Olympic Park Institute

FIELD SCIENCE CURRICULUM INFORMATION

Olympic Park Institute provides students with unique educational opportunities that take advantage of the rich natural wonders of Olympic National Park and the skills and energy of our staff. We create an educational environment that engages students in active learning and complements classroom studies. We use an inquiry-based learning approach to involve students in interdisciplinary study of the region's ecology.

Olympic Park Institute educators facilitate a variety of field and laboratory activities. Small study groups (averaging 12-14 students) explore, observe, and discover the natural world. Students develop inquiry projects that help them understand the process of science. The academics are enhanced by activities that encourage cooperative learning. Our location provides immediate access to natural "classrooms:" old growth forests, glacial lakes, and pristine watersheds. The area's wild coastlines and stunning alpine region are nearby and allow additional field trip opportunities.

Content

Olympic Park Institute's field science education balances the need for science content with process skills such as observation, formulation of hypotheses, communication and analysis. Teachers determine the focus of their students' experience by choosing one of four curriculum tracks:

- Forest Ecology

  Students gain an understanding of the components and intricate interconnections of forest ecosystems. Olympic Park Institute is located in one of Olympic National Park's temperate old growth forests. As students explore among the trees, they investigate their surroundings to learn about the variety of plant and animal species and their interrelationships. Our microscope and "skins & skulls" laboratories provide opportunities for detailed, hands-on discovery of soils and animal adaptations.

- Watershed Science

  Students learn about the structure and function of aquatic ecosystems and the role of water in terrestrial systems. Students enjoy a variety of field- and lab-based experiments and activities that can include: water quality studies, modeling a watershed's natural and human-built features, investigating diversity in the marine inter-tidal zone, and exploring a riparian zone.

- Earth Sciences

  Students engage their science process skills and discover why this region (and their home community) has developed over geologic time to have its unique character. Topics can include: plate tectonics, geologic time, the rock cycle, erosion, glaciation, soil formation, primary and secondary succession and other processes. Students construct the story of how the Olympic Mountains were formed and investigate interconnections among biotic and abiotic systems (the rainshadow effect, for example). The soil lab, modeling experiments, and fossil casting complement an array of hands-on outdoor experiences.

- Marine Science

Students will learn how their actions affect the world ocean, no matter their distance from it, and how in turn the ocean affects all of us. In addition to in-depth study of coastal habitats, from sandy beaches to rocky shores to muddy tide flats, students will have the chance to examine the ocean through a variety of lenses. Whether exploring the whole watershed from our campus on Lake Crescent or conducting hands-on investigations at one of our many coastal field sites, students will come face to face with critical marine issues. They may never look at the ocean the same way again!

- Elwha River Dam Removal

Students participate in monitoring an impressive river ecosystem during the removal of the two Elwha River dams. Upon removal of the dams, the resulting watershed restoration project will be the largest in human history. Students will spend at least one day off-campus visiting and collecting data at various monitoring sites in the Elwha River watershed, integrating student thought and work into a larger research effort. This field trip will be supplemented by program days on Barnes Point and Lake Crescent that focus on the necessary procedures and skills needed to conduct an inquiry-based learning project. Overall, exposure to such an historic event and important research is grounds for sparking student engagement in the process of science and becoming a responsible and informed citizen.

Olympic Park Institute is working with teachers to support their changing needs. Our curriculum is aligned with state and national standards in its use of inquiry methods to engage students in academic studies that connect their learning to real-world science. Olympic Park Institute educators are versed in the evolving Grade Level Expectations, and tailor programs to enrich classroom work.

Teaching Methodologies

Olympic Park Institute staff are trained in three overarching approaches that are infused into field science education.

Inquiry-based Learning: Through active exploration, students make observations, ask questions, formulate hypotheses, and discuss theories. Students develop and implement their own research projects while at Olympic Park Institute and develop skills that apply across disciplines and encourage students to become active and engaged learners.

