

BACKPACK THE PARKS

Expeditions in Education

OLYMPIA



Backpack the Parks!



At Expeditions in Education, we believe that learning extends far beyond the classroom walls. That's why we're thrilled to introduce our "Backpack the Parks" initiative, designed to ignite students' curiosity and love for the great outdoors while fostering a deeper understanding of our national parks.

With "Backpack the Parks," educators have the unique opportunity to curate and pack 8 engaging activities into backpacks, making it easier than ever for students to check out and explore the wonders of our national parks. From hands-on science experiments to wildlife scavenger hunts, each activity is carefully crafted to immerse students in the beauty, history, and natural wonders of these treasured landscapes.

Join us in empowering the next generation of park enthusiasts and conservationists as they embark on unforgettable learning adventures in our nation's most cherished natural spaces. With "Backpack the Parks," the journey to discovery begins with the turn of a backpack strap, and the possibilities for educational exploration are endless.

Backpack the Parks!



Instruction

Step 1: Ask for Donations of Backpacks and Clean Them Up

- Reach out to parents, local businesses, or the school community to request donations of gently used backpacks.
- Inspect the donated backpacks for any damage or excessive wear.

Step 2: Print the Activity Cards and Laminate

- Prepare activity cards that detail each of the educational activities you plan to include in the backpacks.
- Print these activity cards on durable cardstock paper.
- Laminate the activity cards to protect them from wear and tear during use.

Step 3: Put Cards on Rings

- Hole punch each laminated activity card.
- Use rings or zip ties to secure the cards together, creating a set of instructions for each activity.

Step 4: Purchase or Collect the Materials Needed for the Activities

- Create a list of materials required for each activity, as outlined in your activity plan.
- Gather all the necessary materials for each activity. This may include items such as magnifying glasses, sketchbooks, rocks, clay, flashlights, and more.

Step 5: Put Materials in Ziplock Bags

- Organize the materials for each activity into separate ziplock bags.
- Ensure that each bag contains all the necessary materials, making it easy for students to access and use them.

Step 6: Attach the National Park Tag to the Outside of the Bag

- Create or print a National Park-themed tag that identifies the backpack as part of the Backpack the Park program.
- Attach this tag securely to the outside of the ziplock bag or backpack.

Olympic National Park

Activity 1: Biodiversity Exploration

Materials:

- Field notebook
- Pen

Instructions:

1. Research the different ecosystems found in Olympic National Park, such as the rainforest, meadows, and coastal areas.
2. Create a written or illustrated report about the plant and animal species that inhabit these ecosystems based on your research.

Activity 2: Create a Geological Timeline

Materials:

- Pictures or drawings of rocks and minerals found in the park

Instructions:

1. Study pictures or drawings of rocks and minerals found in Olympic National Park.
2. Create a classroom display showcasing these geological specimens and arrange them in chronological order based on their geological age.

Activity 3: Weather and Climate Observation

Materials:

- Thermometer
- Barometer
- Anemometer (wind gauge)

Instructions:

1. Simulate weather and climate observations in the classroom by recording daily temperature, barometric pressure, and wind speed and direction.
2. Maintain a weather journal to track patterns and changes over time.
3. Compare the weather happening in your area to Olympic National Park.

Activity 4: Build a Wildlife Food Web

Materials:

- Pictures or drawings of local wildlife
- Paper
- Colored pencils or markers

Instructions:

1. Research the wildlife species in Olympic National Park and their diets.
2. Create a food web diagram using pictures or drawings of these species, and label each with its role in the ecosystem.



Olympic National Park

Activity 5: Marine Life Observation

Materials:

- Pictures or drawings of marine creatures
- Magnifying glass

Instructions:

1. Simulate marine life observation by studying pictures or drawings of marine creatures found in tidepools along the coastline.
2. Use a magnifying glass to examine details of these creatures as if you were observing them in a tidepool.

Activity 6: Leave No Trace Pledge

- Index Cards or Google Slides

Instructions:

1. Learn about Leave No Trace principles and their importance in preserving natural spaces.
2. Create a personal Leave No Trace pledge card for responsible outdoor ethics within the classroom context.

Activity 7: Indigenous Plant Use

- Plant identification guide
- Notepad and pencil

Instructions:

1. Explore Indigenous plant use by studying a plant identification guide.
2. Document the names, uses, and interesting facts about Indigenous plants within the classroom setting.

Activity 8: Build a Miniature Rainforest Ecosystem

- Clear plastic container
- Potting soil
- Miniature plant replicas or models

Instructions:

1. Simulate the creation of a miniature rainforest ecosystem within the classroom using a clear plastic container, potting soil, and miniature plant replicas or models.
2. Observe and care for the ecosystem as it develops over time.

