HANCOCK FIELD STATION
TEACHER/GROUP LEADER
CURRICULUM AND SITE INFO PACKET

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INTRODUCTION

WELCOME! We are excited that you will be participating in an OMSI Outdoor Science School Program. The purpose of this packet is to provide you with all of the information required to make your experience with us as rewarding and successful as possible. It addresses the most common questions, details, and issues involved in planning a program. Please read this packet carefully and refer to it throughout your planning process.

WHERE YOU ARE NOW

If you have received this program packet, you have made a reservation, signed a confirmation form, and returned it to the OMSI Program Registration Office with a deposit. Your reservation has been secured for specific dates and a set number of participants. If you wish to change your dates or the number of participants, please contact the OMSI Program Registration Office at 503.797.4661 or register@oms.edu.

WHAT HAPPENS NEXT

Now comes the fun part: it is time to plan your program! 30 days before your program, contact the program coordinator with your group’s numbers. If you know that they will be vastly different from the numbers on your contract, contact the program coordinator or registrar as soon as possible. You will review a sample schedule, choose curriculum topics and activities, and prepare your students for their upcoming educational adventure. Planning a program involves a number of details and logistics. A checklist located on the last page of this packet outlines the main tasks to accomplish before coming to OMSI Outdoor Science School.

WHO TO CONTACT FOR HELP

If you have any questions related to your OMSI Outdoor Science Education Program, please contact Christy Hewitt. She will send you an email to begin discussing your program one month prior to your arrival. Contact information is located at the bottom of each page of this packet, for easy reference.

OMSI OUTDOOR SCIENCE EDUCATION STAFF CREDENTIALS

Steve Tritz, Associate Director of Outdoor Education, has been with OMSI since 2006. He holds a degree in Environmental Science from the University of Guelph. Steve has been working in education for eight years teaching recreation and environmental education in Minnesota, South Dakota, and Oregon. He is a certified Lifeguard Instructor and Wilderness First Responder. Steve is an avid bird watcher and can often be found behind his binoculars in the forest, gazing at the tide pools, or on the river.

Janet O’Hara, Hancock Field Station Manager, has been with OMSI since 2013. Janet has a Bachelor’s degree in Outdoor Education and Environmental Studies from Ohio University. She has worked in Outdoor Education and residential camping professionally with Northwest Regional ESD, Camp Namanu, and several other camps prior to OMSI. She is a member of the American Camp Association, a certified Wilderness First Responder, and a Red Cross Lifeguard.

Christy Hewitt, Hancock Field Station Program Coordinator, has been with OMSI since 2009, starting in Visitor Services and the Science Store. She has a Bachelor’s degree in Physical Geology and Outdoor Education from Northern Michigan University. Christy worked at a variety of summer camps and after school programs before her time at OMSI. She is a certified Wilderness First Responder and Red Cross Lifeguard.
PROGRAM INFORMATION

Hancock Field Station was named for A.W. (Lon) Hancock, an amateur paleontologist who received national attention in 1942 when he made the first discovery of a vertebrate fossil—a rhinoceros tooth—in the Eocene-age Clarno Formation near the site of the present field station. Up to that time, only plant fossils had been found in this region of the world. Buoyed by success, he went on to unearth many vertebrates in the area, ranging from alligators to tiny camels and three-toed horses.

With his wife Berrie, Lon Hancock spent many summers leading young students on fossil expeditions in the Clarno area. In 1951, the Hancocks took 14 boys and a volunteer staff for the first 12-day summer camp under OMSI sponsorship. Since that initial program, Hancock Field Station has grown from a tent camp into a modern, well-equipped field science education center available to students in the Northwest, across the nation, and internationally. Hancock now serves more than 4,000 participants annually from across the United States, as well as from Japan.

Hancock Field Station is unique in its educational opportunities. Its proximity to the John Day Fossil Beds National Monument makes it an ideal place to study geology and paleontology. In the nearby volcanic and sedimentary rocks, one can discover the story of life from the time the dinosaurs disappeared 60 million years ago to the beginning of the Ice Age 2 million years ago. This was the period of time when mammals, flowering plants, and grasses were starting to become the dominant life forms. The fossil record unlocks for students the evolutionary paths of plants and animals, as well as the geologic history of Oregon.

Aside from geology and paleontology, Hancock offers an ideal setting in which to study many other fields of natural science. The juniper-sage grasslands provide a model location to study arid lands ecology. Groups driving over the Cascade Mountains can begin their study of ecology en route to Hancock. The Cascades form the rain shadow of Eastern Oregon, and students can watch the changes in plant and animal life during the trip. At the field station, we expand on those observations and take an in-depth look at the arid environment and how animals and plants have adapted to it. The nearby John Day River and its Pine Creek tributary offer the chance to study stream ecology and, on occasion, catch a glimpse of beaver, river otter or other local wildlife. Clear night skies offer a great opportunity to study astronomy without the interference of nearby city lights. The area surrounding Hancock Field Station is also rich in cultural history – Native American pictographs painted thousands of years ago and homesteads built by settlers in the late 1800s can be investigated at nearby locations.

The staff at Hancock Field Station is looking forward to helping your class discover and explore this fascinating area!

TYPES OF PROGRAMS

RESIDENTIAL PROGRAMS

Typically, Residential Programs are three to five days in length with instruction focusing on arid lands ecology, geology, paleontology, and cultural history. Most field studies occur within a day’s walk of the facility. For longer programs, field trips off site can be incorporated into the schedule, especially if groups can provide their own transportation.

DAY PROGRAMS

Our staff is available for day programs throughout Central and Eastern Oregon. Typical programs include: ecological investigations of the John Day River, geologic study of the three units of the John Day Fossil Beds National Monument, and studies in the Pine Creek Conservation Area. Please contact the Program Coordinator in advance if you are interested in off-site programs.

EXTENDED FIELD PROGRAMS

The Hancock Field Station staff is also available to accompany groups on extended field trips around or away from the Central Oregon area. Popular trips include remote areas in the Wallowa Mountains, Malheur Wildlife Refuge near Burns, Steens Mountain, or other sites. If you have an idea, please call and discuss it with us!