Thematic Teaching: Research shows that learners function at a higher level when activities link together. Olympic Park Institute designs content around daily themes, allowing for scaffolding and contextualized learning.

Teaching to the Multiple Intelligences: The program is interdisciplinary and the series of activities are designed to address multiple methods of learning.

Assessing the Impact

Olympic Park Institute is committed to enhancing educational outcomes. We conduct formal assessment of the program's impact on students, teachers, and schools. We continually refine our curriculum to reinforce classroom performance and develop students' sense of their role in the environment.

OTHER CURRICULUM INFORMATION

CURRICULUM DEVELOPMENT:
During the planning of your visit to Olympic Park Institute, you will convey your curriculum desires to the Program Manager by filling out the PLANNING QUESTIONNAIRE and emailing it to Olympic Park Institute five weeks prior to your program's start date. The form has space for you to request your curriculum track, pick your evening presenters and your off-campus field trip (for five-day programs). Any specifics regarding the program can be relayed to the Program Manager during your pre-trip phone call that will happen about three weeks before your program begins.

If during your program you wish to see slight adjustments in the curriculum and its instruction, your group's Lead Educator and the Education Manager will be on hand to accommodate you.

CANOEING – Lake Crescent offers an excellent opportunity for canoeing, weather permitting. At Olympic Park Institute, we own two large canoes (Montreal and Salish in style) that can each accommodate an entire instruction group. These large canoes are incredibly stable, and allow for Educators to continue their lessons out on the water. The boats also provide an excellent group challenge. Groups that are bringing a large number of students for three days are encouraged to not request the canoes, because time constraints make it difficult to ensure that all students will get a chance to paddle these boats.

MOUNT STORM KING – Many groups enjoy hiking up neighboring Mount Storm King during their visit. This hike is about 4 miles round trip, however due to the elevation gain it often takes groups most of a day to complete the hike. The hike allows each instructional group to experience a demanding physical challenge, but does limit the amount of instructional time that day. If you are interested in your group climbing Mount Storm King (or doing another nearby challenge hike), please inform the Program Manager by including it on your PLANNING QUESTIONNAIRE form.

EVENING PROGRAMS:
In addition to choosing a curriculum track for your visit, you will also work with the Program Manager to select your Evening Programs. Current options for these include:

Guest Presenters
Elaine Grinnell – S'Klallam Tales: A Member of the Jamestown S'Kallam tribe, Elaine delights both the young and old with great stories. Elaine uses traditional baskets and drums to let us into the lives of a S'Kallam tribal member.

John Cornish – Geology Rocks!: John knows how to wow your students with his amazing rock, fossil and crystal collection. Every rock becomes a treasure after this evening program. John is unparalleled at instilling in students a passion to learn about and follow their interests. John covers the rock cycle and geology of the Olympic Peninsula using unique fossils and various crystals.

Alice and Dunbar Susong – Adventures in National Parks: Alice Susong and her husband Dunbar spent over 30 years living in National Parks where Dunbar worked as a Park Ranger. This couple tells stories that bring down the house, with sing-alongs and unexpected twists to some real adventures in some of the most important natural places on Earth. You'll absolutely love these two!

Field Science Researchers: Olympic Park Institute partners with several Government (National Park) and non-government organizations that do research in and around Olympic National Park. With enough advance notice we may be able to set up a program with a researcher. Topics could include but are not limited to Bears, Fish, Owls, Marine Environments, and Climate Change. These evening programs are best suited to High School students.

Educator-Led Evening Programs

Welcome to the Olympics – This first night program overviews the ecological areas of the Olympics, and reviews the schedule of the upcoming week with some welcome, get-to-know-you-activities. This EP is great for groups that arrive in the evening.

