done before camp for badges that have changed requirements in 2018.

Animal Science

Requirement 6 - "Complete ONE of the following options:

BEEF CATTLE OPTION

- a. Visit a farm or ranch where beef cattle are produced under any of these systems:
 1. Feeding market cattle for harvest
 2. Cow/calf operation, producing cattle for sale to commercial feeders
 3. Producing purebred cattle for sale as breeding stock to othersTalk with the operator to learn how the cattle were handled, fed, weighed, and shipped. Describe what you saw and explain what you learned. If you cannot visit a cattle ranch or farm, view a video from a breed association, or research the Internet (with your parent's permission) for information on beef cattle production. Tell about your findings.
- b. Sketch a plan of a feedlot to include its forage and grain storage facilities, and loading chute for 30 or more fattening steers; or sketch a corral plan with cutting and loading chutes for handling 50 or more beef cows and their calves at one time.
- c. Make a sketch showing the principal wholesale and retail cuts of beef. Tell about the U.S. Department of Agriculture (USDA) dual grading system of beef. Tell the basis of each grade in each system.
- d. Define the following terms: bull, steer, bullock, cow, heifer, freemartin, heiferette, calf.

DAIRYING OPTION

- a. Tell how a cow or a goat converts forage and grain into milk Explain the differences in feeds typically used for dairy cows versus those fed to beef cows.
- b. Make a chart showing the components in cow's milk or goat's milk. Chart the amount of each component.
- c. Explain the requirements for producing grade A milk. Tell how and why milk is pasteurized.
- d. Tell about the kinds of equipment used for milking and the sanitation standards that must be met on dairy farms.
- e. Define the following terms: bull, cow, steer, heifer, springer; buck, doe, kid.
- f. Visit a dairy farm or a milk processing plant. Describe what you saw and explain what you learned. If you cannot visit a dairy farm or processing plant, view a video from a breed or dairy association, or research the Internet (with your parent's permission) for information on dairying. Tell about your findings.

HORSE OPTION

- a. Make a sketch of a useful saddle horse barn and exercise yard.
- b. Tell about the history of the horse and the benefits it has brought to people. Using the four breeds of horses you chose in requirement 1, discuss the different special uses of each breed.
- c. Define the following terms: mare, stallion, gelding, foal, colt, filly; mustang, quarter horse, draft horse, pacer, trotter; pinto, calico, palomino, roan, overo, tobiano.
- d. Visit a horse farm. Describe what you saw and explain what you learned. If you cannot visit a horse farm, view a video from a breed association, or research the Internet (with your parent's permission) for information on horses. Tell about your findings.
- e. Outline the proper feeding of a horse doing light work. Explain why the amount and kind of feed will change according to the kind of horse and the work it does. Describe what colic is, what can cause it, and its symptoms.

SHEEP OPTION

- a. Make a sketch of a live lamb. Show the location of the various wholesale and retail cuts.
- b. Discuss how wools are sorted and graded.
- c. Do ONE of the following:
 1. Raise a lamb from weaning to market weight. Keep records of feed intake, weight gains, medication, vaccination, and mortality. Present your records for review by your counselor.
 2. Visit a farm or ranch where sheep are raised. Describe what you saw and explain what you learned. If you cannot visit a sheep farm or ranch, view a video from a breed association, or research the Internet (with your parent's permission) for information on sheep. Tell about your findings.
- d. Describe some differences between the production of purebred and commercial lambs. Then select two breeds that would be appropriate for the production of crossbred market lambs in your region. Identify which breed the ram should be.
- e. Define the following terms: wether, ewe, ram, lamb.

HOG OPTION

- a. Make a sketch showing the principal wholesale and retail cuts of pork. Tell about the recommended USDA grades of pork. Tell the basis for each grade.
- b. Outline in writing the proper feeding programs used from the breeding of a gilt or sow through the weaning of the litter. Discuss the feeding programs for the growth and finishing periods.
- c. Do ONE of the following:
 1. Raise a feeder pig from weaning to market weight. Keep records of feed intake, weight gains, medication, vaccination, and mortality. Present your records for review by your counselor.
 2. Visit a farm where hogs are produced, or visit a packing plant handling hogs. Describe what you saw and explain what you learned. If you cannot visit a hog production unit or packing plant, view a video from a packer or processor, or research the Internet (with your parent's permission) for information on hogs. Tell about your findings.
- d. Define the following terms: gilt, sow, barrow, boar.