SHARING THE SITE

You may be scheduled to share the facility with another group. This can be a great opportunity for students from different parts of the state or country to meet, form friendships, or become pen pals. Groups share the dining hall, rest rooms, and recreation areas, but not cabins or instructional groups. Sharing evening programs and/or campfire programs might be an option and is highly recommended.

Hancock@omsi.edu
CURRICULUM OPTIONS

The following curriculum options will help you round out your program schedule with activities to complement your current science curriculum. Depending on your length of stay, you will choose one or more field studies, two or more interest groups, and an appropriate number of evening programs. Our staff is continually developing new activities; feel free to contact us to learn about any programs not listed here.

OREGON COMMON CURRICULUM GOALS (OCCG)

Our curriculum is concept-based and aligned with the Oregon Common Curriculum Goals in Science (OCCG). If there is a specific concept that you wish to cover while at Hancock Field Station, please let us know in advance. The bulk of the day is spent in the field involved with the natural world through hands-on activities and hikes. Our intent is to use the natural world as a vehicle to study concepts. The OCCG concepts that apply best to our studies are as follows:

- Cycles
- Evolution
- Population
- Change
- Organism
- Energy-Matter
- Cause-Effect
- Interaction

FIELD STUDIES

Field studies are the bulk of the programming that you will do each full day you are on site (5 hours per day). They begin after breakfast and continue into mid-afternoon. Any of the following disciplines can become the focus of a field study. Our typical interdisciplinary study encompasses ecology and geology. The relevant curriculum goals of the Oregon Science Standards are included in parentheses for your reference. Field trips farther than 10 miles away from the Hancock area require vans and include an additional charge of $0.75/mile.

Archaeology / Cultural History (Cycles, Population, Interaction, Change, Cause-Effect)
Thousands of years of habitation are recorded in the archaeological sites in the Hancock Field Station area. Students learn about prehistoric and historic indigenous tribes, their lifestyles, and the changes that occurred after contact with settlers. Hikes include a visit to local pictographs. An alternative focus is on the settlers of this area. Hikes could include a visit to one of several homesteads. Another option is a drive to Fossil to visit settlers’ sites along the way, the Fossil Historical Museum, and the old one-room schoolhouse.

The goal is for students to be able to recognize different habitats, the interactions of many organisms in a community, and the unique adaptations of organisms living in a semiarid ecosystem. Students compare and contrast different plant and animal communities, from riparian regions to hilltop grassland, to determine what factors make each area unique. Field hikes may include botany—plant/flower identification, tracking, macro-invertebrate studies, and birding.

Students will learn to identify and map plant species on the John Day Fossil Beds National Monument. Field guides, maps, and GPS will be used to record the data. Students will conduct random sampling plots to determine factors affecting wild plants of the area. Characteristics of invasive vs. native plant species will be studied and a discussion of the basic concepts of conservation biology will occur.

Students survey, compare, and contrast burned areas from recent wildfires. The lasting evidence from the 2011 Hancock Fire Complex provides an excellent opportunity for students to study the effect of and recovery from wildfire on wild grassland. Incorporated into this activity is an active investigation into fire behavior and its relationship to different types of vegetation. Students will research the effects of fire on native and invasive plant populations and how each respond to a fire event.

Fossils in Fossil (Cycles, Evolution, Change, Cause-Effect)
Drive to the nearby town of Fossil and have the opportunity to collect plant fossils behind Wheeler High School. Fossils on Wheeler County land can be collected and taken home by students. Please note: this is an off-site activity, and an additional fee of $0.75/mile will apply if the use of OMSI vans is required. In addition, the Fossil School District now charges $25 per group (up to 30 people) to dig here.
FIELD STUDIES (Continued)

Geology / Paleontology (Cycles, Energy-Matter, Change, Cause-Effect)
Students explore the breathtaking hills surrounding Hancock Field Station, focusing on the processes that formed the area along with those that are now wearing it down. The different rock types are studied, as are the mineral veins deposited within them. The three formations found in the Hancock area represent 50 million years of climatic and environmental change. Students learn how fossils are made, how they are excavated, and what can be learned from them. In the field, they compare fossils found in the different formations. Since our activities occur on National Park Service property, fossil material cannot be removed from the site.

Students compare natural pond and stream systems in order to formulate a list of requirements for aquatic organisms to survive and prosper. This may include testing pH and dissolved oxygen levels, identifying aquatic invertebrates and plants, and measuring temperature and visibility.

Survival (Energy-Matter, Change, Cause-Effect)
Learn how to survive in the desert! Learn how to find water in a dry environment, seek out natural sources of food, and build protective shelters from the elements. Learn basic principles of orienteering to find your way when you are lost. Knot tying, fire building, and cordage-making are also skills that students will become familiar with.

INTEREST GROUPS

Interest groups are short (1-1.5 hrs) classes focusing on one topic. They are frequently scheduled in the afternoon after students return from the field. Usually, several interest groups are offered at one time. Students should be assigned to or choose their own interest groups prior to their arrival at camp. Group sizes must remain at 15 students. Choose your interest groups from the options listed below.

Aboriginal Skills (Interaction, Change)
Students investigate the survival skills and traditions of the native people of the high desert. The class includes an emphasis on cultural history as well as the evolution of various technologies. Through active participation, students learn about and try their hands at a selection of the following: the making of fire from natural materials, the making of cordage from plant fiber, the use of traditional hunting tools including rabbit sticks and an atlatl (spear thrower), and shelter building.

Aquatic Study/Water Quality (Cycles, Population, Interaction, Energy-Matter, Change, Organism, Cause-Effect)
Students learn the necessary conditions for organisms to survive and flourish in an aquatic system. Students test pH and dissolved oxygen levels of nearby water systems, take samples of invertebrates and plants, and assess the health of a local water system.

Avian Study (Cycles, Population, Interaction, Evolution, Change, Organism, Cause-Effect)
This activity is an introduction to ornithology. Working with Hancock’s study collection of skins, bones, skulls, owl pellets, and feathers, students are introduced to basic bird anatomy as well as individual species’ adaptations to unique habitats. Students may continue in the field, equipped with binoculars and field guides, in order to experience birding first hand. This class is recommended during the morning when birds are most active. Please check with the Program Coordinator about scheduling a morning class.

