

CLOSE ENCOUNTERS WITH THE NATURAL WORLD

A

DISCOVER

THE FOREST

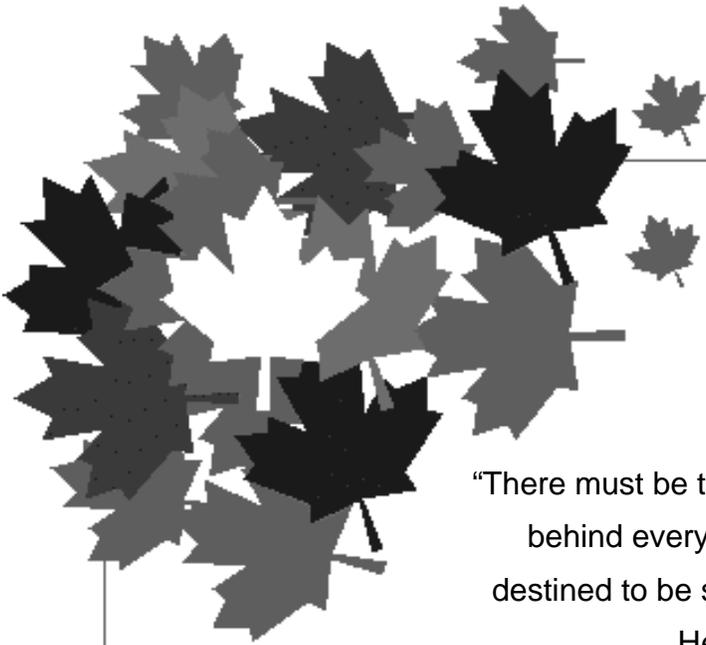
HANDS-ON GUIDE

FOR TEACHERS

March, 1998

City of Edmonds Beach Ranger Program
Washington Native Plant Society





“There must be the force of love
behind every effort
destined to be successful.”

Henry David Thoreau

This booklet is dedicated to the many plants and animals
inhabiting our local forests, and to the children
who inspire us to teach.

**CLOSE ENCOUNTERS WITH THE NATURAL WORLD: A DISCOVER THE
FOREST HANSS-ON GUIDE FOR TEACHERS**

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Acknowledgments

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And to my friends Gena and Holly for sharing many forest paths of discovery with me.

Teresa Dix

Interpretive Specialist

City of Edmonds Beach Ranger Program



Our Purpose

Warning! These Close Encounters with the Natural World are fun and uplifting. Students using these experience-based, sensory focused, imaginative and playful-learning exercises may become life-long explorers of fields and forests. Students who experience close encounters with nature frequently develop an infectious desire to ask questions, which often leads to an incurable sense of awareness, understanding, appreciation and an active caring for the plants and animals inhabiting local forests.

Note! Use all materials with care, enthusiasm, and respect for the environment. Any positive outcomes resulting from the use of Close Encounters materials, are the sole responsibility of teachers and students who do the work.

Outcomes may include:

- ↳ . Greater caring for one another and the environment.
- ↳ .Increased self-esteem and positive attitudes
- ↳ .Increased interpersonal and small group skills
- ↳ .Enhanced decision making ability
- ↳ .A healthier, happier life



Part 1

AWARENESS THROUGH FINE-TUNING THE SENSES

“ The mind alone cannot make the connection. A true understanding of our interdependence with wild things can come only from direct experience.”

Tom Brown

A true story.

One day a third grade teacher asked her students to write down the seven wonders of the world. When the task was finished the teacher told the children they could go outside to recess. Within a few minutes everyone had finished the assignment and had gone to play, except for Maggie. The teacher watched her as she wrote, erased and rewrote on her paper. Finally, the teacher asked the girl if she was having difficulty remembering the seven wonders of the world. Maggie replied, “Oh no, there are so many wonders, it’s hard for me to choose just seven. Eventually, Maggie did turn in her paper. Her list read like this, “The seven wonders of the world are to hear, to taste, to smell, to see, to touch, to know and to love.”

In this section, Awareness Through Fine Tuning the Senses, students will have the opportunity to go beyond the traditional methods of acquiring information about the natural world. By using their full range of senses when exploring forest environments, children not only expand their awareness and understanding of these special places, they also begin to make the personal connections with plants and animals, which in turn, may influence the decisions children make throughout their lives about how they care for their local forests.

Remember, before each activity, help children to slow down and relax. Sometimes, a good way to do this is to ask children to close their eyes and imagine a beautiful place. Maybe their favorite natural place is a lake, a forest, or a quiet park.

AWARENESS THROUGH LISTENING



Activity 1. Take students outdoors to a nearby park or some natural area on the school campus. Encourage children to sit quietly in a place they choose away from other classmates. Ask them to **listen** to all the sounds they hear. Tell them to tilt their heads in different angles, or place their heads near the ground or a tree. Their task is just to listen.

After students have had enough time to gather in the sounds around them, give students paper and crayons and invite them to draw the mood that one or more of the sounds may have evoked. Did the sound of a bird singing evoke happy feelings? Draw happy. Did the sound of the wind in the trees evoke a feeling of mystery? Draw what that feels like. Encourage students to draw swirls, wavy lines, or make shadings of color on the paper. This is not about being a picture maker, it is about expressing what we feel based on what we hear. Remind students that this is a silent personal activity. Whatever they express is theirs and is valued. Supplying students with journal-size notebooks for keeping an account of their experiences is helpful, especially if you plan to integrate this material into a program you have planned on forests.

Activity 2. Students who are encouraged to **LISTEN** to each other also bond with each other. In a group circle, ask students if they would be willing to share their listening experience. Teachers can keep track of the things shared in class on a flip chart, which can serve as the class journal. At first, students may not be comfortable with the idea of quiet and listening. This is understandable since we live in a culture that is committed to motion and addicted to noise. However, with practice children can be moved from their habitual need for chatter and action, to the place of feeling happy and comfortable when given the opportunity to be still and listen. On a daily basis, teachers may offer students some time to exercise their listening skills, and enter the things they hear in their journals.

Activity 3. Before playing this game called **Deer Ears**, invite students into a discussion about the abilities other animals have to hear sound. For example, whales send and receive messages over long distances, 50 to 80 miles in some instances. Bats are another example. They can find their way around the night sky on the echoes of their own “voices”. Allow children to share what they understand about the fantastic hearing abilities of rabbits, deer and bears. Direct students’ attention to the shapes and sizes of ears of different animals. How do these characteristics help or hinder hearing

ability? Now have fun playing Deer Ears. (This game is from the Oct/Nov.1996 issue of Clearing)

Ask a student to volunteer to be the first deer. This student will be blindfolded (Make sure their ears are not covered, suggest they cup their ears to here better) and pretends to be a deer grazing. Place another blindfold or piece of cloth in the students back pocket to represent the deer's tail. The rest of the students are predators--wolves, cougars and people who feed on deer.

The predators then create a circle about 40 feet in circumference around the deer. When the teacher gives the signal, the predators try to "eat" the deer by snatching its tail. If the deer hears something, she points in the direction of the sound and yells "starve!" When the deer yells starve all the predators must stop in their tracks. If the deer is within a few degrees of the predator, he or she is out of the game. (They can sit or move outside the circle). When a predator is successful and snatches the deer tail, he or she become the next deer.

After playing the game, discuss what it was like to be the deer. What was difficult? What made noticing predators easier? What made some deer more successful than others? Why did some deer live longer than others?