Olympic Park Institute Town Meeting – During these public forum programs, a local and relevant environmental issue is considered and discussed in a value-fair manner. Students learn some natural and social history on the topic and then divide into groups that represent different perspectives on the issue at hand. Small groups formulate their position on the topic and present their platform to the rest of the groups, with a bit of time for questions. Skills in collective decision making and critical thinking are developed. Recent topics include: Elwha dam removal, reintroduction of wolves to Olympic National Park, Makah Whaling, and land-use decisions in a school's home community.

Night Hikes – In their instructional groups, students explore and appreciate the nighttime. Topics may include nocturnal adaptations, astronomy and bravery. (available September 15 – April 1)

Stayin' Alive – (available April 15 – August 31) This activity allows students to take on the roles of herbivores, omnivores, and carnivores, each trying to survive. They search through their habitat for the food and water they need, while hunting and being hunted by each other. This activity empathetically teaches about the interdynamics of food webs and predator-prey relationships in a natural community.

History Skits – Costumed students put on mini plays in a chronological order exploring the events in the history of the Olympic Peninsula.

Legend Skits – This evening program starts with a legend told. Then students are assigned to groups, which come up with their own legend. Well-dressed students, usually in a humorous manner, tell us new legends of how various things occurred to the natural world.

Form Line Drawing – Interested in exploring the artistic techniques developed by the Northwest Coastal Native Americans? Students spend an evening learning about the history and studying the technique of Form Line Drawing and then sharpen their pencils to create their own masterpiece.

Plenty-o-fish: An activity that puts students in the center of resource management and bio-monitoring. Students will take on the roles of fishermen/women that are a part of the fishing industry, and/or the scientist that monitor the fish stock. An active program that helps student think critically from multiple angles of the resource management.

Marine Mammals: Students have the opportunity to learn about the various Marine Mammals and how they are adapted to their life styles in unique ways. Student also learn about some of the threats that these creatures face in today's world.

Closing Ceremonies/Campfire – These are evenings with song stories and reflections around a campfire, weather permitting. Our staff is excellent at targeting your student's age group with the appropriate material. This program is popular with groups for their final night at Olympic Park Institute.

OFF CAMPUS FIELD STUDIES

With five-day Field Science groups, we usually take a day long, off-campus field trip to one of the regions amazing ecosystems. Field trip sites include:

Hurricane Ridge (1hr, 10 min each way from Olympic Park Institute) – The road to Hurricane Ridge climbs up to almost 5000 feet and drops students off at the Visitor's Center that provide amazing vistas into the mountainous interior of the Park. As student's hike along the ridge, they can study mountain formation, sub-alpine forest ecology, and see an entire watershed from above.

Tongue Point / Salt Creek (35 min each way from Olympic Park Institute) – When the moon works in our favor, Tongue Point offers outstanding tidepooling options for students. Tongue Point is located on the Straight of Juan de Fuca. Check with the Program Manager regarding tides during your stay.

Feiro Marine Life Center: (35 min each way from Olympic Park Institute)- A great option if tides don't work in our favor. The Feiro offers students the opportunity to see the tide pools close up, as well as learn about plankton. Check with the Program Manager for more details on what your group can do.

Dungeness Spit (1 hr each way from Olympic Park Institute) – At 4 ½ miles long, Dungeness Spit is the world's longest natural sand spit. As student's hike a portion of the spit, they learn about the process of spit formation, watch for migrating birds and look out on the Strait of Juan de Fuca for marine life.

Hoh Rain forest (2 hrs each way from Olympic Park Institute) – While it's a long haul out to the Hoh Rain forest, this area is stunning and fascinating. The biomass per square acre in the dense Rain Forests of the Olympics (as much as 500 tons per acre) is the highest density of life anywhere on the Earth.

Neah Bay and Cape Flattery (2 hrs each way from Olympic Park Institute) – This destination is another long trip from Olympic Park Institute, but gives students an excellent experience in understanding the native cultural history of the region. A trip to Neah Bay includes a visit to the Makah Cultural Museum and Cape Flattery (the most Northwest point in the lower 48 states).