Climbing Wall (Energy-Matter, Cause-Effect)
A short climbing wall is available and enables students to experience rock climbing and some of the safety equipment used, including ropes and knots, harnesses, helmets, and carabiners. Students are encouraged to challenge themselves, taking turns on the wall and encouraging and supporting their peers in a controlled, well-supervised setting.

Ethnobotany (Cycles, Organism, Energy-Matter, Change, Cause-Effect)
Students focus on traditional Native American uses of plants in the area. The class includes discussion and possibly creation of foods, basketry, cordage, hand tools, and medicines made of local wild plants.

Fossil Study (Cycles, Organism, Change, Cause-Effect, Interaction)
This activity focuses on fossils--- what they are, how they are formed, and what stories they have to tell. They will gain insights into natural fossilization processes, and see some of these real fossils in the local area. The concept of geologic time is also introduced to give students an understanding and appreciation of how ancient the local fossils really are.
INTEREST GROUPS (Continued)

Insects and Spiders (Cycles, Population, Interaction, Change, Organism)
There is no shortage of live specimens for students to observe in this popular activity. Students learn about the special adaptations of insects and spiders, then search for them in the area and investigate closely those that they find. Identification guides are used to aid students as they present their finds to the class. Microscopes are available to view specimens.

Lapidary (Cycles, Energy-Matter, Change, Cause-Effect)
Students focus on the rock cycle and mineral identification. They then polish thunder eggs, which they can take home with them. Thunder egg halves must be purchased by the group ahead of time (see Lapidary Shop in Logistics section below.) Thunder eggs can be purchased from HFS directly for $2 per half. Whether or not eggs are purchased from HFS, a fee of $1 per participant will be charged for use of equipment. Recommended for warmer weather (from about April 15 through October 15). Please consult with the Camp Manager or Program Coordinator to plan this activity.

Leave No Trace (Environmental Ethics, Cause-Effect)
Students will gain an orientation to the National Monument trails and the Seven Principles of Leave No Trace. Students will get to know their group leaders and peers, play games, and learn about all the ways in which people can tread lightly on our Earth. This interest group is usually done as an introductory hike on the first day of the program.

Orienteering (Energy-Matter, Cause-Effect)
Students gain insight into the important skill of understanding where they are and how to find their way using natural and mechanical processes. Students learn about the Earth’s magnetic field, how to use compasses, and are challenged in the field to follow orienteering courses built by their peers. For older students, the concept of topography and using maps is introduced.

Renewable Energy (Environmental Ethics, Energy-Matter, Cycles)
Students will have the opportunity to participate in hands-on experiments focused on utilizing renewable energy sources such as wind and solar power. Discussions on real world issues and how to work towards solutions is part of this interest group. Part of the discussion may include how Hancock Field Station harnesses the power of the sun through the use of solar panels to provide some of the electricity used here at camp.

Reptiles and Amphibians (Cycles, Population, Interaction, Change, Organism)
Students focus on the differences between reptile and amphibian physiology, behavior, and adaptations to a semiarid climate. Students may attempt the capture and release of specimens and learn how to properly handle these animals to view their special adaptations. Finding actual wild animals is most successful during the warm months (May through September).

Rocks and Minerals (Cycles, Energy-Matter, Change, Cause-Effect)
Students delve into the processes by which different rock and mineral types form, as well as the characteristics used to identify them. Using a hands-on approach, students test a variety of mineral samples for such properties as color, hardness, streak, crystal habit, cleavage, and luster.

Skulls, Skins, and Bones (Cycles, Population, Interaction, Evolution, Change, Organism, Cause-Effect)
This activity enables students to touch, observe, and ask questions about the skulls, skins, and bones of animals. All of our study skins were either donated or obtained from natural or road kills and have been properly prepared and preserved. Students are encouraged to learn about the characteristics of vertebrates in the Hancock area. The concept of adaptation to the unique conditions of each organism’s environment is emphasized.

Team Challenge (Interaction)
This is an excellent activity for building trust, cooperation, and group cohesion. Students work as a team and attempt to solve a series of mental and physical challenges. All of our challenge activities involve low elements and do not require the use of ropes or specialized equipment. However, instructors often use ropes or webbing for this class.

Weather and Climate (Cycles, Energy-Matter, Cause-Effect, Change)
Students will become familiar with the use of different weather instruments, as well as weather-related concepts such as the rain shadow effect, albedo, air pressure, surface temperature, and humidity. The difference between weather and climate will be discussed, as well as the historic and current factors of climate change.
OFF-SITE ECOLOGY HIKES

Cove Creek Canyon
Cove Creek Canyon is a relatively flat hike that focuses on the study of archaeology and ethnobotany (traditional uses of native plants). Students will learn about many of the customs of the native tribes that were indigenous to the area, as well as the pictographs they left behind as their legacy. A nearby homestead site offers a glimpse into pioneer life in this area.

Robinson Canyon
Robinson Canyon gives students an opportunity to explore the Pine Creek Conservation Area near Hancock Field Station, and provides an amazing example of Eastern Oregon’s natural habitat. Although only about 10 miles from HFS, the diversity of plant life at Robinson Canyon is much greater than at camp. Students can also learn about fire ecology and study its effects from the prescribed burn of 2005 at Robinson Canyon.

**IMPORTANT** A Note about OFF-SITE ACTIVITIES

Depending on your program schedule it may or may not be possible to schedule off-site activities or field trips during your program. Because most groups are dropped off on the first day of camp and picked up again on the last day, with no available transportation during the program, most field trips or off-site activities are scheduled when transportation is present. If buses (or whichever transportation the school uses to travel to the site) are able to stay on site for the entire program, schedule flexibility increases dramatically.

Please note access to some State Parks, National Monuments, and Forest Service destinations/activities may limit group size and cost your group additional fees above and beyond OMSI’s program fees. Examples include mileage to transport OMSI staff and vehicles to a destination, entrance fees to parks and monuments, and parking passes (for both OMSI vehicles and private vehicles driven by chaperones/teachers). If you are interested in planning an off-site activity, please discuss these extra fees with the Camp Manager before your arrival.
EVENING PROGRAMS

Evening Programs (1-1.5 hrs) usually take place between dinner and campfire. Since the entire group participates in an evening program, chaperones/counselors must be present (1 per every 10 students) to assist OMSI staff. Please select one Evening Program for each night of your stay.