AWARENESS THROUGH TOUCH

"Touching is wonder. We think of it as reaching out, to know, to grow, to explore, to love, to believe. But there is also reaching within...an inside touching that comes first." From Please Touch by Edwin M. McMahon

Touch is actually several senses. Special nerve endings in your skin, (which happens to be the largest organ of the human body) detect pressure, pain, heat and cold. You can feel where your arms and legs are, and your sense of balance keeps you upright. All animals have this sense of touch whether they have skin, feathers or fur. Plants do not have sense organs like animals do, but they can respond to the world around them. All plants detect light and gravity, and other plants sense nearby objects. Some plants, like the pea plant, have sensitive tendrils and can "feel" things that they touch. These plants respond to touch by coiling around whatever they touch as a means of support. Another plant, the *Mimosa pudica*, has leaves that go limp when they are touched.

Activity 1. If you have a large group of 30 students, divide the group into smaller groups of 10. This activity works well if you are fortunate enough to have an adult volunteer in the classroom. Blindfold or have students close their eyes. Give the students in each group a stone to hold. Tell students to **feel the rock**. To explore all the bumps, cracks or smooth places on the rock. Give students ample time to “get to know” their rock. When time is up, take the rocks from each student and place them on a table. Two at a time, guide students to the table and ask them to find their rock by touch rather than by sight.. You may be surprised at how well students do at this game.

Activity 2. Divide groups as you did for the first **touching activity**. On each table, (3 tables for 30 students) place 5 different species of leaves per table. Label each sample with its common name. Now invite each group of ten students to go to one table and examine the 5 samples. Tell them to touch the leaves, to trace the outside of the leaves with their hands, to brush the leaves against their face gently, to get “to know” the leaves in every way they can. When enough time has been given for students to know each leaf, blindfold each student and instruct them to find the leaf that is shaped for example like an oval, or feels like a bottle brush, or is very furry underneath. Once the student believes he or she has found the leaf you gave a clue for, ask them if they can remember the name of the plant they learned by touch.

Activity 3. Place a mix of **cones, seeds, rocks**, small twigs and leaves on a table. Before hand, give each student a sample of one of the things he or she might find on the table. Take turns blindfolding players; they must feel all of the objects on the table and find the one that matches the one in his or her hand.



AWARENESS THROUGH TASTE AND SMELL

“To breath deep the sound, the smell, the feel of water. To be inside never again the same.” From The Zen Way

Animals use their sense of taste and smell to detect chemicals. When you taste something, groups of cells on your tongue (taste buds), detect chemicals dissolved in your saliva. When you smell something, cells detect chemicals dissolved in the lining of your nose. Living in the city can take a big toll on our sense of smell and taste, since pollution has a way of blunting those senses. However, with practice we can rehabilitate these senses which help us learn about the world we live in.

Activity 1. Take your students outdoors to a nearby park or wooded area on the school campus where they can smell the various aromas such as: the perfume of flowers, evergreen scents, and the musty scents of decomposing leaves. If you can't go to a park, bring the outdoors into the classroom. **Create an aroma table.** Use lemons, oranges, apples, peanuts, bark from a tree, soil, old books, and a baseball glove. Have students work in teams of 2. One student is blindfolded, the other student guides his or her teammate along the table. As students "blindly" try out the various scents, ask them if the scent reminds them of a familiar experience....a summer vacation, Christmas, the ballpark. Have them write or share something about the scent. The short description can be written as, "This scent reminds me of the time when...." (Health food stores have a wonderful variety of bulk herbs and spices for sale, which can be used for this exercise.)

Activity 2. One thing that most people have in common is they like to eat. Another thing many of us seem to have in common is we don't really slow down enough to appreciate the **taste of what we are eating.** This exercise is about slowing down and tasting. Teachers can bring a bunch of grapes (or other fresh snack foods) to school, or students can use a small snack item from their lunches for this activity. Ask students to close their eyes. Place a grape in each student's hand. Remind them that this is an exercise about tasting and slowing down. Ask them to put the grape in their mouth, but not to chew it; just to feel the grape first in their mouth, to explore the taste of the grape. Tell them to chew the grape slowly focusing on the taste and texture in their mouths. Children can do this with any snack. Help students to make the connection between tasting and enjoying food more when they slow down. Remember to use the personal journals for recording experiences either with pictures



or words.

AWARENESS THROUGH SEEING

"There are lots of things to see, unwrapped gifts and free surprises. The world is fairly studded and strewn with pennies cast broadside from a generous hand." Annie Dillard

Have you ever noticed how much more you see when you go to a new place for the first time? Chances are, you look around in every direction, and you look at things from many angles. Looking at the world as if you've never seen it before is a real art.

These activities are all about giving students the opportunity to practice the art of seeing more in nature.

Activity 1. You'll need clam or mussel shells for this game. Ask any clerk in the fish section of the supermarket for these items, they are usually happy to "shell out" a dozen or two for the purpose of education. (pine or cedar cones make a fine substitute for the shells if needed) Place all of the **clam shells on a table**. Ask students to choose one shell only. Instruct the students to examine the shell very closely. Asking them to draw the shell as they see it may help them to pay closer attention to the details. After students have spent adequate time examining the shells, ask them to place their shells in a pile on the table. (If the group size is 30, make two piles of shells.) When the shells are placed in the pile, ask the students to come one by one or in small groups, to the table and find the shell they previously examined.

Activity 2. Ten objects under a scarf is a fun way for students to test out their ability to observe several things at one time and to remember what they saw. Place on a table 10 items and cover them with a large scarf. Ask students to form two lines. Two by two, students come to the table. The scarf is lifted off of the objects for 5 or more seconds while the students take a quick look at the items. Put the scarf over the items again and instruct the two observers to return to their desk and privately write down the names (or for younger students draw pictures) of the objects they saw. Allow each student to have a turn before you reveal the names of the items hidden under the scarf. Each day, new objects can be hidden and students can try out new strategies for seeing and remembering more things than they could the day before.

Activity 3. Take the students outdoors to a grassy or forested area. Have students work in teams of two. Give each team a piece of string three feet in length, which can be tied at the ends to form a circle. Have the students place the string circle on the ground. Ask students to stand and look into the circle. Ask them to describe what they observe. Then have students kneel down and repeat the observing-describing exercise. Finally, have students lie flat on the ground, describing and comparing what they see in the circle from this position. If a student sees something in the circle that really captures his or her attention, encourage him or her to watch the worm or insect for as long as they like. Ask children to share their experiences of the "larger picture" versus "**smaller picture**" perception of their string circle. What have they learned about the different ways of seeing?



AWARENESS THROUGH A SENSE OF WONDER AND MORE

In David Orr’s words, “If literacy is driven by knowledge, ecological literacy is driven by a sense of wonder, the sheer delight in being alive in a beautiful, mysterious, bountiful world.” Rachel Carson understood that this sense of wonder begins in childhood, and in order “To keep alive (this) inborn sense of wonder,” Carson tells us, “ a child needs the companionship of at least one adult who can share it, rediscovering with (the child) the joy, excitement and mystery of the world we live in.”

In this activity, review with students what they have learned about their senses. Explain to them that there are other senses they have not explored yet. Ask students if they can name any of these. The teacher might begin by giving a few of the following examples.

