

French Creek Outdoor School



Forest Field Study



Siskiyou County Office of Education Kermith R. Walters, County Superintendent

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Station Summary:

- The Forest Field Study is a series of games and activities selected by the resource professional which focus on the forest ecosystem. Activities include food web, observation, tree identification, predator-prey relationships, and succession games.
- Sixth grade field studies should focus on the forest ecosystem and the way in which organisms in the ecosystem exchange energy and nutrients between themselves and their environment.
- Fifth grade studies should focus on the structures and methods that plants and animals in the forest use for respiration, transport of materials, digestion and photosynthesis. The Forest Field Study should also focus on the use of trees as a resource by humans, and the considerations surrounding this use.

Station Over-View:

- 1 1/2 - hour total time for the station
- This time period allows for 5-6 activities.
- Remember to leave about 5 minutes for walking students back down to the campfire circle to use restrooms and switch with the Creek Field Study.

Station Leaders:

1. Be sure to pick up the station backpack.
2. Pick up the first aid kit fanny pack.
3. In case of an emergency contact Jason Singleton, Camp Director. His cell # is 530-598-6131.
4. Between stations contact the leader of the Forest Field Station to coordinate student group exchange and meeting at the fire ring area.
5. Give students a quick bathroom and drinking fountain break during the group exchange.

Set-up:

All necessary set-ups can be completed as the games are explained to the students.

Procedure:

Choose 5-6 activities from this packet. Descriptions of games are provided and the sources of the games are given if you need further information. Most of the games come from Project Learning Tree, Project Wild or Joseph Cornell's Sharing Nature With Children. You may view these books at French Creek Outdoor School. You are also welcome to use other games or activities from your experience that focus on the forest study topics.

Following is a suggested list of activities that have worked well, and flow nicely during the field study time period.

Suggested Activity List and Sequence

1. Observation Game
2. Tree Identification Talk
3. Meet a Tree
4. Predator vs. Prey/Thicket Game
5. Colors From Nature/Nature Art
6. Succession Game
7. Expanding Sensory Perception
8. Forest Health Activity

Materials:

All necessary equipment is located in a large plastic tub, labeled "Forest Field Study", which will be placed outside the Field Study Shed, next to the campfire circle.

The tub contains:

- Field Study Leader's Packet
- 4 pieces of rope for Succession Game
- Sheets of paper for Nature Art
- Blind-folds in plastic bag, for Meet A Tree
- Tree Finders
- Assorted field guides, including tree and wildlife guides
- Compasses
- Binoculars
- "Tree Cookies", several rounds of wood to use to study tree rings
- Scissors
- First Aid Kit

Resources Used:

Sharing Nature With Children, Joseph Cornell

Project Learning Tree

Project Wild

1: Observation Game

1. Start by discussing the scientific use of observation. Emphasize that an observation is something that we know from using one of our five senses. Something we *touch, smell, taste, see* or *hear*. Explain that in the forest, we must focus our powers of observation to really be aware of our surroundings. Tell the students that the game they are about to play will challenge their powers of observation.
2. Have the students make two equal lines. If the lines are uneven, have a counselor or other adult join the game.
3. Choose a counselor or teacher to demonstrate the game with you. Have them be your (the Resource Professional's) partner. Start facing each other, and then turn your backs to each other. Have the counselor change one thing about their appearance, such as untying a shoe, un-tucking a shirt, hand in a pocket, etc. Turn back around and try to guess what they have changed.
4. Now, have the two lines of students face each other. The students across from each other are partners. No switching partners! (*Unless an English language learner needs to be paired with a bilingual partner.*)
5. Have the students study each other carefully. Tell them which side is going to change something first. Count to three and have the students turn their backs to each other. Wait until the "changing" side looks ready. Don't give them too long. Have all of the students turn to face each other at the same time. Students then try to guess what has been changed.
6. Repeat with the other side.
7. Play one more time, changing three things.
8. Discuss—Which time was easier? Did you do anything differently the second time? Did you notice anything about your partner that you hadn't before?
9. Have students look around the forest now and tell you what they observe.