Astronomy Slide Show
Go on a photographic journey through our Solar System and out to the distant stars. These photos are the result of work done by hundreds of people using telescopes and NASA space probes, including the Hubble Space Telescope and new images are often added as they are retrieved.

Bat Slide Show (Cycles, Population, Interaction, Change, Organism)
A slide show on the natural history of bats, including the bats of Oregon, demonstrates the importance of bats in the ecosystem. Students learn about the myths and realities of bats and become familiar with their evolution as well. The opportunity to see live bats in camp is often available during the late spring.

Birds of Prey (Cycles, Population, Interaction, Evolution, Change, Organism)
This presentation includes a close look at one of our resident birds of prey. Emphasis is on the definition of a raptor, unique adaptations of these animals, a Q&A session, and (if possible) time for students to get a closer view of the bird. This can be combined with owl pellet dissection (good for younger groups).

Eco-Games (Cycles, Population, Interaction, Change, Organism)
(Only during times of the year when there is daylight after dinner or sometimes offered as a morning activity). Students play a variety of active field games designed to illustrate specific natural history concepts.

Environmental Forum (Population, Interaction, Change)
Students separate into groups that represent a variety of stakeholders at a mock forum involving a land-use issue. The activity demonstrates the complexity of land-use issues and the importance of compromise.

Evening Walk (Interaction, Change, Cause-Effect)
Take a stroll on one of the nearby trails to witness the desert at twilight. Watch for bats or owls flying overhead and listen for crickets and coyotes. See the landscape take on new shapes and colors as the light fades and the desert comes to life. Students learn about the many desert animals that we call “crepuscular.”

Herpetology (Cycles, Population, Interaction, Evolution, Change, Organism)
This activity features a slide show on the natural history of reptiles and amphibians, including those found in the Hancock area. This evening program may include a question and answer portion or discussion on the various orders of reptiles and amphibians.

Night Hike (Interaction, Change, Cause-Effect)
Discover the night! Test your senses of hearing, smell, and touch through sensory activities outside, while learning about adaptations of nocturnal organisms. Weather permitting your group may do some observational astronomy or a sky tour of the night sky. When daylight after dinner permits it, you may opt for an evening walk at the base of the Palisade cliffs; a self-guided natural history loop (less than one mile) shows excellent examples of Clarno fossils. This is an excellent time to observe bats and birds exit their cliff-side perches. Not available in May and June, when the sun sets late in the evening.

Observational Astronomy (Energy-Matter, Change, Cause-Effect)
Clear nights unhindered by city lights offer views of the stars, the moon, and deep space objects. Students are taught how to use star charts and then go outside to view the constellations. Telescopes will be set up and instructors will lead sky tours, weather permitting. Outdoor astronomy is not recommended in late April and May because the sun does not set until late in the evening.
CAMPFIRE

Most groups close each day with a campfire program (30-45 min). Good activities include, but are not limited to, simple call and response songs, student skits, and stories. If you know musicians, invite them along. OMSI staff and visiting groups share campfire responsibilities. At least one of your campfires during your stay will be led by OMSI staff.

Get kids excited about campfires before and during the outdoor science school experience. It always helps if teachers and parents are enthusiastic as well. (Extreme silliness often wins over even the "coolest" of your student body.) Keep things simple. This goes for stories, songs, and skits.

Stories can be fun if someone feels comfortable telling one. They can be read directly from books, or memorized and acted out in the spirit of true storytelling by students or adults. Topics are up to you, but relating them to their outdoor experience is always helpful. Check your local or school library for good books on Northwest folklore, campfire stories, and native legends.

Skits prepared prior to arrival or during your stay are a great way to get everyone involved in the campfire. For example, give students a theme (e.g. an ecological concept) and have them act it out. These skits do not have to be scientifically correct; let the kids come up with their own legends.

<table>
<thead>
<tr>
<th>How did the beaver get its flat tail?</th>
<th>Why does a coyote howl?</th>
</tr>
</thead>
<tbody>
<tr>
<td>How did the bobcat get its short tail?</td>
<td>How did the porcupine get quills?</td>
</tr>
<tr>
<td>How did the owl learn to fly silently?</td>
<td>Why does a raccoon wear a mask?</td>
</tr>
</tbody>
</table>

Assign one of the following topics to each group. Allow the kids to come up with a story about:

<table>
<thead>
<tr>
<th>What a tree &quot;sees,&quot; &quot;hears,&quot; or &quot;feels,&quot; during a day</th>
<th>The story of a leaf that got fossilized</th>
</tr>
</thead>
<tbody>
<tr>
<td>The water cycle (the story of a drop of water)</td>
<td>The rock cycle</td>
</tr>
<tr>
<td>The adventures of a bobcat from birth to adulthood</td>
<td>What happens in the typical day of a fish</td>
</tr>
<tr>
<td>What an eagle &quot;sees,&quot; &quot;hears,&quot; or &quot;feels&quot; during a hunt</td>
<td>What it is like to be a pocket gopher</td>
</tr>
</tbody>
</table>

During free time give cabin groups a piece of paper with a saying on it. For example, "When cheese sandwiches ruled the earth, the world was like..." Another idea for a skit is to give cabin groups a small paper bag with random objects in it and have them create a skit using those objects. We have song books available for you to use during your campfire, but anyone with experience probably remembers some favorites. The students might also have some they would like to share. Also consult Rise up Singing (Annie Patterson and Peter Blood, 1992) and group song books your school music teacher might be able to suggest. Another option is to read or recite The Lorax by Dr. Seuss. Have the kids act out the parts: truffula trees, brown bar-ba-loots, swomee swans, etc.
PRE-PROGRAM ACTIVITIES

Pre-program activities are designed to help prepare students for their OMSI Outdoor Science School program. They will introduce you and your students to what you will see, experience, and learn in the field. You may choose some activities and not others, depending on the age of your students, their background, and available resources and time.

1. We do a fair amount of hiking in the field. It is a good idea to coordinate with your physical education department to help prepare students.

