



Daisy Outdoor Challenge #2

Opposite Versus Alternate Branching Trees

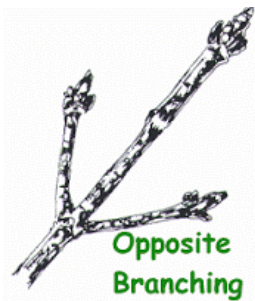
Materials: Pictures of trees or real trees

Objective: Girls will be able to identify the difference between an alternate branching tree and an opposite branching tree.

Directions:

Activity One (Opposite and Alternate):

1. Explain that different trees grow in different ways. One way to look at trees is the way that the leaves and branches grow compared to each other.
2. Talk about opposite branching trees. Show the simple example:



Note how the new branches are coming from the base exactly opposite each other.

3. Now have the girls represent an opposite branching tree. Have them stand up and spread their arms up, at an angle. Tell them that their bodies represent an opposite branching tree, with their arms being the branches.
4. Next, talk about alternate branching trees. Show the simple example:



Note how the new branches are not straight across from each other anymore, they are staggered.

- 5. Now have the girls represent an alternate branching tree. Have them stand up and stand on one leg, the opposite leg should be spread out at an angle, and the arm on the leg they are standing on should be out and down at an angle as well. Tell them that now their bodies represent an alternate branching tree, with the one arm and the leg being the branches.**

Activity Two (Tree Walk):

- 1. Now it is time to take a short walk. If possible, go outside and walk around real trees, if not, use pictures of trees from the internet. (In Pennsylvania, the Maple, Ash, Dogwood, and Horse Chestnut Trees are all opposite branching.)**
- 2. Walk to each tree and when the group gets there, tell them to look at the tree and decide if it is alternate or opposite branching.**
- 3. When they decide what it is, they should use their bodies to show which kind of tree it is, using what they learned in activity one.**
- 4. Talk as a group to decide if they are correct or not.**



Brownie Outdoor Challenge #2

Parts of the Tree

Materials: none

Objective: Girls will be able to identify basic parts of a tree.

Directions:

Activity (Human Tree):

1. Have the girls standing or sitting around the perimeter of the room and explain that together you will be making a human tree.
2. Start by picking out one girl that thinks she is strong. Have her stand in the center of the room. Explain that she is the Heartwood. She is the strong center of the tree, she keeps the tree upright and is the oldest part of the tree. Have her pound her chest and say “strong.”
 - a. Each part of the tree will grow on the last part, so each time you add a new part, have everyone do their motion and say their words.
3. Next pick two to three girls to be the roots. These need to be girls that are not afraid to lay on the ground. Have their feet inwards, against the heartwood, and their hands and fingers spread out. Explain that they are the roots and they gather the water from the ground, and kind of slurp it up. Have these girls wiggle their fingers and say “slurp.”
4. Next pick two to three girls to make a circle around the heartwood, being careful not to step on the roots. Have them face inwards and hold hands. Explain that they represent the xylem. They start at the roots and bring water up to the branches. Have the girls together start crouching down and stand up together and say “up.”
5. Now pick three to four girls to make a circle around the xylem. These girls should face outwards and hold hands. Explain that they are representing the phloem. The phloem brings the food down throughout the tree. Have the girls start in a standing position and together crouch down, while saying the word “down.”
 - a. Note: You can remember that xylem zips up and phloem flows down.

- 6. Lastly, use all of the remaining girls to make a circle around the entire tree, facing outwards. Have the girls hold hands and stand as a strong outer ring. Explain that they represent the bark. The bark is strong and protects from insects, fungus, and animals. Have the girls bark like a dog, because they are being protective.**
- 7. Have all the girls do their actions at the same time. Then you as the instructor, act like you are trying to penetrate the tree, and have the bark protect from you getting in.**

Junior Outdoor Challenge #2

Insects

Materials: Song lyrics, access to bugs (some insects, some not) – either real or pictures

Objective: Girls will be able to successfully identify the parts of an insect.

Directions:

Activity Part One (Parts of an Insect):

1. Ask the girls if they know what an insect is.
2. Explain that the word bug is used to describe many creepy crawlers, but an insect is a specific grouping of bugs.
3. Explain that insects have three main parts of their body – the head, thorax, and abdomen.
4. A distinguishing part of an insect is that they only have six legs. Ask if spiders are insects? (No, because they have eight legs.)
5. Explain that they also have eyes that are compound and much different than human eyes. It allows them to see in pretty much any direction at the same time.
6. Insects have antennae, which are feelers or sensors. And they have spiracles, which are along their body and what they get oxygen from.
7. Now teach the song “Head, Thorax, Abdomen.” Take a body part out each time and hum that part, until all body parts are out. The final time, sing it just like the first time.

Activity Part Two (Identifying Insects):

1. Have girls search for insects. Explain that they need to be really gentle, if they pick up a log or rock, they should gently set it back down. If they pick up an insect, they should gently place it back in its habitat, not drop it on the ground.
2. As they find different bugs, talk about whether it is an insect or not, using the know body parts of an insect.

(If unable to find insects in nature, use pictures off the internet, and mix in some that are insects and some that are not.)

Head, Thorax, Abdomen

(To the Tune of Head, Shoulders, Knees and Toes)

Written by Melany Gronski, adapted from The Discovery Center Curriculum

Head, thorax, abdomen, SIX LEGS!

Head, thorax, abdomen, SIX LEGS!

Eyes, antennae, mouth, and spiracles

Head, thorax, abdomen, SIX LEGS!

Cadette Outdoor Challenge #2

Tree Identification

Materials: Access to trees, or pictures of trees – specifically Red Maple, Sugar Maple, Red Oak, White Oak, White Pine, and Red Pine.