AVIAN OPTION

- a. Make a sketch of a layer house or broiler house showing nests, roosts, feeders, waterers, and means of ventilation. Explain how insulation, ventilation, temperature controls, automatic lights, and other environmental controls are used to protect birds from heat, cold, and bad weather.
- b. Explain why overcrowding is dangerous for poultry flocks.
- c. Tell about the grading of eggs. Tell how broilers (fryers) are graded. Describe the classes of chicken meat.
- d. Do ONE of the following:
 1. Manage an egg-producing flock for five months. Keep records of feed purchased, eggs sold, medication, vaccination, and mortality. Present your records for review by your counselor.
 2. Raise 20 chicks from hatching. Keep records of feed intake, weight gains, medication, vaccination, and mortality. Present your records for review by your counselor.
 3. Visit a commercial avian production facility. Describe what you saw and explain what you learned. If you cannot visit a commercial facility, view a video from a poultry association, or research the Internet (with your parent's permission) for information on poultry production. Tell about your findings.
- e. Define the following terms: chick, pullet, hen, rooster, cockerel, cock, capon, tom, poult."

Archaeology

Requirement 4 - "Do TWO of the following:

- a. Learn about three archaeological sites located outside of the United States.
- b. Learn about three archaeological sites located within the United States.
- c. Visit an archaeological site and learn about it.

For each site you research for options a, b, or c, point it out on a map and explain how it was discovered. Describe some of the information about the past that has been found at each site. Explain how the information gained from the study of these sites answer questions that archaeologists are asking and how the information may be important to modern people. Compare the relative ages of the sites you research."

Requirement 5 - "Choose ONE of the sites you picked for requirement 4 and give a short presentation about your findings to a Cub Scout pack, your Scout troop, your school class, or another group."

Archery

Requirement 1C - "c. Tell about your local and state laws for owning and using archery tackle."

Astronomy

Requirement 5B - "b. Using the Internet (with your parent's permission) and other resources, find out when each of the five most visible planets that you identified in requirement 5a will be observable in the evening sky during the next 12 months, then compile this information in the form of a chart or table."

Athletics

Requirement 3 - "Select an athletic activity interests you. Then do the following:

- a. With guidance from your counselor, establish a personal training program suited to the activity you have chosen. Follow this training program for four months.
- b. Create a chart to monitor your progress during this time.
- c. Explain to your counselor the equipment necessary to participate in this activity, and the appropriate clothing for the time of year.
- d. At the end of four months, review the chart you created for requirement 3b, and, discuss with your counselor what progress you have made during training. Tell how your development has affected you mentally and physically."

Requirement 5 - "Complete the activities in FOUR of the following groups and show improvement over a three-month period.

Group 1: Sprinting

- a. 100-meter dash
- b. 200-meter dash

Group 2: Long-Distance Running

- a. 3k run
- b. 5k run

Group 3: Long Jump OR High Jump

- a. Running long jump OR running high jump (best of three tries)
- b. Standing long jump OR standing high jump (best of three tries)

Group 4: Swimming

- a. 100-meter swim
- b. 200-meter swim

Group 5: Pull-Ups AND Push-Ups

- a. Pull-ups in two minutes
- b. Push-ups in two minutes

Group 6: Baseball Throw

- a. Baseball throw for accuracy, 10 throws at a target (distance to be determined by age): ages 11 to 12, 20 feet; ages 13 to 15, 30 feet; ages 16 to 17, 40 feet

- b. Baseball throw for distance, five throws (total distance)

Group 7: Basketball Shooting

- a. Basketball shot for accuracy, 10 free-throw shots
- b. Basketball throw for skill and agility, the following shots as shown on the diagram
 1. Left-side layup
 2. Right-side layup
 3. Left side of hoop, along the key line
 4. Right side of hoop, along the key line
 5. Where key line and free-throw line meet, left side
 6. Where key line and free-throw line meet, right side
 7. Top of the key
 8. Anywhere along the three-point line.

Group 8: Football Kick OR Soccer Kick

- a. Goals from the 10-yard line, eight kicks
- b. Football kick or soccer kick for distance, five kicks (total distance)

Group 9: Weight Training

- a. Chest/bench press, two sets of 15 repetitions each
- b. Leg curls, two sets of 15 repetitions each”

Camping

Requirement 4B - “b. Help a Scout patrol or a Webelos Scout unit in your area prepare for an actual campout, including creating the duty roster, menu planning, equipment needs, general planning, and setting up camp.”

Requirement 5E - “e. Present yourself to your Scoutmaster with your pack for inspection. Be correctly clothed and equipped for an overnight campout.”

Requirement 7B - “b. Pack your own gear and your share of the patrol equipment and food for proper carrying. Show that your pack is right for quickly getting what is needed first, and that it has been assembled properly for comfort, weight, balance, size, and neatness.”

