

PLANT SCIENCE MERIT BADGE WORKBOOK

This Scoutmaster Bucky Merit Badge Workbook is based off the current *Scouts BSA Requirements*.

Consider also using the Plant Science merit badge class preparation page for clarification and expectations when participating in a Scoutmaster Bucky merit badge opportunity ([online](#) or [in-person](#)).

<https://scoutmasterbucky.com/merit-badges/plant-science/>

Scout's
Name:

Option 1: Agronomy

This workbook covers only one of the options for this merit badge. Check the Scoutmaster Bucky website for the other possibilities.

REQUIREMENT 1: Make a drawing and identify five or more parts of a flowering plant. Tell what each part does.

REQUIREMENT 2: Explain photosynthesis and tell why this process is important. Tell at least five ways that humans depend on plants.

REQUIREMENT 3: Explain how honeybees and other pollinating insects are important to plant life.

REQUIREMENT 4: Explain how water, light, air, temperature, and pests affect plants. Describe the nature and function of soil and explain its importance. Tell about the texture, structure, and composition of fertile soil. Tell how soil may be improved.

REQUIREMENT 5: Tell how to propagate plants by seeds, roots, cuttings, tubers, and grafting. Grow a plant by ONE of these methods.

REQUIREMENT 6: List by common name at least 10 native plants and 10 cultivated plants that grow near your home. List five invasive nonnative plants in your area and tell how they may be harmful. Tell how the spread of invasive plants may be avoided or controlled in ways that are not damaging to humans, wildlife, and the environment.

10 native plants

10 cultivated plants

Five invasive nonnative plants

How the spread of invasive plants may be avoided or controlled

REQUIREMENT 7: Name and tell about careers in agronomy, horticulture, and botany. Write a paragraph about a career in one of these fields that interests you.

REQUIREMENT 8: Choose ONE of the following options and complete each requirement:

Option 1: Agronomy

REQUIREMENT A: Describe how to prepare a seedbed.

REQUIREMENT B: Make and use a seed germination tester to test 50 seeds of four of the following plants: corn, cotton, alfalfa, soybeans, clover, wheat, rice, rye, barley. Determine the percentage of live seeds.

Completed

REQUIREMENT C: Tell about one important insect pest and one important disease that damage each of the following: corn, small grains, cotton. Collect and name five weeds that compete with crops in your locality. Tell how to control these weeds without harming people, wildlife, or useful insects.

REQUIREMENT D: On a map of the United States, identify the chief regions where corn, cotton, forage crops, small grain crops, and oil crops grow. Tell how climate and location of these regions make them leaders in the production of these crops.



REQUIREMENT E: Complete ONE of the following alternatives:

REQUIREMENT 1: Corn

REQUIREMENT A: Grow a plot of corn and have your plot inspected by your counselor. Record seed variety or experimental code number.

Inspected by counselor

Blank space for recording information.

REQUIREMENT B: Tell about modern methods of commercial corn farming and the contributions that corn makes to today's food and fuel supply.

REQUIREMENT C: Tell about an insect that can damage corn, and explain how it affects corn production and how it is controlled.

REQUIREMENT 2: Cotton

REQUIREMENT A: Grow a plot of cotton and have your plot inspected by your counselor.

Inspected by counselor

REQUIREMENT B: Tell about modern methods of commercial cotton farming, and about the uses of cotton fiber and seed and the economic value of this crop.

REQUIREMENT C: Tell about an insect that can damage cotton, and explain how it affects cotton production and how it is controlled.

REQUIREMENT 3: Forage Crops

REQUIREMENT A: Collect, count, and label samples of each for display: perennial grasses, annual grasses, legumes, and broadleaf weeds. Indicate how each grass and legume is used. Keep a log of the site where you found each sample and share it with your counselor.

REQUIREMENT B: Explain how legumes can be used to enrich the soil and how they may deplete it under certain conditions. Explain how livestock may enrich or deplete the soil.

REQUIREMENT C: Name five poisonous plants that are dangerous to livestock, and tell the different ways of using forage crops as feed for livestock.

REQUIREMENT 4: Small Grains

REQUIREMENT A: Give production figures for small grain crops listed in the U.S. Statistical Report or Agricultural Statistics Handbook for the latest year available.

REQUIREMENT B: Help in harvesting a crop of grain. Tell how to reduce harvesting losses and about modern methods of growing one small grain crop.

REQUIREMENT C: Visit a grain elevator, flour mill, cereal plant, feed or seed company. Talk with the operator. Take notes, and describe the processes used and tell your patrol, troop, or class about your visit.

Operator Name _____	Phone _____
Operator Signature _____	Date _____
	<input type="checkbox"/> Approved

REQUIREMENT 5: Oil Crops

REQUIREMENT A: Grow a plot of soybeans and have your plot inspected by your counselor.

Completed

REQUIREMENT B: Tell about modern methods of growing soybeans on a commercial scale, and discuss the contributions soybeans make to our food supply.

REQUIREMENT C: Explain why a killing frost just after emergence is critical for soybeans.