

Teacher's Guid

Part # 1:

(Classroom should be equipped in advance with as many pictures and samples of plants as possible.). Students' estimated answers about the number of plant species should be recorded.

Part # 2:

(The teacher provides each group of students with samples of different plants which must include vascular and nonvascular plants such as mosses, liver plant (Pleiospilos), ferns, potato, orchid, corn, and beans.). Record the students' answers regarding classification of plants according to their tissue structure.

Part # 3:

(The teacher provides a straight straw with a suitable size and free of curvatures to be used by the students for the activity and encourage them to be creative without interference from his side. One of the solutions the students might come out with to install the book on the straw is to insert a pencil inside the straw to strengthen it.). Then, the teacher uses the straw and the book as an example to help the students understand the role of the stem in trees and relates it to their prior knowledge and experience.

Part # 4:

The teacher involves his students in a discussion about a set of pictures of plants with fruits by asking questions such as: What distinguishes these plants? What if all plants gave the same kind of fruit? What if all the plants do not have fruits at all? Then, the teacher relates plants to food, and records their answers.

Part # 5: (Samples of dried plants are distributed such as common sagebrush, Cresson, Mint, chamomile, fenugreek, and willow. The teacher provides cups and prepares hot water for the activity).

Then, the teacher asks the students several questions about the samples to explore and connect prior knowledge and experience as follows: Do these plants look familiar to you? Can you recognize their smells? Can you tell their names?

Part # 6:

(Samples of willow plant are distributed among all groups as well as boiling water, cups, an anatomy of knife, a spoon, and a pack of aspirin.).

The teacher relates the components of willow plant and the compound found in aspirin (salicylic acid) through questions as follows: Why do we use aspirin? Do you think the active ingredient found in aspirin had been extracted from willow plant?

The teacher asks the students to examine the components recorded on the pack of aspirin to identify the active ingredients.

Part # 7: The teacher records the summary of the questionnaire; note that the teacher may conduct the questionnaire with other classes inside or outside school. Then, the teacher discusses the importance of fuel in our daily life through a variety of questions about energy.

Part # 8: The teacher records the comparison and starts a discussion.

Part # 9: (The teacher may conduct the activity with his students if applicable in the school laboratory) or (View samples of used plant oils to simplify the idea of reusing them as an alternate fuel.)