

INVESTIGATION LIST FOR 4TH-6TH GRADES

Introductory Investigation:

Communities - The students will explore the concept of community; how members are interdependent and how community members satisfy their basic needs. They will learn about the air, water, and soil cycles, photosynthesis, and the food chain on a walk in the forest to specific communities. They will also discuss how people influence the communities and cycles around them.

Natural Science:

Swamp - A swamp is more than just water, plants and bugs. This investigation allows the students to find out about the various flora and fauna that live in the swamp and to discuss it as the stage in the evolution of a lake to a hard wood forest. Wetlands are important to Vermont's ecology and this investigation allows the students see why.

Lake - The lake community is explored and compared to the pond. People's role in the changing of these two biomes is seen through water chemistry tests, comparison of their plants and animals, and discussion of the causes and effects of eutrophication and acid rain.

Birds - Learn about the birds that live in or around Keewaydin by using your magnified eyes (binoculars) and your keen sense of hearing. You will learn about their songs, identification markings and habitats. How do birds meet their five basic needs? What role do they play in the forest community? How do they communicate?

Forest - In this investigation, students explore the forest community learning to identify local trees and different forest sites. Students look at the species composition and soil type to determine what local wildlife species might live at each site as well as discuss how natural and human influences can change the forest and how these changes impact local and global wildlife.

Watershed - This activity includes a discussion and demonstration of a watershed and its importance to decisions affecting land-use. The student's measure the flow volume of a particular watershed and calculate the number of people that could be supported by it. The present uses of a watershed are compared with the options available for future use.

Local History:

Water Power - While hiking along the Leicester River to discover and explore old mill and dam sites, the students will get a first-hand view of the way water was used as a source of power. The hike ends near a hydroelectric generating station and affords a comparison of today's energy sources with those of the past as well as the implications these changes have on our way of life.

Early American Industries - The students explore a site of an old industry in nearby Forestdale. By finding evidence and making observations, the students are able to figure out what the industry was and why it chose this particular site. The reasons this industry is no longer active are also discussed.

Pioneers - Early settlers en route to Vermont had to survive in the world and meet their needs with only what they could carry on their backs. This investigation allows students to participate in this process by making decisions on what to take and what to leave behind when preparing to embark into unknown territories.

Sawyers and Colliers - An exploration of 2 industries actively operating 150 years ago on Mt. Moosalamoo. Evidence of these activities can still be found. Using tools that sawyers used and building a small replica of a charcoal mound to create charcoal of their own, students will explore ways in which the older generations of Vermont met their basic needs. They will also learn about the impact these 2 industries had on the area.

Native Americans - Who were the first people in this area, how did they meet their basic needs, and in what ways did they impact their environment? The student's will learn how to build a fire with a bow drill, hunt with spears made from branches, and create cordage from the bark of a basswood tree.

Human Impact:

Endangered Species - Explore the precarious world of endangered species through activities and discussion of well-known endangered species of New England and the US. What are the causes of species' endangerment? Can it be prevented? Does it have a direct effect on human beings?

Populations - Students will consider various types of populations, factors that limit their growth, growth curves and the effect of the rapid growth of any population on the environment and its own health. Many people consider the increase in human population to be the greatest threat to the predicament of the global environment.

House Hazardous Products - Much of the hazardous waste in our landfills comes from our own homes. What products do we use regularly at home or school that are hazardous? What are some of the alternatives? Students will get the opportunity to create and use some safe products from common materials.

Footprint- In this investigation students will explore various ways in which we can measure our ecological footprints as they relate to water consumption, food and energy use, as well as finite resource consumption. Through a hands on approach students use graphs and calculate their own consumption levels so they can see some of the ways they, as an individual, impact the Earth.

Global Warming - Scientists are talking about something called "global warming". What is it? Why are we having global summits about it? What causes it? What will be some of the effects? Can we slow down the progress? Students will learn about this issue through discussion, demonstration and games.

Woodlot - The many values of woodlot are discussed in this investigation. Some of these are calculable, other are not. Students will measure the height and diameter of the trees on a sample woodlot, compute the rough monetary value of the woodlot, and make some decisions concerning the use of such an area.

Land-use Hikes:

General's Lookout and Pitch Pine: These investigations are exploration hikes on Mt. Moosalamoo that focus on land uses and their impact on the mountain. By encouraging the students to look for evidence of human activity, the investigation sharpens their awareness of the natural world as well as allowing them to interpret what they see.

Concluding Investigation:

Web-of-Life - Using role cards, the students form the various communities they have been studying during the week. Within each community, the interdependencies and the basic needs of living things are illustrated. The small communities then come together to form a global community to show the relationships between all communities. The effect of people living in a community is demonstrated through a skit involving choices made by typical young students in their daily lives.

Predator Prey Survival Simulation- In this large group activity, students assume the role of herbivore, omnivore, or carnivore. While out roaming our campus students will need to find a source of water and food all the time being aware that they themselves could quickly become a source of food for the next level of consumer. The challenge is to survive by utilizing whatever strategy you think an actual predator or prey would. In the end students are brought back to discuss methods of survival, team work, and draw conclusions based on their experiences.