2. Have each student pick an animal or plant found in the region and write a report about it. This activity familiarizes students with the local plants and animals and gives students something special to look for when they arrive. We suggest any of the following:

   **Animals:**
   - Coyote
   - Western Fence Lizard
   - Turkey Vulture
   - Pronghorn
   - Western Fence Lizard
   - Common Raven
   - Cottontail Rabbit
   - Great Horned Owl
   - Western Rattlesnake
   - Mule Deer
   - Gopher Snake
   - Scorpion
   - Darkling Beetle
   - Pacific Tree Frog
   - Deer Mouse
   - Beaver

   **Plants:**
   - Gray Rabbitbrush
   - Wild Onion
   - Willow
   - Saltbrush
   - Western Juniper
   - Big Sagebrush
   - Globe Mallow
   - Filardee
   - Great Basin Wild Rye
   - Arrowleaf Balsamroot
   - Mint (esp. Horehound)
   - Bitterbrush
   - Bluebunch Wheat Grass
   - Idaho Fescue
   - Biscuitroot
   - Buckwheat
   - Wooly Mullein
   - Common Yarrow
   - Tumbling Mustard
   - Wavy-leaf Thistle

3. Spend a session talking about the parts of a plant and their functions. Discuss the functions of stems, roots, and leaves. Discuss the needs of plants, such as nutrients, sun, and water. Review the basics of photosynthesis. Have students make sketches or identify a few of the leaves around your school. This will help them become familiar with the area near their home and serves as a good comparison for what they find at camp.

4. Valuable information can be recorded through sketching in the field. Have the students practice sketching some familiar objects to scale: to the scale of a hand, a person, a building, and the landscape. The sketches should impart information, but do not necessarily need to be artistic. Label the sketches, add a scale, give a compass orientation, and supply notes on color, texture, composition, etc.

5. Have the students practice keeping a journal for a week and practice recording activities, places visited, information learned, weather conditions, personal feelings, and sketches. Each entry should indicate the time and day it was written.

6. Have the students spend 15 minutes writing reflectively on a particular topic or one of their choosing. Afterwards, have them work in small groups to share their writing and explain how writing impacted what they thought. ("It clarified my thoughts," "It allowed me to better articulate what I thought," or "It forced me to really think about the topic for the first time.") The teacher can move between groups, prompting and facilitating discussion.

7. Review the basic structures of the Earth and the concept of plate tectonics with the students. The exact mechanics are not as important as the idea that the Earth changes: mountains form and wear down, oceans open and close, etc. Films should also be available to cover these topics. Familiarize the students with geologic time and the concept that different life forms lived at different periods. A geologic timeline can help illustrate this concept.

8. Print out the Field Notebooks provided by OMSI. Have the students make a personalized cover for their Field Notebook. If students are familiar with their notebooks before arriving they will have a better idea of what to expect during their visit. You may wish to collect them from the students and hand them out again upon arrival at HFS.

9. Have the students make personalized nametags for themselves and their chaperones. Our staff is skilled at learning names quickly, but nametags always help. This activity also helps build anticipation for camp. Laminated construction paper, wood "cookies," and plastic-covered note cards work equally well. Include cabin assignment, field study, and interest group information, so students always have a handy reference for what they will be doing during the program and where they should be at a given time.
10. Involve students in planning campfire activities. You may want to have cabin groups practice skits in advance to perform at campfire programs.

**POST-PROGRAM ACTIVITIES**

Post-program activities help reinforce concepts learned at camp. Ideally, you will be able to refer back to your OMSI Outdoor Science Education experiences throughout the year.

1. "Create an Animal." During the program, we will work with the concept of adaptation in both plants and animals. Have students recall different adaptations they saw and ask if they can remember why the plant or animal had a particular adaptation. Stretch the concept further. What would the particular species have to do if the climate became hotter and drier? Divide the students into groups of three or four; give them a large sheet of butcher paper and some pens, as well as a type of plant or animal and an environment (such as a water animal in the Arctic or a plant in the high alpine country of Mt. Hood). They'll first need to list the factors to which species need to adapt: potential food sources, potential predators, sources of shelter, etc. They then can create any species they want. Encourage creativity, but they must consider all the basic needs: food, water, warmth/cooling, shelter, and protection. Have each group present their animal to the rest of the class.

2. Review the Field Notebook with your class. Fill in the parts that may not have been extensively covered.

3. Have students pick up a rock or two from near their home and bring it to class. Have them try to identify it as either igneous, metamorphic, or sedimentary. What story does it tell? Was it found in a layer of rock or loose? Review with your students (and build upon, if you can) the geologic history of your community and of Oregon. Again, there may be a film that can cover this topic.

4. If you have an upcoming open house or parents’ night, have a display table of items from the program that the students brought home. Things to be included are pictures, field books, etc.

5. Have the students draw a large mural depicting their experiences. Include poetry, drawing, stories, letters, etc. depicting what the students did, saw, learned, and enjoyed.

6. Consider entering the students' writing or art for inclusion in the school (or community) paper or literary magazine.

7. Have the students publish a newspaper covering events and classes which they participated in during the program. Students might even plan ahead to "interview" instructors, parents, teachers, and other students during the program. Have students include drawings and/or photographs.

8. Review key terms, concepts, and vocabulary that the students learned at camp. Examples include:

<table>
<thead>
<tr>
<th>Carnivore</th>
<th>Herbivore</th>
<th>Omnivore</th>
<th>Producer</th>
<th>Consumer</th>
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<td>Habitat</td>
<td>Community</td>
<td>Niche</td>
<td>Food Chain</td>
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<td>Nutrient Cycle</td>
<td>Photosynthesis</td>
<td>Invertebrate</td>
<td>Adaptation</td>
<td>Ecosystem</td>
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<tr>
<td>Erosion</td>
<td>Deposition</td>
<td>Rock Cycle</td>
<td>Rain Shadow</td>
<td>Fossilization</td>
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**RESOURCE LIST**


The introduction to this book provides a short, easy-to-understand summary of the geologic history of Oregon. It would be of assistance in any post-trip project. Depending on your route it will also aid you in sharing what you will see en route.


