

Teacher's Guide

People Need Plants!

Introduction

This teacher's guide helps you teach young children about the uses of plants. Plants can provide a person's basic needs of food, shelter and clothing. They improve the air that people breathe and some plants even help healing. Animals find shelter and nourishment from plants. More than just pretty greenery, flowers or shade trees, plants are a vital part of the world we live in.

National Standards

This series supports Science, and Language Arts. Go www.enslowclassroom.com and/or www.enslow.com and click on the Curriculum Correlations tab. Click on your state, grade level, and curriculum standard to display how any book in this series backs up your state's specific curriculum standard.

Classroom Activities

Activities for teaching the five curriculum areas: Reading/Language Arts; Math, Science; Social Studies; and the Arts, can be found in this teacher's guide. Students will take a trip around the globe through plants that grow in different habitats

Guided Reading Level: M

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I like Plants! Teacher's guide
for
People Need Plants!

There are between 300,000 and 500,000 species of plants in the world. People at some point have used around 7,000 plant species for food. Plants have been instrumental in providing protection and shelter for centuries. They are building material for people as well as some animals. Cotton, flax and bamboo are used to make clothing while other plants are used for healing. All plants give off oxygen and absorb carbon dioxide, but not all plants should be touched or used. The key to safe use of plants is to know what the plant is. Without a positive identification it is unwise to use any plant for food, medicine or constructing shelter.

Shelter

People use wood from trees to build houses and furniture. Depending on the use it can be either hardwood or softwood. Hardwoods are dense and come from broad leaf deciduous trees. Oak, maple, and ash are a few hardwoods. Soft wood typically comes from evergreens, is less expensive than hardwood and has a faster growth rate. In colonial days on the prairie, when wood was not readily available settlers constructed homes from sod. Prairie grass has a tougher and thicker root structure than lawns today. Sod houses were constructed by cutting sod rectangles (about 2' x 1' x 6") and stacking them into walls.

Animals also use plants for shelter and protection. Many birds and squirrels build their nests in trees. Beavers cut young trees to make their dens. Cattails and other grasses are woven into bird nests. Chipmunks sometimes make their home in the holes of trees. In the rainforest animals such as the howler monkey and sloth make their homes in the trees, and the tree can be the home of more than 1,000 different insect species. In the desert plants provide shade and shelter for animals. Animals, unlike humans, are limited to the plants that are native to their biome.

Food

People use different plant parts for food. Roots, stems, leaves, flowers, seeds and fruits are eaten. Some examples of roots: radish, beet, carrot, parsnip, onion; examples of stems: asparagus, celery; examples of leaves: lettuce, cabbage, spinach, parsley, oregano; examples of flowers: cauliflower, broccoli; examples of seeds: rice, wheat, corn on the cob, peas, beans; examples of fruit: eggplant, squash, tomatoes, cucumbers.

Animals also use plants for food, often feeding on parts that humans do not eat. Various animals consume acorns, maple seeds and buckthorn berries. Some animals eat only vegetation and are known as herbivores. Other animals, omnivores, eat a varied diet that includes plants and meat. To explore more about herbivores visit

<http://www.qrg.northwestern.edu/projects/marssim/simhtml/info/whats-a-herbivore.html>

Clothing and fibers

People have made clothing from plants for centuries. Linen, the oldest fabric, is made from the stem of the flax plant. Its use can be traced back at least to the Egyptians. The fruit (boll) of the cotton plant splits open and the seed hairs (as many 20,000 hairs per seed) are used to make cotton fabric. Ramie, a shrub and member of the nettle family, has been used to make cloth for centuries. Along with Linen, it has been found used in mummy preparation. The outermost layer of cloth at times is a coarse loosely woven ramie fabric. Bamboo, an addition to fabric production in the 20th century, is really a tall grass. The fibers are woven from the pulp of bamboo grass. Jute is used to make burlap, carpet backing and rope. It is obtained from a species of the Linden family that is native to India. Sisal, used to make rope, comes from the

desert Agave plant. Paper is made from wood pulp.

Although fibers are plant based they may require chemical processing to be spun into fibers and then woven into cloth. Natural dyes can be made from roots, berries and leaves.