2: Tree Identification Talk

Show and discuss the various types of trees in the forest with the students. Share identifying characteristics of the trees with the students, e.g. long needles vs. short needles, number of needles, color of bark, etc. You may also want to talk about deciduous vs. evergreen, and photosynthesis. You can also discuss different uses for each species as it is identified. For example, Incense Cedar is used for pencils, Douglas Fir for framing, etc. If you have a fire

ecology background you may also want to talk about the natural burn cycle in this forest and how it relates to the different species.

Have students look, touch, and smell the trees, leaves, needles and cones as you talk to them.

Next, instruct students that at your signal, they will go to the tree that you name and put their arms around the tree. Try several different trees. You could also make this harder by shouting out an identifying characteristic or interesting fact about the tree, instead of the tree's name. This can be a good method of assessing the students' learning during the talk.

Trees to identify in the study area include:

1. White Oak
2. Black Oak
3. Incense Cedar
4. White Fir
5. Douglas Fir
6. Ponderosa Pine
7. Sugar Pine



3: Meet A Tree

1. Have students pick a partner, and link elbows.
2. Pass out blindfolds to each student.
3. Tell the students that when you say go, one partner will be blindfolded and the other will lead their partner, gently, to a tree. The blindfolded partner must feel and smell the tree to try to determine its species. The blindfolded partner must also try to figure out how big or small the tree is. Can they put their arms around it? Hands?
4. Then the blindfolded partner will be led back to the starting point in the clearing, take off their blindfold, and try to figure out which tree is “theirs.”
5. Establish some boundaries for the game; such as don’t go across the road or over the hill into the small valley.
6. Model guiding a student to a tree so that the students can see appropriate leading of a blindfolded partner. Lead the student to a tree by taking an indirect route. Emphasize trust, and safety. Remind them not to take blindfolds off until their partner has returned them to the beginning.
7. Monitor students to make sure they are leading their partners with safety in mind!
Collect blindfolds.

4: Predator vs. Prey / Thicket Game

1. Play this game outdoors, preferably in a forest or field with some brush.
2. Choose 3 students to be predators.
3. Draw a circle in the dirt about four feet in diameter. The circle should be near the center of the playing area. The predators must stay in this circle.
4. Alternately, use the edge of the playing area for the predator area.
5. Draw another circle near the predator circle. This is the bone yard. Students who are found are eaten and go to the bone yard, where they must sit quietly. Students in the bone yard can’t help the predator or the prey.
6. Establish boundaries that the prey must stay within when they are hiding. Have a counselor or adult stand at boundaries that may be difficult to enforce or monitor from the predators area, which is where you will be standing.

7. Predators close their eyes and count to 30 while the rest of the students (prey) hide. All of the prey must be able to see the predator from their hiding location. (They can't be behind a tree and then peek out occasionally. They have to see the predators at all times.)
8. Predators open their eyes and find prey by calling out their name and pointing at them. The predators cannot come out of their circle, but they can turn all around within it. If they do not know the student's name, they can describe what they are wearing.
9. If any preys are left, have predators close eyes and have prey move closer. Do this twice and see how close prey can get.
10. Play the game a couple of times, with different people for predators.
11. Closure: Discuss with students reasons for prey success (holding still, wearing dark colors –camouflage—covering with leaves, being smaller, climbing trees, etc.) Can they name animals that do these things?

5: Colors From Nature / Nature Art

1. Pass out a sheet of white paper to each student. Instruct students to make a drawing of some part of the forest ecosystem. (Discuss ecosystem if you have not done so already.)
2. Let students know that their drawings must have at least three colors, and the colors must all come from something they find in the forest. No pencils, pens, or crayons will be used.
3. Demonstrate the use of a couple of materials to the students. You might want to use dirt for brown or rotting wood, charcoal for black, and pine needles for green. Discuss ethical collecting and remind students not to take too much of a certain plant or material.
4. In the spring, there are orchids in the little valley at the study site. Ask students to stay away from the area where the orchids are growing and to make sure that none of these special flowers are picked!!
5. Collect and share drawings. Give the drawings to the teacher or to French Creek staff to hang in the museum.

6: Succession Game

Ask the Assistant Director to show you the hand signals for grass, bushes and trees, and the rope placements for this game.