Objective: Girls will be able to identify at least three types of trees.

Directions:

Activity (Tree Basics):

1. Talk about the basic identifiers of a tree. Ask the girls what parts of a tree are easy to see. Get the answers of leaves, branches, and bark.
2. Talk about the shape of the leaves and how they differ from tree to tree.
 - a. Show a picture of a red versus sugar maple. Talk about how a red maple has coarse teeth versus a sugar maple has large teeth.
 - b. Show a picture of a red versus white oak. Talk about how the red oak has bristle tipped lobes, while the white oak has round lobes.
 - c. Show a white versus red pine. Talk about how a white pine has groupings of five needles, while the red has groupings of two.
3. Now take a short walk. Try to find each of the six trees.

Note: If unable to take a walk to find these trees, print pictures of trees from the internet, use these six types, plus others, to test the Cadette's knowledge.



Red Maple



Sugar Maple



Red Oak



White Oak



White Pine



Red Pine

Senior Outdoor Challenge #2

Beak Identification

(Adapted from "Bird Beak Experiment" from Blessed Beyond a Doubt.)

Materials: straw, chopsticks, tweezers, scissors, pliers, juice, marshmallows, gummies, sugar, rice, pistachios, marker (to color a few grains of rice), beak pictures, binoculars (optional)

Objective: Girls will be able to identify how different bird's beaks work.

Directions:

Activity Part One (Experiment How Beaks Work):

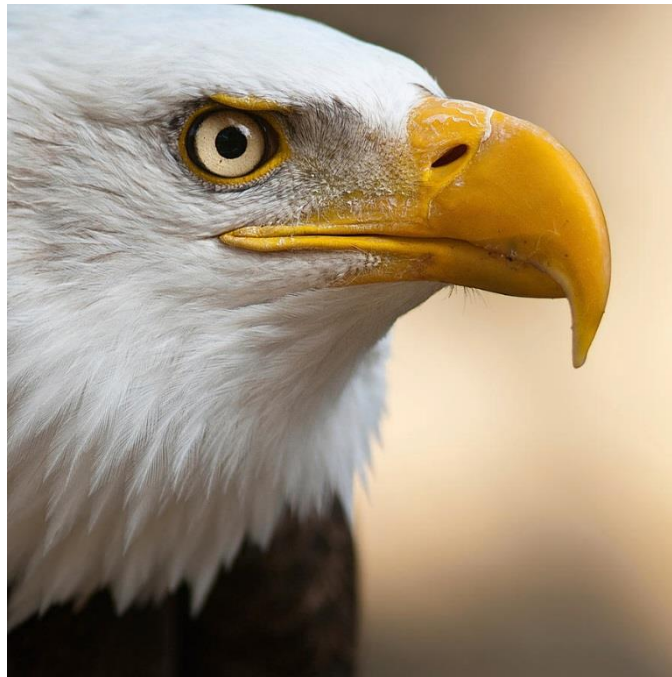
1. Have the girls individually or in partners use the tools as beaks and explore how they work with each food.
 - a. Beaks are represented by the straw, chopsticks, tweezers, scissors, and pliers.
 - b. Food includes juice, marshmallows, gummies buried in sugar, rice with a few colored rice throughout, and pistachios.
2. Discuss which tools work best with which foods (each tool should match one food).
3. Show pictures of the following bird's beaks - hummingbird, eagle, robin, woodpecker, and cardinal.
4. Have the girls guess which beak is like each tool.
5. Reveal:
 - a. Hummingbird beaks are straw like when drinking nectar.
 - b. Eagle beaks tear meat, much like the scissors do with the marshmallow.
 - c. Robin beaks are like chopsticks when they dig worms out of the dirt like the chopsticks dug gummies out of the sugar.
 - d. Woodpecker beaks are like the tweezers as they retrieve insects from dead trees, like the tweezers grabbed the colored rice.
 - e. Cardinal beaks are like the pliers when they crack seeds like the pliers cracked the pistachios.

Activity Part Two (Bird Walk):

- 1. Now have the girls take a short walk. As they walk, have them look for the distinct types of beaks on the birds that they see. Use binoculars if available.**



Robin



Eagle



Woodpecker



Hummingbird



Cardinal

Ambassador Outdoor Challenge #2

Animal Track Identification

Materials: animal and track guide, matching game cards

Objective: Girls will be able to identify common animal tracks.

Directions:

Activity One (Guess and Check):

1. Show the girls pictures of ten common animals.
2. Next show the girls pictures of the animal tracks of each of the animals, without identifying which animal belongs to which track.
3. Have the girls as a group decide which tracks belong to which animals.
4. Check their work! Correct any that are incorrect.


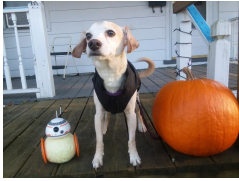






























Activity Two (Memory Matching):

1. Either split the girls into groups as teams or split the girls into pairs. You will need either one matching game if playing as a large group, or enough for each pair if playing head to head matches.
2. Mix the matching game cards and place face down on the playing surface.
3. Have the first girl or team turn two cards over. If one is a picture of an animal and the second is the animal's tracks, that team keeps the cards and takes another turn. If they are not a match, they turn the cards back over and the next girl or team turns two cards over. Note that each time cards are turned over, all players should be able to see the cards.
4. Play continues until all cards have been matched.
5. The team or girl with the most cards wins!

Activity Three (Hike and Seek):

1. Take the girls on a short walk or hike.
2. While walking, take the time to really look. Can they find any tracks? Can they identify the tracks?

Animal and Track Guide

Matching Game Cards