A sense of self	sense of time	sense of peace
sense of fear	sense of hope	sense of power
sense of joy	sense of change	sense of growth
sense of humor	sense of pleasure	sense of trust
sense of friendship	sense of community	sense of appreciation
sense of belonging	sense of respect	sense of pride

Now play the game, **Alphabet Senses**. Ask students if they can give “sense” examples using in order, letters of the alphabet. For example: A, a sense of awareness. B, a sense of beauty, C, a sense of change. D, a sense of direction..... For each example a student gives, relate that sense to the natural environment. A sense of power may be related to severe winds that blow down trees in a forest. A sense of relaxation may be related to sitting near a gently flowing stream.



Part 2

UNDERSTANDING PLANTS

The ability to identify separate species of plants is the first step to an appreciation of the concepts of habitats and communities. For this reason, this section will introduce children to some basics of botany. This section will also include plant names as they relate to the uses of plants, to the textures and appearances of plants, and to how sometimes a plants' name reveals ideas from another culture different from our own. Continue to encourage children to use all their senses, especially their sense of play as they will naturally absorb the information.

Activity 1. A fun way to begin teaching the **basics of botany** is to give each child a large piece of butcher paper. Pair students up with another classmate. Have students take turns drawing the full body silhouettes of their partners. (Don't tell students before hand what the final goal is, keep some element of surprise). Once the silhouettes have been drawn, ask each student to turn their body outlines into some kind of plant. Using the basic framework of the human body as a springboard for comparisons, students can share the similarities and differences they notice between their bodies and the basic parts of a plant.

Terms such as; photosynthesis, seed, root, stem, leaf, flower, fruit, tree, shrub, herb and the basic functions of each of these parts should be discussed. (See glossary of terms on page .) After the basic terms have been defined, divide students into small groups and have them explore the possibilities of the following statement: **I am more like a tree than not.** The outline below should help students stay focused in their thinking process.

ALIKE		NOT ALIKE	
The Tree	Me	The Tree	Me
It's alive	I'm alive	Cannot move around	I can move
It grows	I grow	Makes its' own food	I buy mine
Needs water	Need water		
Can be injured	Can be injured		

Activity 2. Have students bring in samples of leaves from home. In the classroom invite students to examine the variety of leaves classmates have gathered. Help them to understand that **no two leaves are identical** (physically or chemically), just as fingerprints vary, so do leaves. Students can take a closer look at leaves by using hand

lenses to study them. Tracings or leaf rubbings are other ways to help students grasp the beauty and complexity of leaf design. Ask in which ways are certain leaves similar and/or how are they different? For younger children, use leaves for a matching game. Sort by color, shape or size.

Activity 3. Leafing Out! Have all the students stand in a circle holding only one of the leaves they brought from home. The teacher stands in the center of the circle and calls out, “Stay in the circle if you have a leaf that...” has veins...has green on it... has an unusual smell... has smooth edges... has two colors...is bigger than your ear... is fuzzy on the bottom...is like wax paper on the top... “ Continue the game until only one student remains. Play the game again after students have exchanged leaves with a friend, or have chosen another leaf they brought from home. (The list of leaf descriptions the teacher calls out can be made from the observations children made about their leaves in the previous activity.)

Activity 4. Plant Exchange. Take students outdoors to a place where there is a variety of different plants. Give each child an index card with instructions to find one plant and examine it very carefully. On the index card, ask students to list (for younger students draw) as many of the characteristics about the plant as they can. When students have completed their list, ask them to exchange their index card with another student. Based on the information given on the index card students try to find the plant their classmate described on the card.

Activity 5. Appreciating Plant Names. Bring in a variety of plants and plant parts, such as seeds, leaves, and cones. Have students name the plants based on how the plant/plant part looks, feels, or smells. Explain to the children that what they’ve been doing in these exercises is similar to what botanists do when they study and name plants. For example, why do you think a dandelion is called a dandelion? Look at the leaves very closely. The French named the plant “Dents de Lion,” which means teeth of the lion. The Chinese word used to describe the dandelion is, “Nail of the earth.” If you examine the length and shape of the root you can understand why the Chinese gave this particular name to this plant. Sometimes names given to plants refer to the kinds of habitats they grow in, or other plants they may have associations with. Other plant names tell us something about how they were used by a particular group of people. Have students investigate the names of plants, which are native to the State of Washington.

Defining a native plant: Plants that occur naturally in an ecosystem and are not a result of human activity. Native plants in Washington State were those plants here prior to Euro-American exploration and settlement about 300 years ago. (See attached list of Native Plants from, Celebrating Wildflowers by Wendy Scherrer and Tracie Johannessen)

Activity 6. Native Plant Scramble

All players receive a card with the name and picture of a native plant on it. (Use printed cards from p.) The group sits in a large circle, which represents a forest. One player is chosen to be the “caller,” he or she goes to the center of the circle. The “caller” yells out the name of two native plants such as, “Cedar tree, Alder tree.” The players holding the cards with these names on them must try to change places with each other, while the “caller” also tries to move into one of the vacated spaces. The person who ends up with no place to sit, goes to the center of the circle, and is the next native plant “caller.” Players who were called, can share something they know about the plant/card they were holding. Periodically have players shuffle the cards in the circle by passing the card they are holding to the person on their right.



UNDERSTANDING FOREST COMMUNITIES

“Food is the burning question in animal society, and the whole structure and activities of the community are dependent upon questions of food supply.” Charles Elton

A Focus On Community

Community is a common word; most of us know what it means without looking it up in the dictionary. It implies a group of people living and working together, mutually interdependent in all sorts of obvious and subtle ways. The place where people live can be studied as a social community. In this section ecological principles related to natural communities are introduced. Each exercise is related to a principle and will help students experience a sense of identity with and a responsibility to the natural community.

Activity 1. Ask students to draw what a **community** means to them. When the drawings are finished, invite students to share their pictures and their ideas of what a community is. Out of this sharing an understanding of all the important aspects of a community should evolve, especially the idea of interdependence in the community.

Activity 2. Principle: **No living organism can live by itself.** In small groups, ask students to discuss this principle, no organism can live by itself. Can the groups think of any examples where one living thing may be totally independent from everything else. Eventually, the students should reach the conclusion that there are no examples. Every animal need is traced back to its dependence on food, on plants. Even plants cannot be used as an example of an independent life. Plants need energy from sunlight to make their sugars from carbon dioxide and water. Plants also depend upon other substances such as nitrogen, which is needed by all living things with the exception of certain bacteria and algae.

Activity 3. Principle: **Interdependence** is the underlying factor in both human and natural communities. There are important differences between social human communities and natural communities. Students should understand human communities are made up of individuals of the same species. The natural community is made up of many different species such as; plants, animals, microbes, and their associations and interactions.

Human model: Species =1 student

Population = 30 students

Community = 100 students, their parents and teachers, the persons who serve lunches, maintain the school building, etc.

Biological model: Species = 1 Red Alder tree

Population = 100 Red Alder trees

Community = Alder trees, Cedar trees, shrubs, ferns, herbs, birds, squirrels, raccoons, insects, fungi, lichen, bacteria

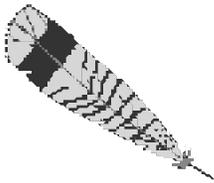
Species and populations are best defined in terms of reproduction - Who mates with whom? Communities are best understood when we define them in terms of food relationships. Who eats whom? And various other relationships such as protection, support and transportation.