1. Show students the clearing beside the cabin that is slowly filling in with grass, fern, shrubs, and small trees. Discuss the concept of succession.

2. Explain that you are going to play a form of “team” Rock, Paper, Scissors. Have two students demonstrate Rock, Paper, and Scissors.
3. Now explain that this is a succession game, so instead of rock, paper, and scissors; trees, bushes, and grass will be used. Trees come in after bushes, so trees beat bushes. Bushes come in after grass, so bushes beat grass. Grass comes in after trees fall down or are cleared, so grass beats trees.
4. Show the students the gestures for each plant.
5. Divide the students into two teams. Use two of the ropes to make a “face-off” section in the middle of the playing area. The driveway of the cabin works well.
6. Place the other two ropes at opposite ends of the playing field, each about 20 feet away from the “face-off” area. These will mark the teams’ home bases. (See diagrams.)
7. Instruct the students to huddle up, and choose which plants to be, together as a team. Stress that they must all be the same thing, and they must decide on the plant they will be first, and the plant they will be second, in case they have a tie with the other team. After the students decide on their plants, have them come to the face-off area and make two lines facing each other.
8. Count to three. On three, both teams make their plant gestures. The team that “wins” chases the other team to that team’s home base. Any members of the losing team that are tagged then join the “winning” team. Also, any member of either team that runs the wrong way must switch teams.
9. Repeat the huddle, having the students choose their next two plants. Play the game several times.

7: Expanding Sensory Perception

Have all students except one close their eyes. Have the student whose eyes are open describe a living thing or part of a living thing present in the forest, using any or all of his/her senses. When the description is finished, have the remaining students open their eyes and attempt to identify the living thing described.

8: Forest Health Activity

The objective is to discuss the number of trees in a forest. Can there be too many?

Have an area identified that has nourishment (food). (Have the students help you decide where and what that might be.) Tell the students to go to the area and stand by the nourishment they find. There will be less nourishment than students. Some students will not receive any food. They will become the suppressed trees. Discuss with the students the

concept of only so much food and water available in an ecosystem. Too many trees competing for that amount of water and nutrients can cause forest health problems.

Show students some examples of densely stocked stands. Show students two wood samples of trees that are the same age, but one is bigger than the other. Talk about the reasons for this.

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- Scissors
- First Aid Kit

Thank you for leading this station at French Creek Outdoor School. We sincerely appreciate your participation!!

California Standards & Frameworks for Forest Field Study

6th Grade, CA Science Standards

Area: Focus on Earth Science

Sub-Strand: Energy in the Earth System

Concept 4: Many phenomena on Earth's surface are affected by the transfer of energy through radiation and convection currents. As a basis for understanding this concept:

Standards:

Standard a. Students know the sun is the major source of energy for phenomena on Earth's surface; it powers winds, ocean currents, and the water cycle.

Sub-Strand: Ecology (Life Science)

Concept 5: Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:

Standards:

Standard a. Students know energy entering ecosystems such as sunlight is transferred by producers into chemical energy through photosynthesis and then from organism to organism through food webs.

Standard b. Students know matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.

Standard c. Students know populations of organisms can be categorized by the functions they serve in an ecosystem.

Standard e. Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.

Sub-Strand: Resources

Concept 6: Sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation. As a basis for understanding this concept:

Standards:

Standard a. Students know the utility of energy sources is determined by factors that are involved in converting these sources to useful forms and the consequences of the conversion process.

Standard b. Students know different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable.

Standard c. Students know the natural origin of the materials used to make common objects

Area: Investigation and Experimentation

Sub-Strand 7: Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the

other three strands, students should develop their own questions and perform investigations. Students will:
Standards:
Standard h. Identify changes in natural phenomena over time without manipulating the phenomena (e.g., a tree limb, a grove of trees, a stream, a hill slope).

6th Grade, CA Arts Standards

Subject: Visual Arts

Area: CREATIVE EXPRESSION

Sub-Strand 2.0: Creating, Performing, and Participating in the Visual Arts
Students apply artistic processes and skills, using a variety of media to communicate meaning and intent in original works of art.

