

Science Lessons for Grades K-5

“Trees”

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Discipline: Biology/Ecology

Grade: K to 2

Standards

5. The Living Environment: D. Interdependence of Life

Animals eat plants or other animals for food and may also use plants (or even other animals) for shelter and nesting. 5D/P1

5. The Living Environment: E. Flow of Matter and Energy

Plants and animals both need to take in water, and animals need to take in food. In addition, plants need light. 5E/P1

Purpose/Goal

Students will know what a tree needs to survive and the basic parts of a tree's structure. Student will be able to examine different items and decide if they come from trees. Students will gain an understanding that humans use trees in a variety of ways.

Motivation

A simple background on plant basics is enough to teach this lesson. It is my vision that this class is used within a unit on plants or living things. Then the students will already have learned basic background information about habitats and plant parts. An animal or plant's habitat is food, water, shelter and space in the right arrangement for survival. Plants also need light as a part of their food source. Basic plant parts include: roots, stem/trunk, branches, leaves/needles, flowers, seeds and fruits. Some younger classes may not recognize trees are plants, make sure to reinforce this concept.

Preparation

The teacher should print off pictures of products from trees: wooden baseball bat, paper, wooden house, Kleenex, violin, wooden spoons, books, cherries, bananas, cinnamon, or almonds. Look around the classroom for items/products that are made of tree materials.

Take a walk on the playground to identify where leaves and other tree parts can be collected.

1. Gather the materials for making leaf rubbings: paper (not construction paper) and crayons.
2. Gather reference samples from trees: collect leaves, cones, or seeds from various local trees. Prepare the sample by taping each leaf to a note card and placing cones or seeds into a zip-top bag.

Website

Project Learning Tree resources: http://www.plt.org/cms/pages/21_21_77.html

Wood You Believe; Idaho Forest Products Commission: http://www.idahoforests.org/wood_you.htm

Motivation

This lesson works well if students have just returned from lunch; the teacher can start off by asking if anyone ate plants for lunch or breakfast. It leads the students to think about eating plants and how we use plants everyday. After you take a few responses about what students have eaten, turn the conversation into the opening of the lesson.

Description

This lesson can be very flexible depending on your class and ability to take the class outside. Start the lesson with an engaging discussion about plants: What are plants, what do they look like, what do they need to live, are trees plants. Ask open ended questions, consider drawing a tree on the board and label parts of a tree as students suggest them, and also add what a tree needs to survive.

Next, move on to asking if animals and humans need trees: explain that animals use trees for shelter, homes, shade, food and that humans use trees for many other reasons too. You can explain that the majority of products we get from trees can be grouped in to three categories. Write these on the board (food comes from trees, paper comes from trees, wood comes from trees).

Complete the 'Why We Need Trees' activity. Give each student a picture of an item made from trees, have them guess which part of the tree the item comes from. Consider including a few examples that are not made from trees (toothbrush, tin can). If you want, chose other items from around the classroom to use as more examples.

There are a few options for outside activities:

1. Take the students on a walk around the playground or to an area where there are trees. Have students collect leaves for rubbings, have them talk about the shape/color/textures of their leaves and try to find the tree it came from. Also pick up seeds/nuts/cones and talk about how these are the reproductive structures of trees: look for ways that animals use trees. (You do not have to know the names of trees to do this!)

Once back inside, use crayons and paper to make rubbings of the leaves. Also use this time as a wrap-up: ask students questions about materials we get from trees, what trees need to live, etc.

2. While in the classroom, give each student a reference sample (leaves, cones, or seeds from a tree you know you will find). Lead the students on a walk and have them look for 'their' tree. It's like a treasure hunt for the students to find 'their' tree.

Consider spending a bit more time outside and have the students look for the letters of their name within trees, this part is creative and fun. The students will look for letters in branches and bark patterns. Also use this time as a wrap-up: ask students questions about materials we get from trees, what trees need to live, etc.

Assessment

Use time at the end of the lesson to ask questions about trees; cover the ideas you talked about in the introduction, but ask the students for the answers. Ask students questions about: the parts of a tree, what a tree needs to live, what items we use that are made of trees, and what we eat that comes from trees. Of course, these questions could be presented in a matching or labeling worksheet.

Follow-Up Activities

There are many ways to continue learning about trees. Make trees and plants a reoccurring theme of the week. Have students bring in an item from home that was made using tree products for 'show and tell'. Use trees for examples in math problems or chose an art project based on trees. Consider a Paper Making activity: making paper from shredded paper is relatively easy and quick, plus its fun and will reinforce the concept that paper is made from trees and can naturally lead to a conversation about recycling.