

LESSON 3

Who Needs Plants?

OBJECTIVES

Student will be able to name 5-10 everyday objects that are made from or possible by plants.

METHOD

Students make lists of objects in the classroom that are made (directly or indirectly) from plants. They take home a sheet on which to record their dinner and what parts of it come from plants, or they can do this step with their lunch.

MATERIALS

 **Plants or Not?** Activity Sheet

BACKGROUND INFORMATION

Many of the products used in our everyday life are made from or made possible by plants. All of our food, with the exceptions of salt and a few other mineral items (baking soda, etc.) and fungi comes from plants either directly or indirectly (as feed for animals we eat). Plants also give us paper products (books, newspapers, wallpaper, money), wood (furniture, buildings, tools, fencing, sports equipment, fuel, boats, musical instruments, plywood, particle board), cardboard, much of the fabric used for clothing, bedding, rugs, carpet, curtains, furniture, some dyes and inks, adhesives, packing materials, rope, string, yarn, medicine, cleansers, rubber (toys, erasers, tires, boots, shoes, gloves, mechanical parts), cork, and other products. Even petroleum products (oil, gasoline, plastics) would not be possible without plants, the remains of which were made into petroleum through geological processes that applied heat and pressure to them.

PROCEDURE

1. Begin by asking your students to write the names of 10 items in their classroom, each item on a separate small piece of paper. When they are finished, ask your students to name some items humans use which are made from plants. For older students, you may want to ask them to estimate the percentage of classroom items made directly or indirectly from plants.
2. Now hand out the **Plants or not?** activity sheet. Working individually or in small groups, have your students look carefully around the room and make lists of items according to whether they are made from plants or plant-derived materials or not.

Grade level: K-8

Subject Areas: Biology, technology, social studies

Duration: 30 minutes in classroom, 10 minutes at home (or at lunch)

Setting: Classroom

Season: Any

Conceptual Framework Topic: Plant values to people

Extensions

Have your students list all the things they can think of that come from plants. You might give them categories to help them: building materials, sports equipment, paper products, health products, etc.

Besides people, animals also need plants. Discuss with your students: what do you think animals use plants for?

Have your students (or do this as a class) research unusual plant uses on the internet. They may want to check out *Plants for a Future* at <http://www.pfaf.org/index.php> or the UBC Botanical Garden at http://www.ubcbotanicalgarden.org/weblog/cat_novel_uses_of_plants.php to learn about some fascinating and unusual uses for plants!

3. Now ask students if they know what plastic is made from. If no one knows, tell them that most plastics are made from petroleum, or oil. Ask them if they know what oil is. If necessary, explain that oil was made by nature when tiny plants (and animals) died in the ocean millions of years ago. They sank to the bottom of the sea and were mixed with mud and silt. Over time, hundreds of feet of mud containing the organisms accumulated. As more mud piled on top of them, over millions of years, heat and pressure deep underground changed them into petroleum. So even some plastics, made from petroleum, come from plants! Does this change their assessment of which items are derived from plants?

4. After your students have had a chance to fill out their sheets, work as a group to create a class list of all the plant-based items vs. non-plant-based items. Which are there more of? Estimate about how much of the entire room and its contents are made from plant materials.

5. This step can be done with your students' lunch or they can take their data sheet home and do it at dinner. Have them make a list of the foods they eat at their meal. Make separate lists of plant-based foods and non-plant-based foods. For processed (packaged) or complex foods, have them look at the list of ingredients and determine if they come from plants or not. (Some ingredients, such as preservatives or food coloring, might be difficult to determine. They may want to have an "unknown" column.)

6. When you reconvene, as a group discuss the lists. How much of their food comes from plants? (This should be almost 100%, including meat.) Make sure they realize that even items like candy and snacks are, at least in part, made from plants (terms like modified starch, sucrose, vinegar, corn syrup, etc. may not be easily recognizable as such).

7. They could make a bar graph or pie graph with their papers of 10 items, plant-related items and non-plant items. (Remove any repeated items.) If you had them estimate percentages before they started, they could compare the actual result with what their original percentage guess was.

8. Ask your students how important they think plants are to their lives. Would they be able to get by without plants? What could they eat? What could they build a house out of? How would they get around? What could they play with?

Name _____

Plants or Not?

Look around your classroom! Do you think most of the things in your room are made from plants? Look carefully at the items in your room and try to figure out whether they are made from plants or not. Then list them in the appropriate column, based on your decision.

Category	Plant-based items	Non-plant-based items
Building	1 2 3 4 5	1 2 3 4 5
Furniture	1 2 3 4 5	1 2 3 4 5
School materials	1 2 3 4 5	1 2 3 4 5
Classroom equipment	1 2 3 4 5	1 2 3 4 5
Others	1 2 3 4 5	1 2 3 4 5