1. In small groups, allow students to describe what species, population, and community are. They can draw pictures, use role-play, or write out their descriptions of each term.

2. Now play **Forest Relay** to demonstrate the concepts of community and interconnectedness. Divide students into two teams. Give each team a different color

marker or chalk for the relay. The object of this game is to fill in the spaces under each category with words or phrases that relate to local forests. Each space must be filled with a word or phrase that starts with the letter in the left column. More than one thing can be written in the spaces. After all spaces have been filled in, have students play the relay again, this time drawing lines from one object to another showing how one may be connected to the other in food relationships. The multiplicity and interdependence of relationships take on the appearance of a web as students continue drawing the connecting lines. Be sure to make the chart large enough.

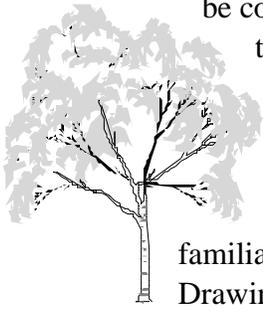
	PLANTS	ANIMALS	HUMANS	OTHER ELEMENTS
F	ferns	fox	fun place to go	feathers in a nest
O	Oregon grape	owls	offer shady spaces	oxygen from trees
R				
E				
S				
T				
extra letter class chooses				



Activity 3. Plants, Birds, and Beasts

A player is chosen to be the “caller” and stands in front of the class. The “caller” calls out the name of another classmate (Tom), and says, “Plants, Birds, and Beasts.” (Tom) must say the name of a local forest plant, bird or beast before the “caller” and the rest of the class finish counting out loud to 10. If (Tom) can name something before the class reaches 10, he becomes the next “caller.” If he can’t, a new player is chosen to be the “caller.” Each player who is called for the remainder of the game must name a plant, bird or beast that has some relationship to the plant, bird or beast named by the person who preceded them. For example, if Tom said raccoon, the following player could say Big Leaf Maple tree, since the raccoon uses the tree for its home. The following player could say moss or licorice fern, because these epiphytes

can be found growing on Big Leaf Maple trees. Remember, more than one thing may be connected to the plant, bird or beast a student names. Children should begin to see the complexity of the “web of life” as the game continues.



Activity 4. Forest similes, making new connections.

Have students show how the forest is similar to something they are familiar with and ask them to explain the connection between the two things.

Drawing a picture to accompany the simile is another fun way to express the idea. Here are several examples of similes:

A forest is like a clock. = New buds opening in spring tell us it's spring.

A forest is like an alarm. = Damage to plants can warn us of too much pollution.

A forest is like a book. = Many stories are revealed by certain aspects of the forest.

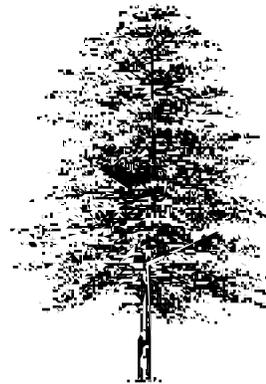
A forest is like you and me.

A forest is like a grocery store, a pharmacy.

A forest is like a big recycling center.

A forest is like a good friend.

A forest is like a big air filter.



Part 3



APPRECIATION AND STOKING THE FIRE OF IMAGINATION

For thousands of years, a person's ability to imagine was honored. In tribes, the creative healer was a necessary and appreciated person in the culture, because the healer could imagine the chants, music, stories and spirit connections that brought healing, positive values and attitudes to the community. The visionary Sioux, Black Elk, believed, "The greatest resource any tribe has, is the imagination of its people." The activities in this section will encourage children to use their imaginations in ways, which will help, build empathy and caring for one another and for the many plants and animals with whom they share this planet.

Activity 1. Can you imagine? Involves processing skills and the use of the five senses. Ask students to get into groups of 2 or 3. Choose one of the senses to be the focus of imagination. Tell your students the first sense they will play with is visual. The first student says to his or her partner... "I want you to imagine the tallest tree in the forest." The partner responds by saying, "I want you see how green and shiny the leaves are." Each player in the team proceeds to add on to the visual images until the teacher calls "Time."

The teacher directs the students to draw on an auditory sense of imagining. "I want you to hear the sound of a splashing stream." "I want you to hear the sound of a fish as it leaps out of the water." Follow the same directions for each of the examples that follow. Taste.....I want you to taste the foggy morning air.....I want you to taste.... Smell.... I want you to smell the scent of pine needles baking in the sun...I want you to smell..... Touch.....I want you to feel the bumpy bark on the alder tree....I want you to touch....

Activity 2. What is a Cedar Tree? Begin this activity by explaining to the students that they are more than just their legs, arms, eyes, brains, etc. Share with students that when a naturalist sees a tree or a bear or a flower he or she sees it in the context of all its relationships. For example, when someone asks a naturalist, "What is a Cedar Tree?" the Naturalist might say, "It is a great place for birds to hide." "It is a source of food for animals." "It is the tree with red stringy bark." "It is the tree the Native Americans called, the tree of life." Ask a naturalist what a bear is and you might hear, "A bear is a wild animal." "A bear is a mammal." "A bear is furry." "A bear loves to eat berries." "A bear has a super sense of smell."

In this activity, students sit in a circle. The teacher asks, "What is a Cedar Tree?" One by one students in the circle take turns adding on to the definition of a Cedar

Tree. Ask your students to imagine they are describing the living things to someone who has never seen a tree, bear, or flower before. Encourage students to describe the tree or bear in the context of all its relationships. Discuss these relationships after each circle round is completed.

Activity 3. In many tribes, tribal members gave names to flora and fauna, which reflected their **ecological connections**. For example; some animals are named for their choice of habitat or food. Flowers are given names for their pollinators, and plants are named for the animals they eat, or in some cases don't eat. Here is a brief lexicon of examples to get the class started. See how many of these children can create working in small groups. Remember these exercises are not about being right or wrong as much as they are about being creative and honoring the imagination of each individual.

What the great bear likes.	Huckleberries
A yellow plant's moving friend.	Ants in a skunk cabbage
What humming birds sip.	Nectar
What great flying ones dive for.	Eagle preying on salmon
The prickly plant that burns skin.	Nettles
The soil's little wiggler.	A worm
The plant's furry creeper.	A caterpillar

Activity 4. Native Plant Poetry. Have students think of their favorite native plant and write a poem about it using the "cinquain" format for poems.

Line 1. A word to name the subject.	Cedar
Line 2. Two words to describe it.	Shining green
Line 3. Three words of action about it.	Swaying, dancing, swinging
Line 4. Four-word phrase about it.	Smelling sweet in spring
Line 5. One word that names the subject.	Healer.

Activity 5. Plant Drama. Have individual students or groups of students' act out a particular dramatic role about the life of a plant. Here are some examples for role-playing.

Act out a tree that is being tagged for harvest!

Act out a shrub in a fierce windstorm.

Act out a plant that has just been watered after a long drought.

Act out a wildflower that sees a hiking boot coming toward it.

Act out a maple tree that has a robin's nest on its' branches, baby birds are hatching out.

Act out an Alder tree that has heart rot, a woodpecker has just landed on it



APPRECIATION THROUGH STORYTELLING

“Fairy tales, myths and stories provide understandings which sharpen our sights so that we can pick out and pick up the path left by the wildish natures.”