Healing and more

The aloe vera plant is a succulent. It retains water in its leaves and is adapted to very dry climates. The sap, or sticky gel inside the leaves, helps soothe burns. This sap is often used in sunburn creams. Many modern medicines have their origin in plants. Aspirin is naturally found in willow branches. Echinacea, blue coneflower, has antibiotic properties. A variety of small leaf herbs are dried and used as teas for digestive problems.

All plants take part in putting oxygen into the air. Plants in a classroom or home help improve the air. To explore the oxygen and carbon cycles visit here

<http://www.realtrees4kids.org/sixeight/cycles.htm>

Activities The Five Curriculum Activities

SAFETY WARNING:

Before any activity, make sure your students do not have any allergies to items that you might use. Never use anything that is sharp or may cut a student. Do not use anything too hot or cold which might injure any student. Always have an adult supervise all activities to ensure the safety of you students.

Reading/Language Arts activity:

Beginning readers will find easy words and repetitive phrases throughout the book. Almost all the words used in this book can be found in the Dolch word list. To learn more, visit www.dolch-words.com. Additional words, which may be specific to this book, can be found in the Words to Know on page 3.

Math activity:

Describe various lunch options. (Peanut butter and jelly sandwich with pretzels and an apple) Have students list all the plants that are part of that lunch. If possible make a sample. If the lunch is in a paper bag the bag counts too! Have students design their own lunch and see who can create a lunch with the most plants. This activity can be done in pairs. Record the number of plants used by each group and total them up. What would lunchtime look like without plants?

Science activity:

Using local grocery ads, have students cut out pictures that are plant based. This can include unprocessed plants as well as items that are processed from plants. Discuss ways that these can be sorted. Sort them by what part of the plant is eaten. Sort them by the time of year they are ripe. Apples are ripe in the fall and berries ripen in spring and summer. Sort them by plants they like to eat and ones they don't like to eat. Sort them by unprocessed (tomato) and processed (ketchup). Have them choose a sorting option and create a chart. This is classifying by common trait or characteristic.

Social Studies activity:

On a sheet of graph paper have students draw a map. Have them draw a small school in the center of the paper. Add two streets on either side of the school and label them. (A map of the area can be used as a resource.) This should use the entire paper. Draw a sample for them to refer to. On the streets have them mark what kinds of plants they find. Are there trees? Are there flower gardens? Are there any businesses like grocery stores or plant nurseries that sell plants? Are there lawns? If time permits have them add other items that are plant based such as houses and fences and bird nests. Wrap it up by asking what it would look like if there were no plants? (Your sample is the answer!) People need plants!

Arts activity

Each student will need a piece of wax paper (used under their cloth) and a piece of white cotton tee-shirt. One or two large white tee-shirts yield enough 4 inch squares for a typical class. (A piece of white paper towel can be substituted for the cotton tee-shirt.) Prepare several natural dyes. Soak ten tea bags in a quart of water overnight. Grape juice can be used for purple. A red juice (cranberry, pomegranate) can be used for red. Each color can be placed in a flat baking pan at a station. This centralizes each color and minimizes the chance of spills. Paintbrushes stay at each station. (Cotton swabs can be substituted for paint brushes.) Allow children to decorate their piece of cloth. Once they have visited each color station put their designs in a drying location. Discuss the role of plants in what they just did. Display the designs once they are dry.

Reproducible

Meal Math!

Answer the questions. Then write a math sentence that shows what you know. The first one is done for you.

1. You pack a snack with 3 carrot sticks, 4 celery sticks and 5 apple slices.

How many pieces of roots did you put in your snack? 3

How many pieces of stems did you put in your snack? 4

How many pieces of fruit did you put in your snack? 5

How many pieces did you put in your snack in all? 12

$$3 + 4 + 5 = 12$$

2. You make a fruit salad with 10 blueberries, 4 strawberries, 7 grapes and 12 walnut pieces.

How many pieces of nuts did you use in your salad?

How many pieces of fruit did you use in your salad?

How many pieces did you use in your salad in all?

3. You make a fresh salad with 4 lettuce leaves, 6 spinach leaves, 1 red onion, 5 small tomatoes and 3 carrots.

How many pieces of root did you use in your salad?

How many pieces of fruit did you use in your salad?

How many pieces of leaves did you use in your salad?

How many pieces did you use in your salad in all?

If you are up for a challenge, flip the sheet over and write your own!