Requirement 8D - “Cook at least one breakfast, one lunch, and one dinner for your patrol from the meals you have planned from requirement 8c. At least one of those meals must be a trail meal requiring the use of a lightweight stove.”

Requirement 9 - “Show experience in camping by doing the following:

- a. Camp a total of at least 20 nights at designated Scouting activities or events.* One long-term camping experience of up to six consecutive nights may be applied toward this requirement. Sleep each night under the sky or in a tent you have pitched. If the camp provides a tent that has already been pitched, you need not pitch your own tent.
- b. On any of these camping experiences, you must do TWO of the following, only with proper preparation and under qualified supervision:
 1. Hike up a mountain, gaining at least 1,000 vertical feet.
 2. Backpack, snowshoe, or cross-country ski for at least 4 miles.
 3. Take a bike trip of at least 15 miles or at least four hours.
 4. Take a nonmotorized trip on the water of at least four hours or 5 miles.
 5. Plan and carry out an overnight snow camping experience.
 6. Rappel down a rappel route of 30 feet or more.
- c. Perform a conservation project approved by the landowner or land managing agency. This can be done alone or with others.”

Canoeing

Requirement 2 - “Before doing the following requirements, successfully complete the BSA swimmer test: Jump feetfirst into water over the head in depth. Level off and swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.”

Chemistry

Requirement 3 - “Construct a Cartesian diver. Describe its function in terms of how gases in general behave under different pressures and different temperatures. Describe how the behavior of gases affects a backpacker at high altitudes and a scuba diver underwater.”

Requirement 7 - “Do ONE of the following activities:

- a. Visit a laboratory and talk to a practicing chemist. Ask what the chemist does, and what training and education are needed to work as a chemist.
- b. Using resources found at the library and in periodicals, books, and the Internet (with your parent’s permission), learn about two different kinds of work done by chemists, chemical engineers, chemical technicians, or industrial chemists. For each of the four positions, find out the education and training requirements.
- c. Visit an industrial plant that makes chemical products or uses chemical processes and describe the processes used. What, if any, pollutants are produced and how they are handled.
- d. Visit a county farm agency or similar governmental agency and learn how chemistry is used to meet the needs of agriculture in your county.”

Emergency Preparedness

Requirement 6 - “Do the following:

- a. Describe the National Incident Management System (NIMS) and the Incident Command System (ICS).
- b. Identify the local government or community agencies that normally handle and prepare for emergency services similar to those of the NIMS or ICS. Explain to your counselor ONE of the following:
 1. How the NIMS/ICS can assist a Boy Scout troop when responding in a disaster
 2. How a group of Scouts could volunteer to help in the event of these types of emergencies
- c. Find out who is your community’s emergency management director and learn what this person does to prevent, protect, mitigate, respond to, and recover from emergency situations in your community. Discuss this information with your counselor, utilizing the information you learned from requirement 2b.”

Requirement 7 - “Do the following:

- a. Take part in an emergency service project, either a real one or a practice drill, with a Scouting unit or a community agency.
- b. Prepare a written plan for mobilizing your troop when needed to do emergency service. If there is already a plan, explain it. Tell your part in making it work.”

Requirement 8 - “Do the following:

- a. Tell the things a group of Scouts should be prepared to do, the training they need, and the safety precautions they should take for the following emergency services:
 1. Crowd and traffic control
 2. Messenger service and communication.
 3. Collection and distribution services.
 4. Group feeding, shelter, and sanitation.
- b. Prepare a personal emergency service pack for a mobilization call. Prepare a family kit (suitcase or waterproof box) for use by your family in case an emergency evacuation is needed. Explain the needs and uses of the contents.”

Requirement 9 - “Do ONE of the following:

- a. Using a safety checklist approved by your counselor, inspect your home for potential hazards. Explain the hazards you find and how they can be corrected.
- b. Review or develop a plan of escape for your family in case of fire in your home.
- c. Develop an accident prevention program for five family activities outside the home (such as taking a picnic or seeing a movie) that includes an analysis of possible hazards, a proposed plan to correct those hazards, and the reasons for the corrections you propose.”

First Aid

Requirement 2D - “d. Prepare a first-aid kit for your home. Display and discuss its contents with your counselor.”

Insect Study

Requirement 9 - “Raise an insect through the complete metamorphosis from its larval stage to its adult stage (e.g. raise a butterfly or moth from a caterpillar).”