Clarrisa Pinkola Estes

Storytelling, the oldest of the arts, has always been both an entertainment and a cultural necessity. News, customs, and laws encapsulated within the bodies of stories have been passed on through the years. Kept alive through this oral tradition stories become history, and the storyteller breathes life into human cultures.

Activity 1. Ask each child to **share an outdoor adventure**. As they share, write down on a flip chart one phrase from each story. Examples; “I fell into the mud.” “The crow stole my father’s car keys.” “The trees were colored bright red.” “A bat was trapped in our house.” When the storytelling has ended, ask students to write down 3 or 4 of the phrases from various stories. Then ask students to make up a new outdoor story which must contain the phrases they copied down. This activity allows children to share and actually inhabit each other’s stories, it helps them to weave new stories out of old ones.

Activity 2. In Joseph Bruchacs’ book, Native Plant Stories, he tells many traditional stories which reveal the Native way of thinking about plants. Honored as relatives and teachers, Native Americans believed that plants were aware of humans and if we listened respectfully, plants could communicate to us important things we need to know about ourselves, the creator, healing, community relations and life. Read the story from Bruchacs’ book, **Why Some Trees Are Always Green** to your students. Then ask them what they think about the story. What parts did they find most

interesting? What lessons can be learned from this story? Ask them to explore the meaning of “For great medicine never comes to those who are not watchful.” How does this story expand their knowledge and appreciation about plants and animals and themselves? Ask students to write their own native plant story.

Activity 3. “My Life as a Plant” Children create a story, comic strip or flip book about what happens in the life of a plant in the course of a day, week or season. Examples: A flipbook which shows the nibbling away of leaves on a shrub by a caterpillar. A comic strip showing the slow decay of an old stump as it is invaded by bacteria, fungi, carpenter ants, woodpeckers...and the beginnings of renewal as little seedlings begin to sprout out of the decaying stump.

Activity 4. A habitat is a plant’s or animal’s home. It’s the place plants and animals find what they need to survive. Ask students what happens to plants and animals when their habitats change. Explain that habitats are in a constant state of flux. When the changes occur naturally organisms can succeed one another each becoming better adapted to the condition of the site. This slow progressive change in structure and species composition of a community caused by gradual alteration of the environment by plants and animals that live there is called **succession**.

Adaptation is a genetic or behavioral trait or pattern, which enhances a plant’s or animal’s ability to survive and reproduce in its environment. Make it clear to students that adaptation doesn’t mean an organism can just up and change if the environment changes. Adaptation involves genetic change, which takes place over many generations. **Extinction** occurs when habitats undergo rapid change such as, natural catastrophes (dinosaur extinction) or when humans clearcut forests, drain wetlands, fill prairie land with concrete, spray chemicals into the environment, etc. Many plants and animals can not adapt to these massive and rapid changes and become extinct. Ask students to try to design an “extinct-free” plant, one that has the necessary special features (thorns, thick bark, natural toxins, food and water storage capacity, etc.) which will help it “cope” with any challenge (fire, drought, pollution, predation, etc.) Since three heads are better and more fun than one, have students work in teams of 2 or 3 on this project. Have groups name their plants and present the plant and its special features to the class in story form.

After the presentations, ask students if it is really possible to design an “extinct-free” plant. Why not? Are there alternatives to extinction and what are they? This is an excellent opportunity to introduce students to the importance of habitat preservation. It is a good time to, without burdening the child with all of the world’s problems, to ask the question, “How can we give something back to the earth?”

Part 4
CARING THROUGH ACTION



“A child’s world is fresh and new and beautiful, full of wonder and excitement. It is our misfortune that for most of us that clear-eyed vision, that true instinct for what is beautiful and awe-inspiring, is diminished and even lost before we reach adulthood.”

Rachel Carson

Television programs, videos, movies and computer games show children so much destruction, it’s no surprise that many children are convinced they “won’t have a future.” Most children feel the problems are too hopeless to change.

As educators we have a responsibility to empower children, to help them see that there are options, and that they can make a difference. This section, **CARING THROUGH ACTION**, is about replacing the fear with love, and giving children some tools to heal our degraded environment.

TEACHING TOOLS FOR EMPOWERMENT

A Teacher’s Code, by Maureen Z. Zarrella

“I will teach only that which is life affirming: the preservation, reclamation, and protection of our planet home.

I will teach connections: The myriad of ways that plants, soil, rocks and trees, animals and humans are dependent on and enriched by one another.

I will teach peace: with other people, with the flora and fauna, with the entire biotic organism.

I will teach giving back: time, energy, matter; by recycling... using biodegradable materials, planting trees, growing prairies...

I will teach the joy to be found outdoors.

I will take my students outdoors.

I will let the outdoors teach them...and me.”

Activity 1. Action and Attitudes of Gratitude. Without plants we would cease to exist. Plants provide us with food, oxygen, medicines, and the materials we need for shelter and clothing. Plants are the gifts of life that keep on giving, and saying “Thank you” is one way to express gratitude. In this activity, ask students to write a thank you letter to a plant, or to a forest. Reasons for gratitude should include the tangible and the intangible gifts the plant provides. Letters can be shared in class and with family members. Read them during an Earth Day celebration.

Activity 2. Have a class Environmental Visionary party. Ask students to explore the lives of visionaries such as, John Muir, Rachel Carson, Aldo Leopold, Maria Martin, and Carrie Dorman “Queen of the Forest Kingdom.” Invite parents, friends and other classes to the party. Present skits, or have story tellings about the visionary the class is honoring. Serve earth-friendly refreshments. (These snacks are low on the food chain and have little or no plastic wrapping.) Students can create party favors, which are symbolic of the person and event they are celebrating.

Activity 3. Caring for the earth and caring for people go hand-in-hand. Have students grow plants in the classroom for persons living in retirement homes. The class could deliver the plants in person along with specific information with respect to the plants natural habitat, what the plants need to stay healthy, how the plants have been used by native people, and why the student thinks the plants are so special. “A joy shared is a joy doubled.”

Activity 4. Have the students **create a school newsletter.** Include poems, stories, pictures and scientific information about forests. Make the objectives, to inspire, to educate and to entertain others.

Activity 5. Make a native plant garden on the school grounds. Choose plants, which will attract bees, birds, and butterflies. Link other class subjects to this outdoor project. Here are three examples. (Math), students measure the area and calculate the materials needed for the garden. (Science), research information about the plants and the elements necessary for a successful garden. (Art), students have the opportunity to sketch the plants they grow and may draw other animals that take up residence in or visit the garden. Contact the Washington Native Plant Society, 5221 S. May Flower, Seattle WA, 98118 (206) 723-8115 or The National Wildlife Federation about School Yard Habitats, P.O. Box 50281, Hampton Station, Baltimore, MD 21211

Call the City of Edmonds Beach Ranger Program for more CARING THROUGH ACTION projects and programs. (425) 771-0227

If you use any part of these materials and find them helpful, or if you have other comments or suggestions about this teacher's guide, we would like to hear from you. Please address your comments to Sally Linder, City of Edmonds Beach Ranger Program, 711 Main Street, Edmonds, WA 98020.

Glossary

Photosynthesis: The production of carbohydrates from carbon dioxide and water in the presence of chlorophyll, using light energy and releasing oxygen.



Chlorophyll: The plant pigment responsible for the transformation of sunlight energy into carbohydrates.

Terms relative to underground parts

1. root system: All the plants roots that anchor it in the soil, absorb and transport minerals and water, and store food.

