

Adopt-A-Tree

Outdoor Field Trip Activity

GRADES

1-8

TIME

30-60 minutes

OBJECTIVE

Students will use their senses and observational skills to learn the basic characteristics of a tree. This activity will encourage students' environmental awareness by making them more aware of trees as individual beings.

METHOD

Students will partner up. One will choose the adoptee tree and lead their blindfolded partner to this tree. The blindfolded partner will then feel, smell and listen to the tree before being led back to the startpoint. Then they try to locate their tree by using the information they gathered while blindfolded. The partners then gather other vital information from their tree through portrait drawing, investigation, and writing.

VOCABULARY

1st-3rd: *bark, leaves/needles, sap, trunk, habitat*

4th-5th: *bark, leaves/needles, seeds/cones, sap, habitat, photosynthesis*

6th-8th: *bark, leaves/needles, chlorophyll, sap, seeds/cones, cambium, habitat, photosynthesis, interdependence*

MATERIALS

½ as many blindfolds as there are students total; pencils; drawing paper; laminated adopt-a-tree worksheets; handlenses and/or bugboxes; drawing boards; field guides (older students); colored pencils or crayons (optional for small groups)

BACKGROUND

At Turnbull National Wildlife Refuge there is one species of evergreen conifer, the ponderosa pine. There are several species of deciduous trees including water birch, alder, aspen, elderberry, red-osier dogwood, black hawthorn, willow, and chokecherry. Each one of these trees has similar anatomy that helps it carry out the processes of life. The leaves/needles are the tree's food factories. Using energy from the sun, which they capture with the green pigment chlorophyll, leaves and needles convert carbon dioxide and water into sugar and oxygen. Changing the sun's light energy into sugars for the plant to use is called photosynthesis. Photosynthesis makes all other life possible.

The trunk provides support for the branches, which support the tree's leaves. The trunk and branches contain the tree's plumbing – the tubes that transport water and nutrients from the roots to the leaves, and sugar from the leaves to the rest of the tree. They also contain the growing layer of wood (cambium) that puts rings on the trunk, branches and roots each year. Bark, is like human skin, it covers the trunk and branches and protects them from injury caused by insects, other animals, disease, fire, etc. If this first layer of defense is breached, then sap, which acts like human blood, comes to wash out the wound and cover it with a “scab”. The roots of the tree anchor the tree and hold soil in place. They absorb water and pick up minerals from the soil. This is different from photosynthesis. The minerals or nutrients trees and plants get from the soil are similar to what we get from taking a vitamin pill – essentials for normal functioning, but no energy (i.e.: fats, proteins, sugars, carbohydrates).

Different species of trees need different habitats, and trees fill important roles in many habitats. Usually, the presence of trees tells us we are in a forest habitat. If this forest is near a river bank or wetland edge it is called riparian habitat. The moist soils at the edges of wetlands are ideal for many of the deciduous tree species at Turnbull NWR. Individual trees are “microhabitats”, where other species such as lichens, mycorrhizae, and spiders spend their entire lives. Many species depend on trees for food, shelter, shade and support. In turn, trees need many other organisms to spread and plant their seeds, shade them in their youth, keep them healthy and pollinate their flowers. These relationships between species are all dependent upon one another to keep an entire habitat running properly. This is interdependence.

PROCEDURE

1. When choosing the place to “Adopt-A-Tree”, make sure that the undergrowth isn't so thick that no one will be able to wade through it to get to their tree. Also take note of how many students there will be and how many adoptable trees actually exist in the area. Lead the children to the chosen forest or riparian area. Talk about what habitat we are in and what animals and plants need this place (in an age-appropriate fashion). Do the trees here tell us what kind of habitat this is?
2. Now tell the children that this is their chance to adopt a tree at Turnbull. It is very crucial that you make this sound very special. Make it sound like the coolest thing they will get to do all year! This will be their tree forever. They can name their tree. They can come and visit it as they grow old together. They can introduce their tree to friends and family. This day is the beginning of a very beautiful friendship. The more you play it up, the better. This may be the urban child's first intimate encounter with a large, living being.
3. Depending on the age of the group, discuss together how trees and people are the same and how we are different. Trees need food, water, shelter, space, air and sunshine. But how do they meet these needs? This is the time to use and define new vocabulary.