An excellent guide to the sights, sounds, scents, and stories of Oregon’s dry side, the stunning, vast, sunny East, which is the state’s true West. In three extensive, flexible driving and hiking tours of the region, you’ll visit the rugged mountains, mysterious fossils, vanilla-scented ponderosa pines, painted desert colors, wildlife and wildflowers, remote outposts, and rich history.

RESOURCE LIST (Continued)

This book is an excellent introduction to geology, the theory of plate tectonics, and geologic time. The book simply and concisely describes plate tectonics and geologic time, as well as activities you can do with your class. It is an invaluable, inexpensive resource. The Ranger Rick series can be ordered from the National Wildlife Federation.

This is a good resource to start a pre-session on plants. It is full of basic information and fun activities to do with your students concerning plants; again, an invaluable, inexpensive resource. The Ranger Rick series can be ordered from the National Wildlife Federation.

SITE INFORMATION & LOGISTICS

POLICY REVIEW

After planning the program schedule, it is time to plan the logistics of the program. This section is meant to help you coordinate all of the details of your program. You will also receive the Policy Packet which lists important policies and procedures everyone must know before arriving on site, to insure program quality and safety for all. Here are some key highlights:

1. Please select a "health officer" (parent/teacher) who is responsible for all medical forms and insurance information for each student and adult. The Health Officer is responsible for collecting all medication and ensuring that each camper receives medication as prescribed. Health officers must have current, nationally recognized CPR and First Aid certification. An OMSI staff member with first responder first aid and CPR training will always be on duty and available to assist in an emergency.

2. OMSI's role is primarily instructional. Student supervision is primarily the responsibility of the school/group. Students must be monitored by school/group representatives at all times, including instructional activities, recreation, meals, and bed/cabin time. The school/group is responsible for student actions, and the consequences of those actions, during the program.

3. There must be one school/group representative designated as the lead who will make all final decisions and plans for the group. Though many teachers might be involved, one must be designated as “in charge.” This person must remain on site at all times, be visible and available, and participate in all aspects of the program.

4. The school's lead person must set clear academic and behavioral goals prior to the program to insure that the students and chaperones are prepared to benefit as fully as possible from the program. S/he should meet at least once with all participants to clarify any questions or concerns about those goals and any other aspects of the program. Participants who jeopardize their own or others' safety or well-being by breaking any policies listed in the policy packet will be asked to leave, with the school/group having responsibility for transportation.

5. Because their primary responsibility is student supervision, adult chaperones should not leave the site at any time during the program, regardless of whether they brought their own transportation or whether they are “off duty.” If a trip into town is unavoidable, it must be approved by both the Camp Manager and the school's lead person. No alcohol may be consumed by anyone (including adult chaperones), on or off site, during programs for minors.
NOTES ON ASSIGNING CHAPERONES/COUNSELORS

Teachers, leaders, chaperones, and counselors are responsible for student supervision at all times. It is the group’s responsibility to make certain that each cabin of students has one chaperone/counselor and at least one classroom teacher, parent chaperone, or high school counselor to accompany each group in the field. Talk to the Program Coordinator about what cabin arrangement you can expect, and how many teaching groups you will have. It will be the group leader’s responsibility to screen, choose, train, and monitors these chaperones/counselors. Inform chaperones in advance of the strenuous activity (3-4 miles of hiking) they will experience during a day in the field, and that they will be “on duty” 24 hours per day during their stay.

A ratio of 1 adult to 8 students is ideal at Hancock Field Station. Sometimes it is difficult to get volunteers; please talk to the Program Coordinator about what minimum number will be adequate if you are struggling to find chaperones. Sometimes far more chaperones want to come to Outdoor School; again, ask the manager if it is possible to bring a few more adults. Even if there is room in cabins for more adults, keep in mind that a large number of chaperones can sometimes become a distraction for the students. Arranging a schedule in advance for times in which chaperones will be “on” and times when they are “off” can be very helpful.

If there are any students with special physical, medical, or learning needs please let the Program Coordinator know as soon as possible, so that we may be best prepared to aid in their success. Student aides may attend the program free of charge.

A NOTE ABOUT WEATHER

The average spring and fall temperature is a very comfortable 60°F. The average annual rainfall is about 10 inches. Early spring and late fall groups should be prepared for cold temperatures, rain, and even snow. Early spring days are in the 40s and 50s; in late spring, summer, and early September we have had temperatures reach 100°F. Most days are sunny and warm, but groups should be prepared for both hot and cold weather. No matter what time of year there is a drastic temperature difference between night and day. In cases where extreme weather requires evacuation of Hancock Field Station, schools/groups will be refunded the unused portion of fees. No other weather related refunds will be issued.
FACILITY

Hancock’s facility is well-equipped but rustic. Most of the buildings were built in the late 1960s and are wood with cedar shake roofs. They were designed for summer temperatures and are well-ventilated. For early spring visits, warm layers and heavy sleeping bags are recommended.

Cabins
Six wooden A-frame cabins have 12 bunks and mattresses. Cots can be added to these cabins to sleep up to 14. There are also two mid-sized cabins that contain 8 bunks. All of these cabins have cement floors containing rubber safety mats, doors, electricity, and small heating units. Five small A-frames sleep 3 and have carpet, heat, electricity, and storage areas. **Maximum capacity at Hancock Field Station is 109, including students and adults.**

Dining Hall (Berrie Hall)
The dining hall is enclosed, has screened windows, and heat. Students assist with setting the tables before meals and the clean-up after. OMSI prides itself on having meals that are nutritious and homemade. Vegetarian, vegan, and gluten-free options are available upon request if pre-arranged. Please contact the Program Coordinator with any pertinent dietary information in advance so that the cook staff can be prepared.

Restrooms
Both the men's and women's restrooms have hot and cold running water, showers, heat, and electricity. In addition, there are two outhouses on site, which we encourage all visitors to use as a way to conserve water.

Classrooms, Library
Hancock has several buildings used as classrooms for group discussions, special projects, and pre-classes before students depart for the field. These labs house a variety of equipment from microscopes to videos, as well as accessible fossil, rock, plant and animal specimens. The Hancock library has many natural history texts and field guides.

First Aid Cabin (Pill Hill)
Pill Hill is our first-aid cabin and is fully stocked for minor first-aid treatment. Please read the section on medical emergencies. To retain an area for students to sleep if they are ill, it is not available as housing.