Sol Duc Valley (45 min each way from Olympic Park Institute) – The Sol Duc Valley is relatively close to Olympic Park Institute and offers students the experience of witnessing powerful Sol Duc falls, watching local salmon spawn (in season), hunting for diverse mushrooms (late fall) or doing an intense hike up to mountain lakes (6 miles round trip).

Elwha Valley (45 min each way from Olympic Park Institute) – The Elwha Valley offers longer hikes with less elevation change in the beautiful forests of Olympic National Park. The valley features abandoned homesteads and intense rapids at locations like Goblin's Gate. The Elwha Valley is also home to two dams which have been designated for removal by the US Congress. This removal will create large changes to the system and will be very interesting to witness and study in the coming years. Groups involved in the Elwha Science Education Project will visit numerous sites in the Elwha Valley. Sites can include: Krause Bottom/Goblin's Gate, both dam sites, the state fish hatchery, and the river mouth.

Washington Coast (1-2 hrs each way from Olympic Park Institute) – There are a variety of coastal shores that we can access from Olympic Park Institute. Some such as Rialto allow for immediate access to the beach to maximize time on the coast. Others, such as the Ozette Trail Loop, are longer hikes that take students though the coastal forest and give great opportunities to learn about forest succession. Based on the specific beach we visit, curriculum can include information on wetlands, bogs, as well general marine geology and ecology.

Pre-Trip Visit

A pre-trip visit by Olympic Park Institute staff is designed to prepare students physically, academically and emotionally for the Olympic Park Institute experience. It also begins establishing a connection between the student's home communities and those that they will study at Olympic Park Institute. The focus of this visit can depend on the curriculum track you have selected for your upcoming field science study or it can be a general outline of life at Olympic Park Institute. Pre-trips can vary in length from a ½ hour-2 hours. If you are interested in scheduling a pre-trip visit, please contact the Program Manager for available dates.

General Information

- Olympic Park Institute Themes – Students understand the general concepts they will explore while visiting Olympic Park Institute.
- Be Prepared – We cover the essentials of what is needed for life at Olympic Park Institute (clothing, journals, water bottles). This portion of our pre-trip visit may involve students putting on a fashion show demonstrating how to dress and how not to dress while at Olympic Park Institute.
- Leave No Trace – Our Educators discuss trail rules and ways to respect the environment.
- Let's look at the Map – Students locate their community on our satellite maps and compare that to the location of the Olympic Park Institute campus.
- A Typical Day – Educators provide students with answers to all the typical logistical questions from the time you wake up to the time you go to bed. Covers questions like: What time are meals? What do we eat? When is free time? How long are we in the field?
- National Parks – Students are introduced to the concept of National Parks and consider why they are important.

Inquiry Based Learning

- M&M Science – Our Educators lead students through the scientific process using M&M's. This will allow the students to become familiar with the steps of: OBSERVATION, HYPOTHESIS, EXPERIMENT, CONCLUSION

Curriculum Specific

- Vocabulary – Students are exposed to some of the vocabulary words that will be used during their field science experience.
- Local geology, forest ecology or watershed focus – Students explain what they know about their local area as it relates to one of these topics. Then the students form a hypothesis as to what they think Olympic Park Institute will look like in comparison to their school/community.
- Skins & Skulls – Our skins and skulls lab is highly portable and can give a great hands-on example of what students may study while at Olympic Park Institute. We can bring a few specimens from our lab for students to examine in class and have a mini lesson on the different wildlife that live in Olympic National Park.

Post-Trip Visit

A post-trip visit is designed to extend the information and experience that the students gained while visiting Olympic Park Institute. Below is a list of activities to choose from, each of which is designed to incorporate the concepts learned while participating in our field science program. Post-trip visits typically allow for Educators to spend approximately 2 hours with students in their classroom.

Olympic Park Institute Revisited

- A review and extension of concepts learned in the curriculum track explored during your visit.
- A continuation of research began at Olympic Park Institute.
- Group activities demonstrating environmental trends that can be discussed and graphed in the classroom.
- Revisit the concept of zero waste and discuss how it can be achieved at school.
- Open or close the visit with their favorite Olympic Park Institute songs.