Terms relative to stems

- stem:** Part of a plants shoot system that supports leaves and reproductive structures.
- herbaceous:** Not woody. A stem that dies down to the ground each winter. The stalk may remain but it is dead.

Terms relative to leaves

1. leaf: The usually green flattened structure of vascular plants. It functions as the principle organ of photosynthesis and transpiration.

A. Arrangement of leaves

a) **alternate:** Leaves originating one above the other on opposite or nearly opposite sides of the stem: not in pairs. i.e. Alder tree



b) **opposite:** Leaves originating in pairs, opposite each other. i.e. Maple tree

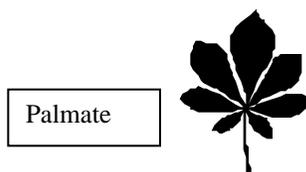
B. Simple vs. Compound leaves

a) **simple leaf:** One with a single expanded blade. The margins of the blade may be entire or variously notched or lobed, but never divided quite at the midrib.

b) **compound leaf:** Those with a number of leaflets arranged either:



Pinnate



Palmate

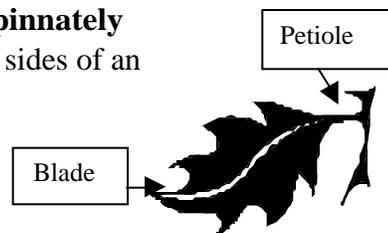
Alternate

Opposite

i) **palmately compound**, like the fingers and thumb radiating out from the palm, i.e. with 3 or leaflets arising from a common center. i.e. Horse Chestnut tree ii) **pinnately compound**, like the pinna of a feather, the leaflets arranged on opposite sides of an elongated axis.

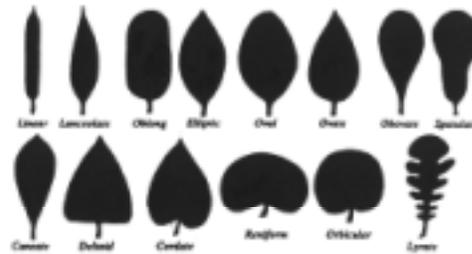
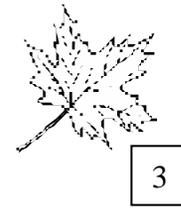
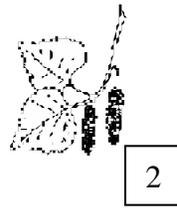
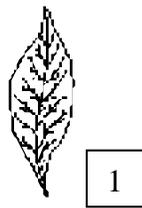
Parts of a leaf

- blade:** expanded flat portion of a leaf
- petiole:** the stalk or extension of a mid-rib, joining the leaf-blade to the stem of the plant.



Margins of leaves

1. **entire**, a smooth margin
2. **dentate**
3. **undulate**



Shapes of leaves

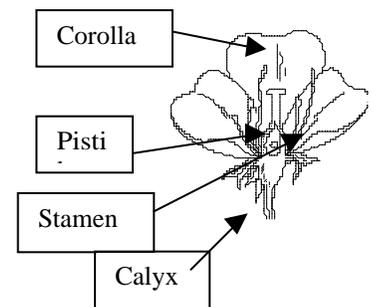
Surfaces of leaves

1. **viscid**: surface sticky
2. **glaucous**: surface waxy or covered with removable bluish or whitish powder
3. **glabrous**: surface smooth, neither waxy or sticky
4. **pubescent**: often means simply hairy, short straightish hairs

Terms relative to flower parts (Inflorescence)

A. Inflorescence of complete flower (or perfect flower), consists of:

1. **calyx**, of sepals
2. **corolla**, of petals
3. **stamen**, having a stalk or filament, and a head anther (male part)
4. **pistil**, often differentiated into ovary, style (stalk), and stigma (head) female part



Species: A particular kind of organism. Members of species possess similar inherited characteristics and have the ability to interbreed.

Population: A localized group of interacting individuals belonging to one species.

Community: All organisms living in a particular habitat and affect one another. All populations in a given area.

Habitat: A place where a plant naturally grows, or animal lives.

Ecology: The scientific study of how organisms interact with their environments.

Biodiversity: The variety of species that make up a community; refers to species richness (the total number of species) and to the relative abundance of species.

Microbe: A minute life form.

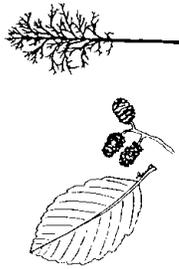
RED ALDER
Alnus rubra

Range in WA: Lower elevations in the westside forests, from sea level to 3,000 feet. A few isolated populations on the east side of the Cascades in moist lowland forest of northeastern Washington. Grows at low elevations from Alaska to California, but is most abundant in the Pacific Northwest.

Habitat: Common along streams, roads, clear cuts, burned areas, and open places. Tolerant of rocky soils. Intolerant of shade.

Description: In dense stands, a narrow tree with dark green, elliptical leaves, doubly serrated. Flowers are long, narrow, tightly packed catkins; fruits are small woody cones clustered or stiff stems. Fairly smooth, thin, grayish bark covered by warty blisters.

General: This important species pioneers disturbed areas and improves the soil in two ways: by building up the humus layer on the forest floor, and by increasing nitrogen levels through its nitrogen fixing root nodules. Red alder is the most common deciduous tree in the westside forests.



BLACK COTTONWOOD
Populus balsamifera

Range in WA: Throughout Washington, sea level to 4,500 feet.

Habitat: River banks and gravel bars at lower elevations in both eastern and western Washington.

Description: Forms extensive stands on islands and floodplains along major rivers. Large, tall deciduous tree, old bark deeply furrowed, dark gray. Thick, shiny leaves with heart-shaped base and sharp pointed tip, margins finely toothed. Buds very sticky and fragrant; seeds covered with white, fluffy hairs.

General: Spring "snowstorms" of cottony seeds give cottonwood its name. The sticky resin has a powerful, sweet, balsamic fragrance that permeates whole river valleys in the spring and early summer. Bees collect the resin, which is an anti-infectant, for their hives to prevent decay and protect the hive.



PACIFIC DOGWOOD
Cornus nuttallii

Range in WA: Westside lowland forests, up to 1,500 feet elevation.

Habitat: Moist, well-drained soils, often along streams or gullies, in open to fairly dense, usually mixed, forest.

Description: Abundant, branched, irregular tree to 30 feet in height, although shrubs under 10 feet high are common. Opposite leaves oval and sharp pointed at the tip with veins curving parallel to leaf edges. The blossom is 2-5 inches across and may have 4-8 white, showy bracts surrounding a rounded knob of greenish flowers. This central cluster turns into a compact group of red, bead-like berries.

General: Wood of western dogwood was considered good for bows and arrows, while the bark was used to make preparations as a blood purifier, a lung strengthener, or as a treatment for stomach troubles by Northwest coast Natives.



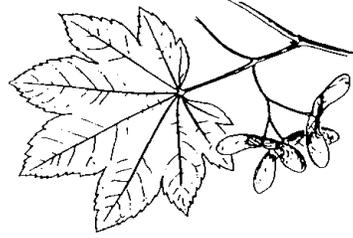
VINE MAPLE
Acer circinnatum

Range in WA: Low- and high-elevation forests on the west side, occasionally in wetter places east of the Cascades.

Habitat: Moist to wet areas, generally under other trees where some light reaches the forest floor (canopy openings, forest edges) but sometimes in open areas, low to middle elevations.