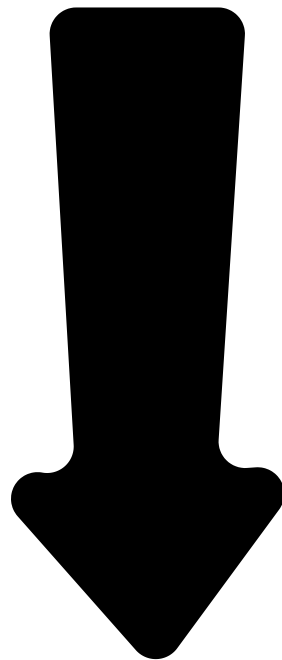
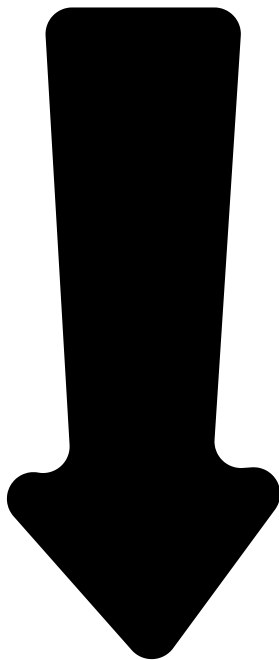


Activity Cards

Print on cardstock

Laminate

Put on rings



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BAG TAG BELOW!



**Olympic
National Park**

Backpack the Parks!

#ExploreTheParksWithUs

**"Pack Your Curiosity,
Explore Nature's Beauty!"**

www.expeditionsineducation.org

Leave No Trace

Protecting Our Outdoor Spaces

1. Plan Ahead and Prepare

Research the area you'll visit.

Bring the right equipment.

Check weather forecasts.

Know local regulations.

2. Travel and Camp on Durable Surfaces

Stick to established trails.

Camp at designated sites.

Avoid trampling on fragile vegetation.

3. Dispose of Waste Properly

Pack out all trash.

Use established restroom facilities.

Bury human waste at least 200 feet from water sources.

4. Leave What You Find

Don't pick flowers or disturb wildlife.

Leave rocks, plants, and historical items as you found them.

5. Minimize Campfire Impact

Use a camp stove for cooking.

Use established fire rings if fires are permitted.

Keep fires small and burn only small sticks and twigs.

6. Respect Wildlife

Observe animals from a distance.

Don't feed them human food.

Store food securely to prevent wildlife encounters.

7. Be Considerate of Other Visitors

Keep noise levels down.

Yield the trail to others.

Share popular spots.

8. Educate Yourself and Others

Learn about the environment.

Share Leave No Trace principles with others.

Lead by example.

Geological Timeline for Olympic National Park

1. Pre-Cambrian Era (Over 600 Million Years Ago):

- During this ancient time, the region that would become Olympic National Park was submerged beneath shallow seas, accumulating layers of sediment.

2. Mesozoic Era (251-65 Million Years Ago):

- Sedimentary rocks continued to accumulate.
- Marine fossils from this era, such as ammonites, can still be found in the park's sedimentary rocks.

3. Late Cretaceous Period (145-65 Million Years Ago):

- The Olympic Peninsula experienced tectonic activity, causing the uplifting of land.
- Sedimentary rocks were folded and faulted.

4. Paleogene and Neogene Periods (66-2.6 Million Years Ago):

- The landscape of the Olympic Peninsula underwent further uplift and erosion.
- The ancestral Olympic Mountains began to take shape.

5. Pleistocene Epoch (2.6 Million to 11,700 Years Ago):

- Glaciers advanced and retreated multiple times during ice ages, shaping the rugged landscape.
- Glacial activity carved deep valleys and fjords, including Lake Crescent and Lake Quinault.

6. Holocene Epoch (11,700 Years Ago to Present):

- The last glaciers retreated around 10,000 years ago, leaving behind the distinctive U-shaped valleys, cirques, and glacial moraines that define the park's landscape.
- Alpine meadows, temperate rainforests, and diverse ecosystems began to thrive in the park's varied climate zones.

7. Recent Geological Activity (Present-Day):

- Ongoing tectonic forces continue to shape the park's landscape, causing earthquakes and uplift.
- Erosion and sedimentation processes persist, impacting the rivers and coastal areas.

Weather -vs- Climate

Weather vs. Climate: Understanding the Difference

Weather: The Short-Term Atmosphere

Weather refers to the atmospheric conditions in a specific location over a short period of time, typically ranging from minutes to a few days. It encompasses the day-to-day variations in temperature, humidity, precipitation, wind speed, and atmospheric pressure. Weather is what we experience on a daily basis and can change rapidly. It's the reason we check the forecast before deciding what to wear or planning outdoor activities.

Key Characteristics of Weather:

1. **Short-Term:** Weather conditions can change from hour to hour and day to day.
2. **Local:** Weather forecasts are location-specific and can vary greatly even over short distances.
3. **Variable:** Weather can be unpredictable and is influenced by various factors, including temperature, humidity, air pressure, and atmospheric disturbances.

Understanding Weather with NASA:

NASA provides valuable resources for tracking and understanding weather. The agency's Earth-observing satellites, like the Geostationary Operational Environmental Satellite (GOES) and the Aqua satellite, continuously monitor Earth's weather patterns. These satellites provide real-time data and imagery, helping meteorologists make accurate weather predictions.

