

## Plants Grow Children Curriculum

### TREE-MENDOUS TREES

Students learn about trees, parts of the trees, and how they can care for trees. Each student will receive a booklet. They will move through six activities to learn more about trees.

#### Grade Level

1-2

#### Objectives

- To discuss and learn what a tree is.
- To learn the major parts of the tree and their functions.
- To learn the needs of a tree and what how they can personally nurture them.
- To develop an appreciation of the importance and impact of trees in our lives.
- To introduce the incredible variety of trees on earth.
- To experience "hands on" activities of tree foliage, ages and products.

#### Vocabulary

tree	shrubs
annual	pith
perennial	cones
conifer	broadleaf
evergreen	deciduous
roots	trunk
bark	cambium
sap	whorls
crown	branches
fruit	photosynthesis
annual rings	increment core

#### Time

60 minutes.

#### Lead Time Required

1-5 days to read and prepare station material. Broadleaf material must be gathered fresh each class day.

#### Activity Materials

- One printed Tree-mendous Tree Booklet
- Extra pencils

#### Demonstration Materials

- Tree Poster showing the major parts of a tree and how the annual growth is layered.
- A tree identification field guide.
- A poster showing a x-section of a trees rings and picture of an increment borer and core. Actual tree x-section and an increment bore and core can be shown instead.
- A comparison poster of the size and longevity of trees to other organisms.
- A variety of fresh leaves, flowers, seeds, and products.

#### Teaching Procedure

1. Introduce yourself. Tell the class who you are. Explain briefly about the WSU Master Gardener Program and why you are in the classroom.
2. Tell the class they will learn about trees - what a tree is; the parts of a tree and what they do; the two major types of trees (deciduous-broadleaf and

evergreen- conifers); where are they found; the relative size and age of trees and how to tell their ages by whorls, x-sections, and increment; and why they are important.

#### Discussion

1. Define a tree by comparing what a tree is and what a shrub is. A tree is a woody plant with an erect perennial trunk at least 3 inches in diameter at dbh (diameter at breast height)(4.5 feet)), a definitely formed crown of foliage and height of 13 feet.
2. Discuss perennial versus annual.
3. To demonstrate the difference between the two major plant groups. Show fresh material of a broadleaf and conifer tree. Hold a fresh sample of each group in separate hands.

Discuss the broadleaf as having broad leaves to emphasize the term broadleaf, in contrast to the conifer sample as having narrow needle-like leaves. The deciduous nature of most broadleaf trees versus the evergreen nature of the conifer can be emphasized. However, discuss that when dealing with plants there are many exceptions:

- Broadleaf trees with narrow leaves e.g. willows.

- Broadleaved evergreens e.g. some oaks, holly and many tropical plants.
  - Deciduous conifers e.g. larches.
4. Ask how tall tree a tree can get. Show the comparison poster of tall trees and other living things. The tallest trees are Redwood and Sequoia trees, reaching over 325 feet tall at maturity. Have the students imagine the length of a football field then stand it straight up. Ask how long it took for a tree to get that size. Redwood and Sequoia that size are 2000 to 3000 years old. To give the students a sense of this age relate it to our calendar being almost to year 2000. Have the students guess the age of the oldest living tree. The Bristlecone Pine of California lives to an estimated 5000 to 6000 years old.
  5. Show Tree Poster of the major parts of a tree.
  6. Discuss the roots and what they do for the tree. The function of roots is to feed or nourish plants, take up water, anchor plant, and store food. Roots are important to plants because they provide support, water, and nutrients. Tree and other plant roots help reduce water and wind erosion.
  7. Discuss the stem or trunk of the tree, how bark varies between species and how trees grow. Broadleaf trees have one central stem but branch into large branches. Conifers have a central stem or trunk up to the crown.
- Discuss the location and function of the cambium. Temperate trees add a distinct layer each year. Yearly growth is difficult to measure in tropical regions where growth continues throughout the year. A good way to relate to students how trees increase from the cambium in diameter each year is similar to adding layers and layers of clothes on the students. The more layers, the bigger the student is in circumference and diameter.
8. Discuss the crown of the tree and the function of the branches, leaves, flowers and fruits. Ask what is the largest seed? (Palm Tree "Coco de mer" at 20 inches long.)
- Discuss why the crown is important and what it does. Some examples are its importance are
- Maintaining fresh air by changing CO<sub>2</sub> into O<sub>2</sub> through photosynthesis.
  - Cooling the air by changing water into water vapor through the process of transpiration.
  - Stabilizes dust and entraps air pollution gases.
  - Many products made from parts of the crown, such as the fruits, leaves, and flowers.
9. Discuss the ways of telling the age of a tree. Show a cross-section of a conifer tree. Demonstrate how to count the rings from the pith or center of the tree to the cambium by the bark. Talk about why you only count one-half of the x-section. Discuss what would happen if we cut down all the trees to get the ages of the tree? Tell them about nondestructive ways of getting the age of trees. Demonstrate how to count the whorls or yearly branches of trees, emphasizing that this method only works on smaller conifer trees. Next show an increment core and discuss how you get the core. Show the age poster or actual equipment, if available. Demonstrate how to count the rings from the center or pith to the bark.
  10. Show a tree identification manual to introduce that there is many different kinds of trees through out our country and the world. Ask about the state tree.
  11. Discuss what trees do for each of us. What we like to do with trees e.g. eat, climb, cool or just look. Take time to talk about what the student can do for trees. Examples are do not climb small trees, strip or cut up the bark, then talk about what happens when the cambium gets hurt. Tell the students that trees need a lot of water in our summers and should be given a deep watering once a week in summer. For Tri-Cities, relate that this is a desert and trees only grow here with our help and care.
  12. Discuss products we get from trees, food from fruit,

products around their school rooms .... furniture, pencils, paper. Other products are: leaves for spices --Bay leaf, seeds -- coconut, pecans, walnuts and the spices nutmeg & allspice, fruit-- apples, cherries, mango, etc, flowers -- cloves, jasmine tea, bark -- dyes, cinnamon, medicines, sap -- maple syrup, rubber, chewing gum. The stations will reinforce the discussions.

### **Action Learning**

1. Distribute tree booklets and pencils, if needed, to the students. Have the students print their name on their booklet. Display and explain each station and its activity. Explain how the stations

rotate. Have the teacher split the class into even numbered groups for each station.

2. Explain and help the students at each station. Some stations are self-explanatory and need little supervision and several stations need more help from the assistants. (This class should be done with at least two assistants.)

3. The students may finish non-station activities at home. Suggest that the students take the booklet home to share with their parents.

4. Give each student the take-home handout. It briefly

explains what the children learned about and tells about WSU Cooperative Extension and its programs.

### **Evaluation**

- Make notes of successes, problems with the unit or classes, interesting comments from the children.

- Take a camera with you if it is convenient to take pictures of the students and their activity.

- Give the teacher the evaluation form. Ask her or him to fill it out and either give it to you then, or mail it to the Extension office at the address indicated on the evaluation form.

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*By WSU Master Gardeners, Benton-Franklin counties and Marianne C. Ophardt, WSU Area Extension Agent, Benton-Franklin counties.*

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