4. Once everyone is a little more clear on the lives of trees, partner the students up in a manner that the teacher deems appropriate. Tell partners that one of them will become the Guide and the other will be the Seeker. Both jobs are important and fun. The Guide's job is to choose which tree he and his partner will adopt and get to know better without letting his partner know which tree it is. The Seeker's job is to be led blindfolded to the tree by the Guide and gather as much information as she can about their tree without looking at it.
5. To heighten the experience, time allowing, pass a mystery box around and have children guess what is inside. Have them keep their guesses to themselves until everyone has felt the contents. Then take some of the guesses from the group before revealing what it was. This puts the children in a receptive frame of mind, which makes this activity more enjoyable for them.
6. To the Guide: You have the responsibility of choosing the tree; choose wisely. You are also responsible for the safety of the Seeker. This means you are their eyes and you choose their path. You have to make sure they get from the startpoint to the tree and back in one piece. Hold their shoulders, point them in the right direction, and tell them where to step and when terrain is rough.
7. To the Seeker: You need to use your senses of direction, touch, hearing and smell to gather enough information about your tree so that you can relocate it once your blindfold is removed. Take note of which way the wind is blowing, how many steps it takes to get to your tree, the terrain under your feet, how big around your tree is, how rough or smooth the bark is, what your tree smells like, does it have more than one trunk, does it have any branches down low that you can feel, what is on the ground around it, is it making any noises, and what the green parts of the tree feel and smell like.
8. Before the partners set out, encourage them to be silent as they explore. When they are done they must return to the startpoint and quietly wait for everyone else to return.
9. As partners begin to trickle back in, remind the Guides that it will be tempting to tell the Seekers which tree is theirs. However, they must be patient and let the Seeker figure it out. If the Seeker cannot seem to guess right, the Guide may give them hints or tell them if they are hot or cold to lead them in the right direction. Before they head out together unblindfolded to locate their tree, equip each set of partners with one laminated worksheet, two pieces of drawing paper, two pencils, two drawing boards, one hand lens per pair or one each (depending on numbers), and one tree field guide per pair (5th-8th). Explain to the group that they need to draw their tree's portrait to the best of their ability and in the finest detail because this will capture the way the tree looks right now. This record can be compared to how it has changed the next time you come to visit it. Then they need to use their

handlenses to examine the tree and answer the questions on the backside of their tree's portrait.

10. As the pairs fan out and begin getting to know their trees better, roam around and keep them on task. Asking questions keeps them thinking. Why does your tree have two trunks? Who do you suppose its parents were? Try and mimic your tree's pose. What does your tree do in the winter?
11. As time runs short, collect your equipment and have everyone regroup back at the startpoint. Ask them about their trees. Did they name them? Why is their tree special? Will they come back to visit? How old do they think their tree is? You will be surprised at the profound effect this activity has on some of the "more active" children. It is a contemplative activity, but very engaging. It gives children a sense of kinship and belonging to this place. It is a good activity to stop and do towards the end of a hike. The last leg of your hike can be walked quietly as they view the trees in a whole new way.

WRAP UP

Remind the students at the end of the day about their trees. They are welcome to come and visit anytime during the year and introduce whomever they wish to their tree. For a child to know that there is a tree in this world that they can call their very own is a powerful source of hope.

