



“TREE”MENDOUS POSTVISIT MATERIAL

Thank you for visiting Millcreek MetroParks. The naturalist staff suggests the following activities to further the study of trees with your students:

Leaf Pictures (autumn activity)

Take the students into the schoolyard to collect colorful autumn leaves. If the leaves are damp, allow them to dry. Pressing the leaves is a good idea. Have the students glue or tape a few leaves to construction paper, then create pictures of animals or whatever they like, using the shapes of the leaves, and adding details with crayons or markers. Be creative.

Maple Seed Mix-up

Use the directions provided to play this fun game showing how trees are dependent, for their growth, upon the conditions in their environment. (Adapted from *Naturescope: Trees Are Terrific!*, National Wildlife Federation, 1985)

Poet-Tree

On the enclosed activity sheet is an outline of a tree. The students are to write a poem about trees inside of the tree shape. If they prefer, they may write words describing trees. For ideas to get the students thinking, see the information sheet, entitled *Poet-Tree*. You might like to have them write about their adopted tree. (Adapted from *Project Learning Tree Environmental Education Guide*, American Forest Foundation, 1994)

More Adopt-A-Tree Activities

Me & My Tree

Take pictures of the students with their trees. Have them create frames and include them in their “Adopt-a-Tree” notebooks.

Seasonal Trees

If the class has observed their adopted trees through more than one season, have them do drawings or creative descriptions showing the changes throughout the year.

How Big Is Your Tree?

In addition to helping students become more familiar with tree structures, these activities make a great math lesson in measurement, averaging and ratios. Use the measuring activities described on the *How Big is Your Tree?* Instruction sheet with the entire class first. Ideally, select a tree in an open area where its shadow can be seen. Later, have the students try the same measuring activities with their adopted trees, recording their findings in their notebooks. To accomplish some measurements, they may also have to work in groups on the adopted trees. (Adapted from *Project Learning Tree Environmental Education Guide*, American Forest Foundation, 1994; and from *Botany for All Ages*, Jorie Hunken and The New England Wild Flower Society, 1989)

Activity: MAPLE SEED MIX-UP

In this running game, kids learn how "chancy" it is for a seed to get to a good place to grow. It is adapted from a series of books by the National Wildlife Federation called NatureScope.

Trees' seeds have adapted in many ways that increase their chances of sprouting. Most have special ways of getting to a place where they might be able to grow. Yet whether a seed ends up in a place where it can sprout and grow is really a matter of chance. That is why, out of the millions of seeds a tree may produce in its lifetime, only a small percentage, if any, will ever become trees.

MATERIALS:

Slips of paper Hat or box Pen or pencil

1. Before you start, write down one Favorable Condition or Hazard on a piece of paper (see examples below). The number in parentheses indicates how many of each item to write out. Avoid adding a lot of hazards, as that makes the game difficult to win.

Favorable Conditions:

Good Soil (4)
Sunlight (4)
Warm Spring Days (4)
Water (4)

Hazards:

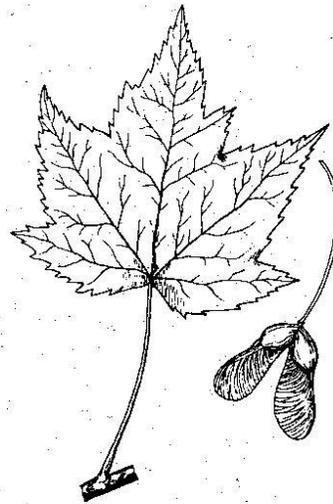
Drought (1)
Hungry Rabbit (1)
Lawn Mower (1)
Poor Soil (1)
Sidewalk (1)

2. This game should be played in an open area. Designate four bases around which the kids will run.
3. Begin with a discussion of what a seed needs to sprout (water, sunlight, warm days, good soil). Explain that most seeds never sprout because they land in an area where the conditions are not right. Even if a seed does land in a place where it can sprout, it may still be eaten by a rabbit or chopped by a lawn mower.
4. Tell the kids they will be playing a running game. In this game, two or more people will play the part of maple seeds. Everyone else will be a favorable condition or a hazard. The object of the game is for the "maple seeds" to "land" in a place that is free of hazards and that has the four conditions that the seed needs to grow. As in nature, the place that seeds land will be a matter of chance.
5. Each child then draws a slip of paper from the hat to find out what role he or she will play. Tell the kids to keep their roles a secret, and have them hang on to the slips so you can play again.
6. Slowly count to ten while the kids run around the bases. When you get to ten, the kids should run to the nearest base. Try to see that they do not bunch up around one or two bases.
7. Once the kids have settled, ask those who were maple seeds to raise their hands. The groups without seeds can not win, but represent sites the seeds did not land on. Next have the other kids reveal what parts they played. If the group had one or more hazards, the group does not win. But if a group has no hazards and at least one of each of the favorable conditions, then the group wins. When a group wins, point out that they won only because the seed landed there by chance.
8. You may have to play several times to get a winning group. This happens in nature too. Before you play a new game, have the kids put the slips back in the hat. To make the game easier, delete one or two of the hazards and add a few more favorable conditions.

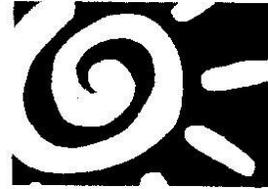


Adapted from:
National Wildlife Federation. 1985. **Ranger Rick's NatureScope: Trees are Terrific!**
National Wildlife Federation. Washington, DC. p.32.

Illustration:
Phelps, Sarah. 1981. **Michigan Trees: A Guide to the Trees of Michigan and the Great Lakes Region.** University of Michigan Press. Ann Arbor, Michigan. p. 195.