Lapidary Shop (Pete’s Place)
Many groups like to take advantage of the lapidary (rock polishing) equipment to polish thunder eggs that they have brought to camp. We view it as an instructional activity and schedule it as one of a group’s Interest Group choices. For safety reasons, rocks are not cut on site by groups; groups must purchase pre-cut rocks. If you wish to buy thunder egg halves, they can be purchased from Richardson's Rock Ranch near Madras, OR (1-800-433-2680). If you would like to buy them from Hancock, they are $2 per half. There is a $1.00 per thunder egg half fee for use of equipment. Also, because the machinery requires a constant stream of cold water to counteract heat from friction, the activity is limited to programs that occur from **April 15 through October 15.**

SENDING MAIL TO HANCOCK FIELD STATION:

**Hancock Field Station only receives mail three times a week: Monday, Wednesday, and Friday.** We recommend that parents send mail to the camp on the Friday before the program. This will ensure that the mail arrives while the program is in progress. A return address will guarantee a return if the mail arrives late.

Student's Name, Group Name
Hancock Field Station
39472 HWY 218
Fossil, OR 97830

Telephone: To reduce disruption and to maintain an immersive learning environment, parents are discouraged from phoning students at camp and students are restricted from calling home unless there is an emergency, or it is pre-arranged with the teacher. Specific site contact information is available from your group leader. **In the event of an emergency**, Hancock’s phone number is 541-489-3233. There is no cell phone service at Hancock Field Station, but there is a pay-phone in the dining hall.
HEALTH AND SAFETY

Parents release their students to the schools during OMSI programs. As a result, teachers/group leaders and chaperones/counselors are responsible for all medical issues. OMSI Instructors have Wilderness First-Responder first aid, American Red Cross CPR and Life Guard training and certification. They carry first aid kits in the field, and are available for advice. However, they are not authorized to perform or assist in procedures beyond basic first aid. This section describes in detail how to handle different situations.

One teacher/adult must be designated as the “health officer” who is responsible for collecting and reviewing the Health and Medical forms, clarifying any medical issues and concerns, making a list of issues and concerns for OMSI, discussing them with the Camp Manager, and dispensing medications. This person is also responsible for making decisions regarding emergency medical services and transporting participants to medical facilities, if necessary. If medical care is given to a student, the health officer is responsible for contacting the parents for permission, and for updating the parents regularly for the duration of the program.

The health officer makes a list of which students are taking which medications at which times. S/he keeps all medications in his/her possession (ideally in a locked box) and assumes the responsibility of dispensing the medications to the students when needed. In the event that medications are needed when a student is off site or in the field, the health officer designates a chaperone to dispense the medications to the correct students at the proper times. If an over-the-counter (OTC) medication is deemed necessary (i.e. a student has a headache, upset stomach, diarrhea, etc.), the health officer is responsible for dispensing the medication and informing the parents of the situation. OMSI might have limited quantities of common OTC medications, but we strongly suggest you bring a supply.

If a minor injury or illness occurs on site, the health officer is responsible for treating and monitoring the situation. Examples include cuts and scrapes, blisters, slivers, headaches, vomiting, and other common first aid situations. OMSI staff will advise and provide materials. If a student cannot participate in an activity, the health officer, or a chaperone/counselor chosen by the health officer, is responsible for monitoring and caring for the student during the activity.

If a minor injury or illness occurs off site or in the field, OMSI staff will preliminarily treat and stabilize the situation. Upon returning to the site, the health officer will be given full responsibility to further treat or monitor the patient’s condition.

If an emergency occurs on site, the health officer is responsible for making decisions regarding emergency medical services (i.e. whether to call an ambulance or Air Life or to transport the student to the hospital). If the group does not have a member who is adequately trained to stabilize an injured participant, OMSI staff will stabilize the patient while the health officer determines the emergency medical service plan. OMSI staff will advise and provide materials.

If an emergency occurs off site or in the field, OMSI staff will preliminarily treat and stabilize the situation. They will determine if the patient can be moved or return to the site. They will relay this and all other pertinent information to the health officer, who will determine the emergency medical service plan.

If a student’s parent/guardian is on site (as a chaperone/counselor), s/he will assume primary responsibility for the health and safety of the student in lieu of the health officer.

If a student must be transported to a medical facility and an ambulance or Air Life is not used, it is the health officer’s responsibility to transport the student. For this reason, we strongly suggest that a separate vehicle is brought to camp if buses or other transportation is not scheduled to remain on site for the duration of the program. If a separate vehicle is not available and OMSI vehicles must be used, the group will be charged for use of the vehicles at $0.75 per mile.

Children with diabetes or other serious conditions needing medication or special care should have a parent or personal assistant accompany them who is knowledgeable of the dynamics of the condition and carries/dispenses necessary medication. It is the health officer’s responsibility to arrange for caregivers to accompany students in these situations and to regularly check in with the participants to see that things are going well. Caregivers are required to be present at all activities in which the students are participating; if a student cannot participate in certain activities, the caregiver is responsible for supervising the student. The Camp Manager or Program Coordinator can suggest alternate activities or projects related to the camp program for the caregiver to perform with the student.

If you have any questions or concerns about these or any other health, safety, and emergency procedures, or if you need advice about specific situations, contact the Camp Manager at least two weeks before the program.
FINDING HANCOCK FIELD STATION

From Portland via Mt. Hood
Take HWY 26 past the Mt. Hood area to HWY 216. Turn left on HWY 216 to 197. Turn right and continue through Maupin and across the Deschutes River Bridge. Take a sharp left onto Bakeoven Road. Follow Bakeoven Road to HWY 97. Turn left on HWY 97 to Shaniko. In Shaniko, turn right on HWY 218 and follow it through Antelope, over the John Day River toward Fossil.

From Portland via the Columbia River Gorge
Take I-84 east to Biggs Junction. Turn right onto HWY 97 south to Shaniko. In Shaniko turn left onto HWY 218 and follow it through Antelope toward Fossil.

