

**Virginia Essentialized Standards of Learning (VESOL)
Instruction Resource
Science Sample Activities**

Grade HS Life at the Molecular/Cellular and Systems/Organisms Levels)

VESOL Code	VESOL Reporting Category	VESOL Text	Complexity Continuum
S-HS 2	Life at the Molecular/Cellular and Systems/Organisms Levels (LMCSOL)	Recognize that plants need light, air, and water to grow and create energy through photosynthesis.	Using simple pictures, diagrams, or representations, concepts could range from: <ul style="list-style-type: none"> • recognizing the difference between light, air, and water and that plants need them to survive and grow to • recognizing the term and role of photosynthesis and characterizing or comparing the growth of a plant, tree, or flower when different amounts of light, air, or water are provided to • recognizing plant parts associated with the basic inputs (water, sunlight, carbon dioxide) and outputs (oxygen, sugar) of photosynthesis (e.g., roots take in water during photosynthesis, leaves take in sunlight during photosynthesis, leaves release oxygen during photosynthesis).

Instructional Example

Objective:

Students will recognize that plants need light, air, and water to grow and create energy through photosynthesis.

Vocabulary: plant needs including food, air/oxygen, light, water, space; petals, roots, stems, flowers, sunlight, blossom, cycle, fruit, photosynthesis

Materials: *Sample activities range across a continuum of complexity and may include materials such as: real objects, experiential activities and manipulates that provide sensory awareness, visuals, manipulatives, graphic organizers, science rubrics, science notebooks, charts, graphs for documenting change and problem solving*

Procedures for Instruction:

These instructional activities can be used at various points on the complexity continuum, depending upon student ability. Many possibilities exist for lesson creation between the examples presented here. It is important to start instruction where the student is currently functioning and implement the appropriate instructional strategy with them. Once data indicate that the student is ready for the next level of instruction, proceed to it after reviewing the level the student has mastered. Let the data be your guide.

Sample Activity 1

Teacher will show real plants and models of plants. The student will conduct a scientific experiment by growing plants from seeds, providing the plant with light, air and water.

Sample Activity 2

Teacher will show real plants and models of plants. The student will conduct a scientific experiment by growing plants from seeds, providing the plant with light, air and water. The student, using visuals, will chart plant growth during the time of the experiment.

Sample Activity 3

Teacher will show real plants and models of plants. The student will conduct a scientific experiment by growing two plants from seeds, providing one of the plants with light, air and water. The other plant will be provided with differing amounts of the essential elements needed for growth. The student, using visuals, will chart each plant's growth during the time of the experiment. The student will be able to identify the role of sunlight (photosynthesis).

Sample Activity 4

Teacher will show real plants and models of plants. The student will conduct a scientific experiment by growing two plants from seeds, providing one of the plants with light, air and water. The other plant will be provided with differing amounts of the essential elements needed for growth. The student, using visuals, will chart each plant's growth during the time of the experiment. The student will be able to identify the role of sunlight (photosynthesis). The student will, using simple pictures, diagrams, models, or other familiar representations of photosynthesis, characterize or compare the growth of a plant, tree, or flower under different conditions.

Additional Resources:

SOL Science Enhanced Scope and Sequence-

https://www.doe.virginia.gov/testing/sol/standards_docs/science/2010/lesson_plans/index.shtml

Communication:

- [36 Location Universal Core Board](#)
- Core Vocabulary and Science: Core words that can be modeled and targeted during lessons:
 - Up (Plants grow up)
 - More (water, soil)
 - In (put seed in)
 - get (seed packet, water, soil)
 - See/look