

5th GRADE LEARNING EXPEDITION TOPICS

Teachers are invited to sign up for Learning Expeditions in a sequence that makes sense for their individual classes.

The Orientation Expedition is recommended as the first field visit of the year to give students a sense of expectations and to practice learning in the outdoors. If a class does not sign up for an Orientation Expedition, the morning of the first day will be an orientation, with the afternoon's topic adapted to fit into a shorter period of time.

Schools are encouraged to sign on for at least four Learning Expeditions, and as many as all twelve. Four gives some degree of regularity to the Expedition days, allowing students to build upon what they have learned and not see the outing as a disconnected "field trip." We hope you can join us for all 12!

FALL LEARNING EXPEDITIONS

- **Orientation to Muddy Sneakers and Field Study Introduction** – Students will learn basic safety procedures, including what to do in case of lightning, how to use the bathroom in the woods in a safe and low-impact way, how to use a compass, and how to evaluate the weather for oncoming conditions. The Orientation Expedition focuses on getting students into the mode of being field scientists and addresses use of evidence, models, and scientific explanations. Students will also make general observations of the plant and animal life around them, as well as discuss the cultural history of the place they are visiting.
- **A Square Foot of Ground (1.02)** -- Students will partner with a classmate and act as field scientists using the "square foot" approach. They will discover the biodiversity within a small area of earth and identify producers, consumers, and decomposers in the larger ecosystem they are studying. Identifying biotic and abiotic components of ecosystems around them will be a theme of the day.
- **Animal Habitats and Interdependence (1.05)** – Students will each choose an animal in the forest and will trace on foot its daily life. They will illustrate in their field notebooks how the animal acquires food and from what sources, where the animal drinks water, and where the animal's shelter is. Students will share their investigations with one another to create a web of life among themselves, illustrating the interdependence of all that lives in the forest.

EXPEDITIONS AVAILABLE IN FALL OR SPRING

- **Analyzing the Health of Ecosystems (1.01)** -- Students will take a close look at ecosystems within a body of water and a rotting log today. They will discuss and

determine the role of light, temperature, and soil composition in an ecosystem's capacity to support life (1.04). They will also do a study today that allows them to analyze the interaction of organisms within an ecosystem (1.05)

- **Erosion (2.05) and Human Impact in Nature (1.06 and 2.07)** – Students will spend the day examining waterways, figuring slope, and observing erosion patterns. They will discuss how the flow of water and the slope of land affect erosion. They will investigate what causes changes in landforms over time (water and ice, wind, gravity) and will observe examples around them (2.01). Students will also continue to think about ways that human development influences the rate of erosion, drawing upon their discussion of human development to pinpoint ways human development is detrimental (habitat reduction, pollutants, increased nutrients, invasive species) and ways it can be more sensitive to natural surroundings. Students will evaluate the impact of clearing land, planting vegetation, and building dams as means of altering a natural setting (2.07).
- **Getting Oriented in Space (2.06)** – Students will use models, topographic maps, compasses, and aerial photographs to analyze the land around them – identifying valleys, peaks, canyons, tributaries, meanders, rivers, and streams (2.03). Students will extend their observations of what's around them to make inferences about the features on maps they study of other places, recognizing deltas and flood plains.
- **Weather – Part One - Weather Patterns and the Water Cycle (3.02 and 3.03)** – Students will work as “professional meteorologists” today, becoming more adept at understanding temperature, wind direction and speed, precipitation, cloud cover, and air pressure. Students will learn to identify different cloud types and will discuss their relation to weather systems. Students will revisit the skills they acquired on today's expedition throughout the school year, creating a log of climatic patterns.
- **Weather – Part Two - Geography, Weather, and Climate (3.04, 3.06)** – Students will discuss how mountainous topography creates different weather patterns from coastal or plains topography. They will use their previous knowledge of weather patterns to illuminate their investigations and discussions. Additionally, students will use maps to explain how global atmospheric movement patterns affect local weather.

SPRING LEARNING EXPEDITIONS

- **How Does Nature Recycle? (1.07)** – Students will study nature's way of dealing with “waste” by conducting investigations of items humans might consider trash.
- **Motion (4.01, 4.02, 4.04, 4.05)** - Students will use waterways in the forest to study the motion of objects by following and measuring them over time. They will discuss motion as a force both seen and unseen and at work in many different contexts in nature.

Students will repeat their experiments to amass data and evaluate it, discussing and observing the effects of force, friction and inertia (4.05).

- **Simple Machines in Nature (4.03, 4.07)** – Students will work with concepts of pulleys, wedges, inclined planes, wheels, axles, screws, and levers to gain a better understanding of how simple machines make work easier. They will learn to hang “bear bags” using pulleys to keep food safe, and will experiment with other simple machines people use in the woods to ease their workload.
- **Field Study Culmination** – The final Learning Expedition of the year involves students choosing a topic to study and conducting their own data collection and analysis as an official scientist doing field work. Muddy Sneakers instructors will work with classroom teachers to help students choose topics that are relevant to school projects and topics studied in the traditional classroom.

We hope Muddy Sneakers shows both teachers and students the joy of learning outside! We aim to make learning fun, real, and applicable – enhancing the classroom experience for students and teachers alike.

Thank you for working with us.