Description: Shrub or scraggly tree up to 20 feet tall with "maple" leaves, 7-9 lobed. Winged seeds grow as twins, 1-2 inches long.

General: Vine maple leaves are a magnificent, bright red in the fall. This abundant native plant spreads from branches rooting.



SCOULER'S WILLOW
Salix scouleriana

Range in WA: Widespread

Habitat: Upland thickets, streamside areas, clearings, edges of coniferous or deciduous forests, and wetlands at low to middle elevations

Description: Tall shrub or small tree, 5-40 feet tall with brown to light brown branches and velvety twigs. Leaves are deciduous, rounded at the tip and tapering to a thin base, alternate. Silky ovaries 1/4 - 1/2 inch long

General: Scouler's willow is a unique pioneering plant that is often the only shrub to grow on gravel bars of streams where soil is lacking. It also grows well in recent clearings or burns in environment east of the Cascades. Also known as fire willow



BIGLEAF MAPLE
Acer macrophyllum

Range in WA: Westside lowland forests. Also occurs in the Pacific coast region from Alaska to Mexico; sea level to 6,000 feet

Habitat: Deep, moist, open soils of river bottoms and valleys
Shade-tolerant.

Description: In open areas, multiple branches create a large, spreading crown. Leaves 8-12 inches in diameter, 5-lobed, with smooth edges. Fragrant yellow flowers in hanging clusters; paired, winged seeds. Gray brown bark, light on younger trees, dark and furrowed on older ones.

General: The largest of any maple, this species is second only to red alder as the most abundant deciduous tree in the westside forests. This tree is an important member of the Olympic rainforest, where it is draped with mosses and lichen ferns.



WESTERN RED CEDAR
Thuja plicata

Range in WA: Most abundant in low-elevation westside forests. Also occurs east of the Cascades, though usually confined to creek bottoms and wet places.

Habitat: Moist to wet sites, usually in shaded forests, but also grows in drier habitats, especially in richer soils

Description: A giant tree on the coast, the trunk tapers from a fluted base to a long, spike-like top. On mature trees, the branches are often long and point downwards. Bark is thin and stringy, leaves scaly and blunt. Branchlets hang like fronds or sprays from main boughs.

General: One of the most versatile and important resources to coastal Native people, cedar bark and wood can be used for many purposes. Cedar wood contains a natural fungicide which inhibits rot, making the wood valuable for outdoor uses. The bark is stringy and fibrous and can be woven into baskets, mats, and clothing.



WESTERN HEMLOCK
Tsuga heterophylla

Range in WA: Westside forests to 4,000 feet, also eastside high-elevation forest between 2,000-4,500 feet

Habitat: Dry to wet environment, adapted to grow on humus and decaying wood. Shade tolerant in low to middle elevations

Description: Up to 200 feet tall with a drooping tree-top leader. Bark is ridged and platy, reddish-brown, up to an inch thick in older trees. Needles are flat and blunt, irregularly spaced with alternating lengths with two lines of stomata underneath.

General: Although slower-growing, shorter-lived and smaller than Douglas-fir, western hemlock has the densest canopy, produces the most seeds, and is more shade-tolerant than any other conifer in the Northwest.



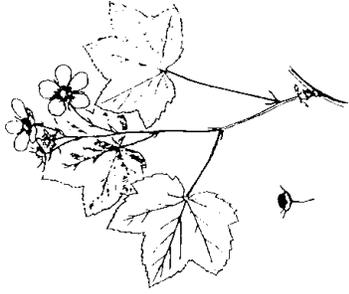
THIMBLEBERRY
Rubus parviflorus

Range: Throughout Washington

Habitat: Moist, shady places, open sites, low to subalpine elevations

Description: Erect, thornless deciduous shrub with large maple-shaped leaves, finely fuzzy on both sides. Large white flowers with petals crumpled like tissue paper, several in terminal cluster. Raspberry-like clusters of red berries

General: Berries were eaten and dried by Native peoples, and are sought after by bears and birds. The "thumb" name may come from the way the berry fits over the top of your finger just like a thumb



LADY FERN
Athyrium filix-femina

Range in WA: Throughout Washington

Habitat: Moist to wet forests, swamps, stream-banks and meadows to subalpine elevations

Description: Erect and spreading fronds to 4 feet tall, broadly lance-shaped, tapered at both ends



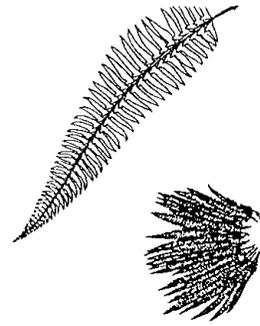
SWORD FERN
Polystichum munitum

Range: Westside forests at low to middle elevations

Habitat: Moist, shady forest understory

Description: Large evergreen fern with erect, narrow, lance-shaped, with sharp-toothed edges with large circular (spores) underneath

General: The largest and most common evergreen fern in western forests, sword ferns reach heights up to 3 feet. The rhizomes of the sword fern were dug and roasted by some Northwest tribes



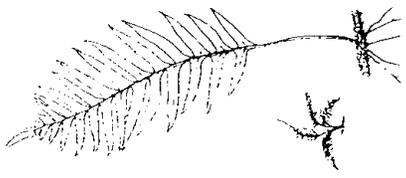
LICORICE FERN
Polypodium glycyrrhiza

Range in WA: Westside ecosystems

Habitat: Found on wet, mossy ground, logs and rocks, or commonly epiphytic on tree trunks and branches at low elevations

Description: Small to medium sized evergreen with creeping, reddish-brown rhizome. The leaflets are usually longer than an inch with pointed tips with finely toothed margins. Sori are arranged on either side of the main vein without an indusium.

General: When chewed, the rhizome on the licorice fern yields a sweet, licorice flavor often used by indigenous people as a sweetener for bitter medicines. The rhizomes were an important medicine for sore throats and colds.



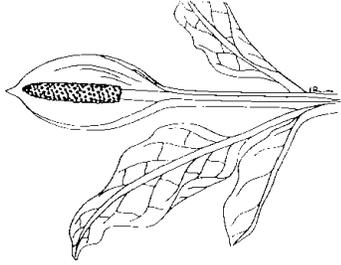
SKUNK CABBAGE
Lysichiton americanus

Range in WA: Most common west of the Cascades, but also plentiful in wet areas on the eastside at low to middle elevations.

Habitat: Swamps, wet forest, and wet meadows.

Description: Large, basal, lance-shaped leaves, robust and hairless. Greenish-yellow flowers on a spike on a thick axis which is hooded by a bright-yellow large bract which appears in the early spring. Has a sickly-sweet smell.

General: The leaves of the skunk cabbage are probably the largest of any native plant. Leaves were used by early Native Americans to line cooking pots and steaming pits, but were rarely used as food.



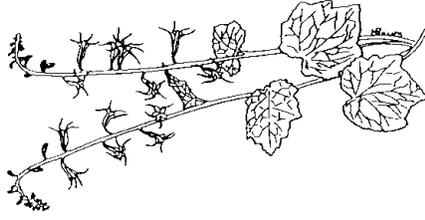
YOUTH-ON-AGE
Tolmiea menziesii

Range in WA: Westside low-elevation forests

Habitat: Moist, shady forest understory, moist to wet seepage areas, springs, swamps, stream-sides

Description: Small buds at the base of the leaf blades develop into daughter plants, giving the plant its name. Low-growing groundcover plant with heart-shaped, hairy leaves. Brownish-purple flowers on a long stem.