Environmental Issues

- Olympic Park Institute Educators can conduct a Town Meeting just like the evening program offered at Olympic Park Institute. (see description above)

Stewardship Action Plan

Students brainstorm and decide ways that they can be positive stewards of their home, school and community. A stewardship project is designed to encourage students' civic duties as citizens. Olympic Park Institute Educators work with the group to develop:

- A project outline
- Methods in which to achieve their goals
- Guidelines for moving the project towards completion
- A challenge to share their results with the community and with Olympic Park Institute

Community Connections

Students discuss nature habitats in their local communities such as local parks, streams, beaches, air, and apply what was learned at Olympic Park Institute to their surroundings. Students grow in their understanding of the dynamics of their local environment and consider their role within it. Some activities that can be conducted include:

- Stream study on a local stream or creek
- Plot study in a local natural area
- An inquiry based learning (IBL) project that can be performed at the school and compared to what the students experienced or learned about the ecosystems at Olympic Park Institute.

A TYPICAL DAY AT OLYMPIC PARK INSTITUTE

6:30 -7:15 AM WAKE UP

Students rise each morning and walk out of their cabins into one of the most stunning natural environments on the continent. They will use this time to shower, dress and otherwise prepare for their day. Fresh coffee is prepared every day at 6am.

7:15-8:45 AM BREAKFAST

The dining hall in Rosemary Inn seats 73 students and adults. Breakfast is served in two shifts, one at 7:15 and one at 8:00, and typically lasts from 30 to 40 minutes. We work education on food and natural resources in to our meals, so come to breakfast prepared to start your learning!

9:00-9:15 AM MORNING MEETING

Students, teachers and chaperones meet in the Gazebo prepared for the instructional day. The Program Supporter facilitates activities and discussion that energize the students and complement the education that will take place in the field.

9:15-4:00 PM INSTRUCTIONAL DAY

During this time you will be with your hiking group of up to 15 students. Depending on your program, students may find themselves conducting research experiments of their own design, teaching their peers about an old-growth forest, participating in a stream-biomonitoring project, studying soil invertebrates under a microscope, hiking up a mountain, analyzing the skins and skulls of Olympic mammals, out on a lake in a canoe, exploring tidepools, or snowshoeing in the sub-alpine at Hurricane Ridge. Lunch is distributed to the hiking groups and is typically eaten out on the trail. The Educators provide the activities and curriculum, chaperones assist in group management and with the behavioral needs of individual students.

4:00-6:00 PM RECREATION TIME and THE Olympic Park Institute STORE

This is a time students can use to shower and change, work on journals, or play in the field. A school may also use this time for structured learning activities. Teachers and chaperones supervise during this time. If you are on the early dinner shift, you will have additional recreation time after dinner. The Olympic Park Institute will be open Tuesdays and Thursdays from 4:30-5:30 in the Cedar Room within Rosemary Inn.

5:00-7:00 PM DINNER

Dinner, like breakfast, is served in two shifts, one at 5:00 and the other at 6:00. Dinner usually takes slightly less than an hour. The food at Olympic Park Institute is nutritious, plentiful and "kid-friendly." Meals such as teriyaki chicken, burrito bar, penne pasta with marinara sauce and the ever-popular pizza frequently appear on our menu.

7:30-8:30 PM EVENING PROGRAM

Evening Programs complement the material being presented during your field day. These large-group programs are engaging, educational and inspiring. You may have a chance to hear Northwest Native American stories from a S'Klallam elder, hold a town meeting on a current environmental issue, or take a night hike.

8:30-9:30 PM OFF TO BED

This is the time for students to use bathrooms, change clothes, and brush their teeth. Older students may use this time to study in the dining room or take some quiet time in the cabins. Teachers and chaperones supervise their students during this time. Lights out is typically 9:30.