From Eugene, Salem, and Albany
Proceed to Sisters on HWY 126 to Redmond. In Redmond, turn north on HWY 97 to the junction of HWY 293. Turn right on HWY 293 to Antelope and Fossil. At Antelope, turn right on HWY 218 toward Fossil.

From Antelope
Drive 12 miles over the grade to the John Day River bridge. Cross over and go eastward 2.0 miles to the Hancock Field Station driveway. There will be a large sign on your left. Proceed 1/2 mile into camp.

From Fossil
Go south then west on HWY 218 for 17 miles. You will see the Hancock Field Station sign on the right one mile after the Park Service Wayside. Proceed 1/2 mile into camp.
OPTIONAL INSTRUCTIONAL/REST STOPS

CENTRAL OREGON

Headwaters of the Metolius River: Restrooms and geologic/scenic stop; 12 miles northwest of Sisters, off of HWY 20.

Lava Lands Visitor Center: USFS geologic interpretive center, picnic area, restrooms; 12 miles south of Bend.

High Desert Museum: Extremely high quality natural/cultural history museum; 8 miles south of Bend on HWY 97. Group rates available. Please call for reservations and current prices.

Crooked River Gorge Wayside: Restrooms and canyon overlook (supervise students with care); 8 miles north of Redmond on HWY 97.

Richardson Recreational Ranch: Private thunder egg and mineral collecting locality with museum. Thunder eggs may be purchased for polishing at the field station. Located 22 miles northeast of Madras off HWY 97.

MT HOOD

Government Camp Wayside: Restrooms and Mt Hood view.

Bear Springs Campground: Restrooms, picnic tables, water, beaver pond, Douglas Fir / pine forest; 7 miles after turnoff onto HWY 216 from HWY 26.

Deschutes River Access Road: Turn left at sign for access road after turning left onto Bakeoven Road (after the bridge in Maupin); go about 2 miles down road. Outhouses and picnic tables located on banks of river.

Shaniko: Formerly the biggest sheep and wool shipping center west of the Mississippi, now a sparsely populated ghost town. About 2 miles from junction of HWY 97 and Bakeoven Road. Picnic tables.

Clarno Unit, John Day Fossil Beds National Monument: Less than a mile past the Hancock Field Station sign. Outhouses, picnic tables, and Trail of the Fossils. A good place to eat and explore, if you have arrived earlier than scheduled.

COLUMBIA RIVER GORGE

Multnomah Falls: Trail to falls (careful supervision of students), restrooms, picnic tables, and spawning salmon in season; 30 miles east of Portland on I-84.

Bonneville Dam: Fish hatchery, large sturgeon ponds, restrooms, and picnic tables; 41 miles east of Portland on I-84.

Cascade Locks: Historical and maritime museum, restrooms, and picnic tables; 44 miles east of Portland on I-84.

Starvation Creek Rest Area: Restrooms; 56 miles east of Portland on I-84.

The Dalles Dam: Columbia River interpretive center, in-season free railroad ride to dam, petroglyphs, fish ladders, sturgeon ponds, picnic tables, and restrooms; 87 miles east of Portland on I-84.

Maryhill Museum/Stonehenge: Art and Native American history museum, and replica of Stonehenge; 100 miles east of Portland on Washington side of Columbia River; access from Washington HWY 14 from bridge at The Dalles or Biggs.

Moro City Park: Historical museum, playground, and picnic tables; 18 miles south of Biggs Junction on HWY 97.

Through John Day

Clyde Hollariday State Park: picnic tables, restrooms, and geologic interpretive sign; 6 miles west of John Day on HWY 26.

Sheep Rock Unit, John Day Fossil Beds National Monument: excellent geologic and paleontologic interpretive center, and restrooms when Visitor Center is open; 3 miles north of junction of HWY 19 and HWY 26. Free. Blue Basin areas of park for geologic interpretation, hiking, and outhouses; located north of Visitor Center.

Shelton Wayside Park: Picnic tables and restrooms, in a forest setting; 12 miles south of Fossil on HWY 19.

Fossil beds in Fossil, OR: Behind Wheeler County High School; 17 miles east of Hancock Field Station. Note: there is a cost to dig at the site.

A NOTE ABOUT ICY ROADS

From early fall to late spring, it is possible to experience icy road conditions when driving to camp. Please be cautious when driving, pay special attention to portions of the road that are in shadow, and strictly follow posted speed limits.
PRE-PROGRAM CHECKLIST

____ (ASAP) Read over your confirmation contract, and make sure all of the information is correct. If any information is in question, please contact the OMSI Program Registration Office at 503.797.4661 or register@omsi.edu.

____ (ASAP) Arrange for chaperones to cover student cabins.

____ (ASAP) Make sure you are familiar with the information in both this packet and the Outdoor School Policy Packet. If you have any questions about the curriculum or policies, please contact the Program Coordinator at 541.489.3233 or hancock@omsi.edu.

____ (ASAP) Make sure chaperones have a copy of the Outdoor School Policy Packet.

____ (ASAP) Make your transportation arrangements.

____ (1 MONTH PRIOR) Inform Program Coordinator of final group numbers. Please see confirmation contract for policies regarding cancellation and changes to attendance numbers after this deadline.

____ (3 WEEKS PRIOR) Contact Program Coordinator about programming.

____ (3 WEEKS PRIOR) Make copies of pages 1-8 of the Policy Packet to send home with each participant.

____ (3 WEEKS PRIOR) Have a meeting with all chaperones/counselors to discuss program, and review entire policy packet with them.

____ (2 WEEKS PRIOR) Choose a "health officer" to be responsible for all medical concerns at camp.

____ (2 WEEKS PRIOR) Let Program Coordinator know if there are any students with specific dietary restrictions/preferences.

____ (2 WEEKS PRIOR) Divide students into instructional and/or field groups (about 12-15 students).

____ (2 WEEKS PRIOR) Assign cabins for boys and girls, including chaperones and teachers.

____ (1 WEEK PRIOR) Make a copy of the Field Notebook for each student.

____ (1 WEEK PRIOR) Make sure medical forms for each student, chaperone, teacher, and counselor have been completely filled out and returned.

____ (ARRIVAL DAY) Please make sure that all students bring a lunch for the first day of the program.

Thank you for choosing Hancock Field Station. We know your visit will make memories that will last a lifetime!