General: A common house plant. Small leaves grow from the bases of old leaves. Old leaves wither and slowly drop to the ground, allowing the new leaves to root. Sometimes called the "piggy-back plant."



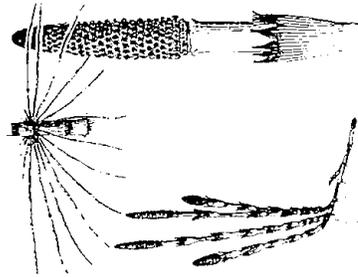
GIANT HORSETAIL
Equisetum telmateia

Range in WA: Throughout Washington State at low to middle elevations

Habitat: Moist to wet places, stream-banks, swamps. Usually near standing or flowing water

Description: Easily recognizable by whorls of thin branches with unbranched evergreen stems. Has two types of stems — sterile and fertile. Sterile stems branched, hollow, pale below, dark above. Fertile stems unbranched, fleshy, covered with felt-bearing, pear-shaped rubers at the joints.

General: Horsetails are a very ancient group of plants that grew to the size of trees when dinosaurs roamed the earth.



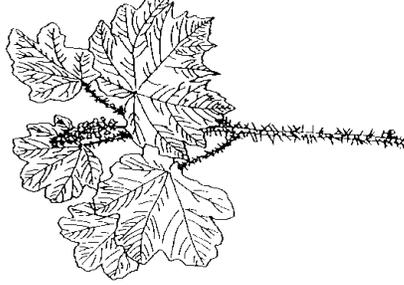
DEVIL'S CLUB
Oplopanax horridus

Range in WA: From sea level to 4,500 feet in coast and mountain forest ecosystems.

Habitat: Understory of moist woods, especially in wet but well-drained seepage sites, and along streams

Description: Large maple-like leaves with thick, spiny stems. Its light brown stem crooks and twists to support large, exotic leaves that spread like green platters to catch the sun's filtered rays. Sparse, thin thorns project from the underside of the leaves. Terminal clusters of white flowers in June later change to a pyramid of red berries in August. The berries are not edible.

General: For many northwest coast tribes, devil's club is the most important of all medicinal plants. The roots, and especially the greenish inner bark, are the major parts used for medicine. Numerous ailments, including arthritis, ulcers and digestive tract ailments, and diabetes have been treated with devil's club. Although beautiful, the thorns from Devil's Club inflict a mildly



RED-OSIER DOGWOOD

Cornus stolonifera

Range in WA: Widespread east and west of the Cascades, valley bottoms to near timberline

Habitat: Moist soil, typically in swamps and streamside forest, but also in open upland forest in thickets

Description: Red-osier dogwood has 3 eye-catching features. In winter and spring, the shiny, bright red bark of the thin stems provides color to the gray landscape. In June, the dainty white flowers stand out against the rich green leaves. And in August, it attracts attention with its lead-white berries

General: A relative of flowering dogwood, red-osier is an extremely important winter browse for elk and deer



REDFLOWERING CURRANT

Ribes sanguineum

Range in WA: Low elevations in westside coast forests and San Juan islands.

Habitat: Dry, open woods and rocky slopes, disturbed sites (clearings and roadsides)

Description: Several crooked stems form a loose bush 5-10 feet in height. Dull green leaves, small, red flowers in drooping clusters in early spring; blue-black round berries with an unpleasant taste

General: Early spring flowers attract the first migrant hummingbirds in the spring.



SALMONBERRY

Rubus spectabilis

Range in WA: Westside lowland forest and San Juan island ecosystems.

Habitat: Moist to wet places, often abundant along stream edges, avalanche tracks, and in wet, logged areas

Description: Erect, branching shrub with scattered prickles. Golden, satiny bark and scattered weak spines identifiable in winter. Small bundles of fresh, green toothed leaves in groups of threes appear in early April. Bright pink blooms last an amazingly long time. A soft, raspberry fruit, yellow to salmon-colored, it is considered by many a delicious treat.

General: Both sprouts and berries were eaten by Northwest coastal peoples. Young stem sprouts were gathered in early spring as a green vegetable. Sprouts can be peeled and eaten raw, having a sweet, juicy flavor. The berries were often eaten with salmon.



NOOTKA ROSE

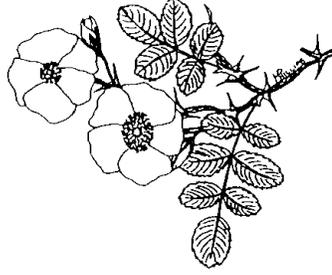
Rubra nutkana

Range in WA: Throughout Washington at lower elevations

Habitat: In a variety of generally open habitats (shorelines, meadows, thickets, streambanks, roadsides, clearings)

Description: Spindly shrub up to 10 feet high armed with straight prickles below each leaf axil. Leaves have 5-7, toothed leaflets. Showy, pink flowers about 2 inches across, usually singly. Fruit is a large, showy, scarlet hip.

General: There are over 100 different types of wild roses in North America, with at least 8 in Washington. Almost as well-recognized as the flowers are the red "hips," that hang on all winter. Native roses have straight spines, while introduced roses have curved spines.



SNOWBERRY
Symphoricarpos alba

Range in WA: Throughout Washington at low elevations
Habitat: Wide habitat range except for extreme shade or arid places, open forests, thickets, rocky slopes.
Description: The most recognizable feature are the clumps of waxy, white berries that form in late summer and last throughout winter. Erect shrub to 3 feet tall, opposite, elliptic to oval leaves with smooth edges. Flowers and berries usually clustered near branch ends.
General: Berries are considered poisonous by indigenous people and are given names like "corpae berry" and "snake berry" in several languages



OREGON GRAPE
Mahonia repens

Range in WA: Westside low-elevation forests.
Habitat: Dry to moist, open to closed forests at low to middle elevations.
Description: Small, evergreen, stiff-branched shrub, leaves like holly, shiny green and prickly. Bright yellow flowers, blue berries, edible.
General: Particularly common in Douglas-fir forests. Tart blue berries are used for jelly and wine. The shredded bark is used by native peoples to make a bright yellow dye for basket materials



SALAL
Gaultheria shallon

Range in WA: Westside lowland forests to 2,500 feet
Habitat: Coniferous forests, rocky bluffs to the seashore, low to medium elevations.
Description: Common shrub, creeping or erect, height variable 2-4 feet tall; thick, shiny evergreen leaves egg-shaped, sharply and finely toothed, white or pinkish urn-shaped flowers, reddish to dark blue berries.
General: Probably the westside forest's most abundant shrub salal forms an almost continuous shrub layer in many drier forests. The dark, juicy berries were eaten fresh and dried into cakes by Native peoples



STINGING NETTLE
Urtica dioica

Range in WA: Throughout the state
Habitat: Stream banks, moist open forests, meadows, very abundant from lowlands to subalpine elevations.
Description: Upright perennial 3-9 feet tall, armed with stinging hairs. Lance to oval-shaped, saw-toothed, opposite leaves. Greenish flowers arranged in dense, drooping clusters in leaf axils.
General: Stinging Nettles act as mini syringes and inject formic acid, the same irritant employed by ants and bees. Although today nettles are best left alone, they were an important food and medicinal source for indigenous people



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