

Instructional Scenario

Developing a Planting Area



Course/Duty Area: Introduction to Plant Systems/Using Basic Scientific Skills and Principles in Plant Selection

Scenario:

Your school has received an FFA Day of Service grant of \$500 to develop a planting area on campus or in the surrounding community. The grant requires that the project focus on responsible plant selection using scientific principles.

Possible project goals may include

- supporting pollinators
- using native or adapted plants
- improving food production for farm-to-table programs
- creating a low-maintenance landscape
- improving environmental quality
- increasing biodiversity
- using sustainable practices.

Each student (or team) has been assigned a small planting area approximately 10 ft × 20 ft. Because the areas are in different parts of the school grounds, each site may have different conditions such as shade, sun, soil type, drainage, or temperature differences that create microclimates. Students must design a planting plan that includes 5–10 plant species representing multiple plant types (e.g., perennial, annual, shrub, tree, vegetable, herb, turf, native). The final plan must be presented to a grant review committee, which will evaluate whether the design meets the project goals and correctly uses scientific principles.

Big Question:

How can scientific principles be used to select plants that will grow successfully in a specific environment?

Focused Questions:

- What factors must be considered when selecting plants for a specific location?
- How do U.S. Department of Agriculture (USDA) hardiness zones influence plant selection?
- How do soil, light, and moisture conditions affect plant growth?
- What are the advantages of using native or adapted plants?
- How do plant choices affect pollinators, wildlife, and the environment?
- How can plant selection support food production or community use?
- How do different plant species meet different functional needs?
- What economic or maintenance factors should be considered?
- How do microclimates affect plant survival?
- How can scientific information be used to justify plant choices?

Student Project or Outcome:

Students will design a planting plan for a 10 ft × 20 ft site at their school or in the surrounding community.

The plan must include

- at least 5–10 plant species
- multiple plant type

- correct use of USDA hardiness zone information
- consideration of site conditions
- justification for plant selection
- labeled diagram of planting area
- written explanation of choices.

Students must prepare a grant proposal presentation explaining why their design should be approved.

Project-Based Assessment:

Students will be evaluated using a rubric, based on their ability to

- correctly identify plant species
- apply scientific principles in plant selection
- apply knowledge of hardiness zones and plant requirements
- consider environmental conditions and microclimates
- include a variety of plant types
- explain environmental and economic benefits
- communicate ideas clearly in writing and speaking
- defend their choices to a review committee.

Assessment may include

- planting plan diagram
- written proposal
- oral presentation
- rubric-based evaluation
- peer or committee review using the grant applications from National FFA or Virginia Agriculture in the Classroom (VA AITC).

Teacher Resources:

- USDA Plant Hardiness Zone Map
- Virginia Cooperative Extension plant guides
- Native plant lists for Virginia
- Pollinator plant guides
- School landscape maps
- Seed catalogs / nursery catalogs
- Soil test reports
- Agricultural news articles on sustainability
- Farm-to-school resources
- Local conservation organization materials
- VA AITC/National FFA Grant Rubrics

Teachers may adapt the scenario to match local conditions and available growing areas.

Scenario submitted by Heidi Davis, Massaponax High School, Spotsylvania County Public Schools