"It's amazing that trees can turn gravel and bitter salts into these soft-lipped lobes, as if I were to bite down on a granite slab and start to swell, bud, and flower. Trees seem to do their feats effortlessly. Every year a given tree creates from scratch 99 percent of its living parts. Water lifting in tree trunks can climb 150 feet per hour in full summer and a tree can heave a ton of water every day. A big elm in a single season might make as many as six million leaves, each wholly intricate; without budging one inch, a tree stands there, accumulating dead wood, mutely rigid as an obelisk, but secretly it seethes, splits, sucks and stretches."

~Annie Dillard,
Pilgrim at Tinker Creek

ADOPT-A-TREE

Grades 1st-3rd

Learn all you can about your tree by answering these questions...

Sit with your tree.

Is your tree alive?

Is your tree asleep or awake? (Think about what season it is now...)

Does your tree make any sounds? Describe them...

What does your tree's bark feel like? What does it smell like?

How do the leaves or needles look, feel and smell?

What is your tree's name?

What living things come to visit or live in your tree? Do other living beings need your tree to survive?

How old do you think your tree is? How long do you think it will live?

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How do the leaves or needles look, feel and smell?

What is your tree's name?

How old do you think your tree is? How long do you think it will live?

What living things come to visit or live in your tree? Do other living beings need your tree to survive?

ADOPT-A-TREE

Grades 4th-5th

Learn all you can about your tree by answering these questions...

Sit with your tree.

How do the needles/leaves, cones/seeds and bark look, feel, and smell?

Is your tree alive? Is your tree asleep or awake? How do you know?

Does your tree make any sounds?

Why did your tree grow where it did?

How old is your tree? How long will it live?

How does the tree take care of itself? What does it need to survive?

Describe your tree. What does it look like when you are standing away from it?
How does it look when you sit underneath it? How about when you lie on your back?

What are some signs that tell you about the other living beings that depend on your tree to survive?

What is your tree's name?

ADOPT-A-TREE

Grades 6th-8th

Learn all you can about your tree by answering these questions...

Sit with your tree. What habitat are you in now?

What species is your tree?

How do the needles/leaves, cones/seeds and bark look, feel, and smell?

Is your tree alive? Is your tree asleep or awake? How do you know?

Does your tree make any sounds? Describe them...

Why did your tree grow where it did? Is it in sun or shade?

How old is your tree? How long will it live?

How does the tree take care of itself? What does it need to survive?

Describe your tree. What does it look like when you are standing away from it? How does it look when you sit underneath it? How about when you lie on your back?

What are some signs that tell you about the other living beings that depend on your tree to survive?

Name three relationships that you suppose your tree is involved in with local plants, animals or fungi.

What is your tree's name?

Adopt-A-Tree

Enrichment Ideas for Teachers

EXTENSIONS

- Visit the students' trees in different seasons and keep a tree journal describing all the events and changes in the tree's year. Younger students could create a wall calendar with quarterly drawings or photos showing their tree in annual seasonal splendor.
- Take forestry measurements on the trees (7th-8th). Contact the local Forest Service Ranger District or timber company to find out about having a forester help your class with expertise and equipment.
- Raise money to buy a class tree. Hold a tree planting ceremony.
- Take pictures of students with their trees and use these as gifts for parents or accompaniments to drawings, poems, stories, pressed leaves, rubbings or reports surrounding the tree.
- Have students write essays about life from their tree's perspective. This could be an essay on the tree's natural history, local cultural history, local geology and climate, or interrelationships with plants, animals and people (6th-8th).
- Write interviews with questions you would like to ask your tree. Have partners role-play the part of their tree as they interview each other.
- Conduct a Nature Mapping session in the vicinity of the student's trees. For information on Nature Mapping go to - <http://www.fish.washington.edu/naturemapping>
- Create posters in teams that describe and depict tree anatomy and function. Study tree cookies (cross-sections) and count growth rings to see how old the tree was. Identify heartwood, sapwood, cambium, and bark.
- Have students germinate seeds from their tree. If you are lucky, they will grow into seedlings. Have the students care for their tree's "babies" and plant them in a suitable location. Consult a local native plant nursery for help.