Plants and Their Properties

3rd Grade

Overview	• Students will fully understand the manner in which to correctly use the scientific method through an experiment determining the basic physiology of plants.

Objectives	• Following this activity students will be able to:
	  ○ Explain the basic physiological needs of plants and how each factor contributes to the plant's survival.
	  ○ Describe the main components of the scientific method and what should be included in each.
	  ○ Understand how to use their current knowledge to create a hypothesis, predict what will happen, collect evidence, and interpret data.
	  ○ After learning this information, the students will be asked to identify the main components and examples of each step after being given a basic outline and are required to fill in either the correct step or example.

Standards	• The Scientific View of the World Standard 3.3.1; Scientific Inquiry Standards 3.1.2, 3.1.3, 3.1.4
Materials	• Textbook covering plants and the scientific method • Internet access connected to http://www.squareleaf.net/ • Multiple identical types of plants • Dark Closet • Water

Procedures	• Before beginning the activities, students should have read through the textbook and have the following information:
	  ○ The scientific method has four main steps: creating a hypothesis, experimentation, interpreting the evidence, and writing a final statement.
	  ○ Plants require numerous nutrients, soil requirements, and certain amounts of sunlight to remain living.
	• Divide the class into small groups and give each group a plant. The students will then brainstorm ideas about how plants work and what will change, if anything, when different requirements are altered (e.g. the amount of water or sunlight is decreased). Each group will create a diagram of their plant, highlighting the different characteristics, and explain their ideas to the class.

	• The student groups will connect to the Internet and access http://www.squareleaf.net/ to plan their experiment. Within the planning process, they will create their hypothesis and type their proposed experiments. • After creating their initial Squareleaf outline, the students will test their hypotheses and gather data through the next two weeks, entering their evidence into the website every day. • At the end of the two weeks, the students will relay their findings and present their data chart to the rest of the class. If their hypothesis was correct, they will explain why they predicted the outcome to be so. If their hypothesis was incorrect, the students will be asked to identify what their initial thoughts were in comparison to their final thoughts.
Evaluation	• The students will be graded according to the neatness and clarity of their data chart as well as their final statement. A quiz will be given in order to evaluate the students' understanding of plants and the scientific method.

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