Climate: The Long-Term Climate Patterns

Climate, on the other hand, represents the long-term average of weather patterns over a much larger timeframe, typically 30 years or more. It provides a broader perspective of what we can expect in terms of temperature, precipitation, and other weather-related factors in a particular region over an extended period. Climate is what helps us categorize regions as tropical, arid, temperate, or polar.

Key Characteristics of Climate:

1. **Long-Term:** Climate patterns are stable over decades and centuries.
2. **Regional:** Climate is a regional or global phenomenon and is used to describe broader weather trends.
3. **Predictable:** While day-to-day weather can be unpredictable, climate follows more consistent patterns, allowing for long-term trend analysis.

Indigenous Plants

Indigenous peoples have a rich history of using native plants for various purposes in Olympic National Park and the surrounding regions. While I don't have access to specific resources or databases to provide a comprehensive list, I can offer some examples of indigenous plants commonly used by Native American tribes in the Pacific Northwest, which includes the Olympic Peninsula. These plants were historically utilized for food, medicine, shelter, and cultural practices:

1. **Salmonberry (*Rubus spectabilis*):** Indigenous peoples, such as the Coast Salish tribes, used salmonberry plants for their edible berries. The berries were eaten fresh, dried, or used in jams and preserves.
2. **Cedar (*Thuja plicata*):** The Western Red Cedar is often referred to as the "Tree of Life" by many indigenous groups in the Pacific Northwest. Cedar bark was used for making clothing, baskets, and hats, while the wood was used for canoes and totem poles.
3. **Camas (*Camassia quamash*):** Camas bulbs were an essential food source for Native American tribes like the Nez Perce. These bulbs were harvested, roasted, and eaten as a starchy root vegetable.
4. **Nettle (*Urtica dioica*):** Stinging nettle was used for making cordage, fishing nets, and clothing. It was also consumed as a nutritious green vegetable when cooked.
5. **Oregon Grape (*Mahonia* spp.):** Indigenous people used the roots of the Oregon grape for medicinal purposes. It was traditionally used to treat a variety of ailments, including digestive issues and skin conditions.
6. **Ferns (Various Species):** Edible ferns, such as the bracken fern, were foraged for their fiddleheads, which were cooked and consumed as a seasonal delicacy.
7. **Blackberry (*Rubus ursinus*):** Blackberry plants provided edible berries that were collected and eaten by indigenous communities in the Pacific Northwest.
8. **Sword Fern (*Polystichum munitum*):** Sword ferns were used for their fronds, which were woven into baskets and mats.
9. **Devil's Club (*Oplopanax horridus*):** While it has prickly spines, the inner bark of devil's club was used for medicinal purposes by indigenous peoples. It was used as a remedy for various ailments.
10. **Huckleberry (*Vaccinium* spp.):** Huckleberries, found in the park's montane forests, were gathered and eaten fresh or dried for later use. They were a valuable source of sustenance.

Hoh Rainforest

Flora: A Verdant Tapestry

The Hoh Rainforest is renowned for its luxuriant vegetation, where towering trees and dense undergrowth create a captivating green landscape. Some of the prominent plant species include:

1. **Sitka Spruce (*Picea sitchensis*):** Towering over 200 feet in height, Sitka spruce trees dominate the forest canopy, their straight trunks adorned with mosses and epiphytes.
2. **Western Hemlock (*Tsuga heterophylla*):** These graceful trees are commonly found alongside Sitka spruces, with needles that create a soft, feathery appearance.
3. **Bigleaf Maple (*Acer macrophyllum*):** Characterized by their enormous leaves, these maple trees provide shade and add diversity to the forest.
4. **Mosses and Lichens:** The Hoh Rainforest is draped in a rich tapestry of mosses and lichens, which thrive in the cool, moist conditions. The Hall of Mosses is a popular trail showcasing this lush growth.
5. **Ferns:** Various fern species, including sword ferns and lady ferns, carpet the forest floor.

Fauna: A Haven for Wildlife

The Hoh Rainforest is teeming with diverse wildlife, making it a prime location for nature enthusiasts and photographers. Some of the notable animals that call this forest home include:

1. **Roosevelt Elk (*Cervus canadensis roosevelti*):** The largest subspecies of elk in North America, these majestic creatures can often be spotted grazing in the meadows and clearings of the rainforest.
2. **Black Bear (*Ursus americanus*):** Black bears roam the forest, foraging for berries and other vegetation.
3. **Bobcat (*Lynx rufus*):** Elusive and seldom seen, bobcats are among the elusive feline inhabitants of the rainforest.
4. **Raccoon (*Procyon lotor*):** These masked bandits are opportunistic feeders and are known to explore the forest for food.
5. **Olympic Chipmunk (*Tamias amoenus caurinus*):** Endemic to the Olympic Peninsula, these small, agile rodents can be spotted darting among the trees.
6. **Banana Slug (*Ariolimax dolichophallus*):** These bright yellow slugs are an iconic part of the Hoh Rainforest's ecosystem.
7. **Birds:** The rainforest is a haven for birdwatchers, with species like the Pacific wren, varied thrush, and northern spotted owl gracing the forest with their presence.