POET-TREE



Overview

Writing and sharing poems will give your students an opportunity to express their feelings, values, and beliefs about the environment and related issues in creative and artistic ways.

Background

Poetic Forms

Haiku is a Japanese form of poetry that consists of three lines: the first line has five syllables, the second line has seven, and the third line has five again.

EXAMPLE

The snow-covered tree
Sparkles in the soft moonlight.
The wind rushes by.

Cinquain poems consist of five lines, and each line has a mandatory purpose and number of syllables: ① the title in two syllables, ② a description of the title in four syllables, ③ a description of action in six syllables, ④ a description of a feeling in eight syllables, and ⑤ another word for the title in two syllables.

EXAMPLE

Forests
Graceful, growing
Climbing among the clouds
Calmly awaiting the sunrise
Alive.

Diamante poems are diamond-shaped and consist of seven lines that follow the following pattern:

noun
adjective adjective
participle participle participle
noun noun noun noun
participle participle participle
adjective adjective
noun

EXAMPLE

seed
small buried
growing breathing living
protection oxygen shade habitat
dying rotting crumbling
moist rich
soil

In **acrostic** poetry the first letter in each line, when read vertically, spells out the name of something or conveys some other kind of message.

EXAMPLE

Towering
Reaching
Extending
Embracing the sky.

The words in **picture poetry** form a picture of what is happening in the poem.

EXAMPLE (a tree)

branches
shade rubber
fruit clothes
paper wind barrier fuel
furniture resource nuts
tree houses maple syrup parks
multiple uses seeds oxygen
lumber habitat energy
building materials
baseball bats leaves
photosynthesis
roots
gum
cork
books
paint
cocoa
sponge

A **windspark** poem has five lines with the following pattern: ① "I dreamed," ② "I was..." (something or someone), ③ where, ④ an action, and ⑤ how.

EXAMPLE

I dreamed
I was a tree
On a hillside
Playing with the wind
Joyfully.

Grades 3-8

Language Arts, Science, Social Studies

Humans throughout the world create differing social, cultural, and economic systems and organizations to help them meet their physical and spiritual needs. (3.2)

Natural beauty, as experienced in forests and other habitats, enhances the quality of human life by providing artistic and spiritual inspiration, as well as recreational and intellectual opportunities. (3.4)

Most cultures have beliefs, values, and traditions that shape human interactions with the environment and its resources. (9.1)

Observing, Composing, Discussing

Students will ① express their feelings and attitudes about the environment using various forms of poetry and ② analyze their own and other people's poetry to discover its full meaning.

Paper, pens or pencils, and clipboards (or cardboard and paperclips) for writing outdoors

Preparation: 15 minutes

Activity: 50 minutes

How Big is Your Tree?



Measuring in the Classroom

Explain that in early times people used their own bodies (hand spans for example) to measure things. Practice measuring items in the classroom using different body parts: hand span, arm span, finger length, walking pace, foot length. Record measurements in some sort of chart form. On the board, use a chart to compare various students' measurements for the same item. Note and discuss differences. Have students give reasons for the differences. Discuss reasons why standard measurements (such as feet, inches & centimeters) were adopted. Explain that because of the shape and size of some trees, the measurements that we will be doing are a little more complicated than just using a standard ruler or yardstick.

Circumference of a Tree

- Have students record: Their estimate of the selected tree's circumference
- The tree's circumference using arm or hand spans.
- The tree's circumference using a string and a yardstick or a tape measure.

Explain that foresters measure a tree at 4.5 feet (about chest height). Ask if they can think of reasons to always measure at the same height? Explain that a tree is wider at the bottom. If taken at different heights, the measurements will all be different.

Measuring the Crown

The crown spread of a tree is the distance its branches spread away from the trunk. Ask students to estimate the crown spread of a selected tree in hand spans, paces, feet etc. Measure the average spread in the following manner: One student (A) stands under the branch tip farthest from the trunk. Another student (B) stands under the longest branch tip directly opposite Student A. Measure from Student A to Student B. Repeat using the shortest branch tip and its opposite. Average the two numbers to find the tree's average crown spread.

Measuring Leaves and Needles

Ask the students if they think that all of a tree's leaves or needles are the same size. Divide students into pairs and ask each pair to measure the length and width of a tree leaf or needle using finger widths and then a ruler. Record findings on a class chart. Compare and discuss their findings.

Measuring Height With Shadows

With this method, you will use three known measures to find the unknown height of a tree. On a sunny day, measure the shadow of your tree. (Using only inches or centimeters will simplify later calculations.) Next, stand a yard or meter stick on end and measure its shadow. The relationship between the tree and its shadow is equal mathematically to the relationship between the stick and its shadow. So, the following formula may be used:

$$\frac{\text{tree's height}}{\text{tree's shadow length}} = \frac{\text{measuring stick (36 in. or 100 cm)}}{\text{stick's shadow length}}$$

$$\text{or tree's height} = \frac{\text{stick length} \times \text{tree shadow}}{\text{stick's shadow}}$$

Measuring Height With Proportion

This method works with no sunshine. Stand far enough away from the tree so that you can see the entire length without moving your head. Hold a straight stick or pencil at arm's length so that the top of the stick appears to touch the top of the tree. Put your thumb on the stick where it matches the foot of the tree. Without moving the hand any closer to your eye, turn the stick so that it covers the ground horizontally, your thumb still touching the stick and appearing to touch the base of the tree. Have a friend move to stand in the spot covered by the tip of your stick. Then, measure the distance between the friend and the foot of the tree. This will equal the tree's height.