Requirement 10 - “Do ONE of the following:

- a. Observe an ant colony in a formicarium (ant farm). Find the queen and worker ants. Explain to your counselor the different chambers found within an ant colony.
- b. Study a hive of bees. Remove the combs and find the queen. Estimate the amount of brood and count the number of queen cells. Explain how to determine the amount of honey in the hive.”

Nature

Requirement 4 - “Do all the requirements in FIVE of the following fields:

- (a) Birds
 - (1) In the field, identify eight species of birds.
 - (2) Make and set out a birdhouse OR a feeding station OR a birdbath. List what birds used it during a period of one month.
- (b) Mammals
 - (1) In the field, identify three species of wild mammals.
 - (2) Make plaster casts of the tracks of a wild mammal.
- (c) Reptiles and Amphibians
 - (1) Show that you can recognize the venomous snakes in your area.
 - (2) In the field, identify three species of reptiles or amphibians.
 - (3) Recognize one species of toad or frog by voice; OR identify one reptile or amphibian by eggs, den, burrow or other signs.
- (d) Insects and Spiders
 - (1) Collect, mount, and label 10 species of insects or spiders.
 - (2) Hatch an insect from the pupa or cocoon; OR hatch adults from nymphs; OR keep larvae until they form pupae or cocoons; OR keep a colony of ants or bees through one season.
- (e) Fish
 - (1) Catch and identify two species of fish.
 - (2) Collect four kinds of animal food eaten by fish in the wild.
- (f) Mollusks and Crustaceans
 - (1) Identify five species of mollusks and crustaceans.
 - (2) Collect, mount, and label six shells.
- (g) Plants
 - (1) In the field, identify 15 species of wild plants.
 - (2) Collect and label seeds of six plants; OR the leaves of 12 plants.
- (h) Soils and Rocks
 - (1) Collect and identify soils found in different layers of a soil profile.
 - (2) Collect and identify five different types of rocks from your area.”

Personal Fitness

Requirement 1B - “b. Have a dental examination. Get a statement saying that your teeth have been checked and cared for. Tell how to care for your teeth.”

Requirement 6 - “Before doing requirements 7 and 8, complete the aerobic fitness, flexibility, and muscular strength tests along with the body composition evaluation as described in the Personal Fitness merit badge pamphlet. Record your results and identify those areas where you feel you need to improve.”

Requirement 7 - “Outline a comprehensive 12-week physical fitness program using the results of your fitness tests. Be sure your program incorporates the endurance, intensity, and warm-up guidelines discussed in the Personal Fitness merit badge pamphlet. Before beginning your exercises, have the program approved by your counselor and parents.”

Requirement 8 - “Complete the physical fitness program you outlined in requirement 7. Keep a log of your fitness program activity (how long you exercised; how far you ran, swam, or biked; how many exercise repetitions you completed; your exercise heart rate; etc.). Repeat the aerobic fitness, muscular strength, and flexibility tests every two weeks and record your results. After the 12th week, repeat all of the required activities in each of the three test categories, record your results, and show improvement in each one. For the body composition evaluation, compare and analyze your preprogram and postprogram body composition measurements. Discuss the meaning and benefit of your experience, and describe your long-term plans regarding your personal fitness.”

Radio

Requirement 7 - “Visit a radio installation (an amateur radio station, broadcast station, or public communications center, for example) approved in advance by your counselor. Discuss what types of equipment you saw in use, how it was used, what types of licenses are required to operate and maintain the equipment, and the purpose of the station.”

Sculpture

Requirement 2C - “c. With your parent’s permission and your counselor’s approval, visit a museum, art exhibit, art gallery, artists’ co-op, or artist’s studio. After your visit, share with your counselor what you have learned. Discuss the importance of visual arts and how it strengthens social tolerance and helps stimulate cultural, intellectual, and personal development.”

Weather

Requirement 9 - “Do ONE of the following:

- a. Make one of the following instruments: wind vane, anemometer, rain gauge, hygrometer. Keep a daily weather log for one week using information from this instrument as well as from other sources such as local radio and television stations, NOAA Weather Radio All Hazards, and Internet sources (with your parent’s permission). Record the following information at the same time every day: wind direction and speed, temperature, precipitation, and types of clouds. Be sure to make a note of any morning dew or frost. In the log, also list the weather forecasts from radio or television at the same time each day and show how the weather really turned out.
- b. Visit a National Weather Service office or talk with a local radio or television weathercaster, private meteorologist, local agricultural extension service officer, or university meteorology instructor. Find out what type of weather is most dangerous or damaging to your community. Determine how severe weather and flood warnings reach the homes in your community.”

Wilderness Survival

Requirement 5 - “Put together a personal survival kit and explain how each item in it could be useful.”