Concept: Communication and Expression Through Original Works of Art

Standards:

Standard 2.4: Create increasingly complex original works of art reflecting personal choices and increased technical skill

Standard 2.5: Select specific media and processes to express moods, feelings, themes, or ideas.

CA History-Social Science, Physical Education and Health Frameworks (same as Geology)

5th Grade, CA Science Standards

Area: Life Sciences

Sub-Strand 2: Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

Standards:

Standard a. Students know many multicellular organisms have specialized structures to support the transport of materials.

Standard e. Students know how sugar, water, and minerals are transported in a vascular plant.

Standard f. Students know plants use carbon dioxide (CO₂) and energy from sunlight to build molecules of sugar and release oxygen.

Standard g. Students know plant and animal cells break down sugar to obtain energy, a process resulting in carbon dioxide (CO₂) and water (respiration).

Area: Investigation and Experimentation

Sub-Strand 6: Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

Standards:

Standard a. Classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.

5th Grade, CA Arts Standards

Subject: Visual Arts

Area: CREATIVE EXPRESSION

Sub-Strand 2.0: Creating, Performing, and Participating in the Visual Arts

Students apply artistic processes and skills, using a variety of media to communicate meaning and intent in original works of art.

Concept: Communication and Expression Through Original Works of Art

Standards:

Standard 2.7. Communicate values, opinions, or personal insights through an original work of art.

CA History-Social Science, Physical Education and Health Frameworks (same as Geology)

Oregon Science Standards

Content Strand: LIFE SCIENCE: Understand structure, functions, and interactions of living organisms and the environment.

Common Curriculum Goal: ORGANISMS: Understand the characteristics, structure, and functions of organisms.

Content Standard: Describe the characteristics, structure, and functions of organisms.

Area: Benchmark 2 (Grade 5)

Standard: Group or classify organisms based on a variety of characteristics.

Standard: Describe basic plant and animal structures and their functions.

Common Curriculum Goal: DIVERSITY/INTERDEPENDENCE: Understand the relationships among living things and between living things and their environments.

Content Standard: Explain and analyze the interdependence of organisms in their natural environment.

Area: Benchmark 2 (Grade 5)

Standard: Describe the relationship between characteristics of specific habitats and the organisms that live there.

Content Standard: Describe and analyze diversity of species, natural selection, and adaptations.

Area: Benchmark 2 (Grade 5)

Standard: Describe how adaptations help a species survive.

Oregon Arts Standards

Subject: Arts

Common Curriculum Goal: Create, Present and Perform: Apply artistic elements and technical skills to create, present and/or perform works of art for a variety of audiences and purposes.

Content Standard: Apply artistic elements and technical skills to create, present and/or perform works of art for a variety of audiences and purposes.

Area: Benchmark 2

Benchmark/CIM/CAM/PASS/Performance Standard: Create, present and/or perform a work of art, using experiences, imagination, observations, artistic elements and technical skills to achieve desired effect.

Common Curriculum Goal: Create, Present and Perform: Express ideas, moods and feelings through various art forms.

Oregon Social Science Standards

Content Strand: Geography: Understand and use geographic skills and concepts to interpret contemporary and historical issues.

Common Curriculum Goal: Understand how people and the environment are interrelated.

Content Standard: Understand how humans affect the physical environment.

Area: Benchmark 2 (Grade 5)

Standard: Understand how physical environments are affected by human activities.

Content Standard: Understand how physical characteristics in the environment and changes in the environment affect human activities.

Area: Benchmark 3 (Grade 8)

Standard: Understand how changes in a physical environment affect human activity.

Common Curriculum Goal: Understand how differing points of view, self-interest, and global distribution of natural resources play a role in conflict over territory.

Common Curriculum Goal: Understand the geographic results of resource use and management programs and policies.

Common Curriculum Goal: Compare and analyze physical (e.g., landforms, vegetation, wildlife, climate, and natural hazards) and human (e.g., population, land use, language, and religion) characteristics of places and regions.

Content Standard: Identify and analyze physical and human characteristics of places and regions, the processes that have shaped them, and their geographic significance.

Area: Benchmark 2 (Grade 5)

Standard: Identify physical and human characteristics of regions in the United States and the processes that have shaped them.