

CONTENT STANDARD 1.0: PLANT ANATOMY AND IDENTIFICATION

Performance Standard 1.1: Plant Anatomy

- 1.1.1 Identify and describe the primary parts of a plant and their function.
- 1.1.2 Identify the parts of a cell and describe their functions.
- 1.1.3 Identify the basic types of tissues found in a plant and their functions.

Performance Standard 1.2: Plant Identification

- 1.2.1 Discuss the systems of plant classification.
- 1.2.2 Differentiate between plant parts and modifications (roots, stems, leaves, flowers, fruits, seeds).
- 1.2.3 Determine plant identification by using a key.

CONTENT STANDARD 2.0: PLANT PROCESSES AND GROWTH AND DEVELOPMENT

Performance Standard 2.1: Basic Plant Processes

- 2.1.1 Explain the process and purpose of photosynthesis, respiration, transpiration, and absorption.
- 2.1.2 List factors that affect the rate of photosynthesis, respiration, transpiration, and absorption.
- 2.1.3 Distinguish between the characteristics of photosynthesis and respiration.

Performance Standard 2.2: Plant Growth and Development

- 2.2.1 List the stages of plant growth and development including germination, vegetative growth and reproductive growth.
- 2.2.2 List conditions affecting the vegetative growth of plants.
- 2.2.3 Demonstrate asexual and sexual reproduction in plants.

Performance Standard 2.3: Plant Breeding

- 2.3.1 List methods and strategies of pollination.
- 2.3.2 Describe the selective plant breeding process.
- 2.3.3 Demonstrate how to calculate heritability.
- 2.3.4 Interpret test plot data.

CONTENT STANDARD 3.0: SOIL AND WATER

Performance Standard 3.1: Elementary Study of Soils

- 3.1.1 Discuss the function of soil as it relates to plant growth, development, and maintenance.
- 3.1.2 Determine soil texture.
- 3.1.3 Identify five kinds of soil structure.
- 3.1.4 Determine how acidity and alkalinity effect the soil and methods of correcting pH problems.
- 3.1.5 Compare and contrast biotic and abiotic components of soil.
- 3.1.6 Identify soil conservation strategies.

Performance Standard 3.2: Soil Moisture Management

- 3.2.1 Identify reasons for irrigation including water holding capacity and soil moisture.

- 3.2.2 Recognize tillage practices associated with different soil structures and their effects on water infiltration.
- 3.2.3 Recognize water sources, delivery systems.
- 3.2.4 Describe Idaho's water doctrine and its significance in today's agriculture.

CONTENT STANDARD 4.0: PLANT NUTRITION

Performance Standard 4.1: Identify Sources and Roles of Plant Nutrients

- 4.1.1 Identify the functions of N-P-K-S.
- 4.1.2 Identify the primary sources or forms of N-P-K-S available to plants.
- 4.1.3 Differentiate the roles of macro and micro nutrients.

Performance Standard 4.2: Recognize Plant Nutrient Deficiencies

- 4.2.1 Explain the common causes of nutrient deficiencies in plants.
- 4.2.2 Analyze and identify common nutrient deficiencies related to the macronutrients required by plants.
- 4.2.3 Differentiate between nutrient deficiencies and common problems caused by biological pests or mismanagement.

Performance Standard 4.3: Analysis of Soils and Plant Nutrients

- 4.3.1 Calculate nutrient removal rate.
- 4.3.2 Interpret soil analysis.
- 4.3.3 Calculate fertilizer application and cost.

CONTENT STANDARD 5.0: INTEGRATED PEST MANAGEMENT

Performance Standard 5.1: Recognize Concepts and Principles of an Integrated Pest Management Plan

- 5.1.1 Recognize elements of the disease triangle.
- 5.1.2 Analyze economic thresholds of crop damage.

Performance Standard 5.2: Pest Identification

- 5.2.1 Discuss competition and economic losses caused by pests.
- 5.2.2 Recognize common Idaho weeds, insects, diseases.
- 5.2.3 Recognize common Idaho crops.

CONTENT STANDARD 6.0: CAREERS AND TECHNOLOGY

Performance Standard 6.1: Introduction to Technology

- 6.1.1 Discuss the improvements made through genetic engineering.
- 6.1.2 Describe the tools and techniques used for genetic modification.
- 6.1.3 Explore precision agriculture technology.
- 6.1.4 Recognize advancements in plant science.

Performance Standard 6.2: Marketing and Data Analysis

- 6.2.1 Interpret agricultural data (1. Test plots, 2. Soil and tissue analysis, 3. Market trends, 4. Cultivar/variety/hybrid selection).

Performance Standard 6.3: Career Exploration

- 6.3.1 Explore the careers that are available in plant science.
- 6.3.2 List the requirements of gaining and keeping employment in the field of plant science.

Performance Standard 6.4: Supervised Agricultural Experience

- 6.4.1 Accurately maintain SAE record books.
- 6.4.2 Investigate the proficiency award areas related to SAE program area.
- 6.4.3 Actively pursue necessary steps to receive high degrees in FFA.

CONTENT STANDARD 7.0: SAFETY

Performance Standard 7.1: General Safety

- 7.1.1 Identify and properly use personal protection equipment.
- 7.1.2 Read, understand, and follow label directions and SDS (safety data sheet).