Science Classes

ANIMALS IN MOTION

Lesson Overview: Ever wonder what animals do all day while we are tromping through the woods? Well this is your chance to find out! Explore Camp McDowell through a detective lens to look for clues as to what the resident wildlife are up to. Will you spot the clues they leave behind?

Total Time: 1.5 or 3 hours
Hiking Distance: Around 0.75 miles
Activity Level: Can be modified depending on the group
Learning Goals: By the end of this session, students will:

1. Practice their observation skills to interpret animal signs
2. Hypothesize interactions between living and non-living things
3. Identify all the different types of signs animals can leave behind

AQUATIC ADVENTURES

Lesson Overview: In this hands-on, boots-in class participants will spend time catching and observing a variety of aquatic organisms. Together learners will explore how the presence of macro-invertebrates can help us determine the health of water bodies and use their characteristics and adaptations to help identify them. In a three hour class, learners will also use chemical testing to explore how abiotic factors impact water quality. Finally, we'll discuss how changes to their environment could impact their ability to survive. ***Students should come prepared to get wet in this class. Students must wear appropriate closed toed shoes such as old shoes or rain boots.***

Total Time: 1.5 or 3 hours
Hiking Distance: Highly variable; ranges from vehicle transportation to a 0.5 to 1.5 mile hike
Activity Level: Varies by site selected. Accommodations for all abilities available, but requires notice
Learning Goals: By the end of this session, students will:

1. Define the term aquatic macroinvertebrate and identify by collecting organisms in the pond
2. Observe the structures of macroinvertebrates and predict the functions of their specialized structures
3. Hypothesize how environmental changes may impact macroinvertebrates within a body of water
4. Understand the impact of abiotic factors on water health through chemical testing (3 hour version)

DOWN TO EARTH

Lesson Overview: Through observation and exploration of habitats at Camp McDowell, students assess the impact of a reclaimed coal mine on the local ecosystem. Students observe sedimentary rock types associated with coal formation, as well as weathering and erosion processes that result in sedimentation. Students close the class by discussing the need for the responsible use of natural resources.

Total Time: 3 hours
Hiking Distance: ~1.5 miles
Activity Level: Moderate hike; includes a ladder and stream crossings that are not universally accessible.
Learning Goals: By the end of this session, students will be able to consider the geosphere in the following ways:

1. Identify that sandstone and coal are sedimentary rocks that tell the geologic history of our area, and observe the modern impact of weathering on those rocks
2. Observe and describe the impact of coal mining on the geosphere and biosphere in the region
3. Link commonly used materials to finite resources extracted from Earth and discuss the reasons for producing and conserving those resources

FOCUS ON FUNGI

Lesson Overview: This class will explore the woods of Camp McDowell in search of the mysterious fungi. Students will explore different habitats to understand where fungi are found, their role in our ecosystem, and the different shapes, sizes, and colors that they come in!

Total Time: 1.5 hours or 3 hours
Hiking Distance: 0.5-1 mile
Activity Level: Can be modified but contains off trail exploration
Learning Goals: By the end of this session, students will:

1. Be able to recognize fungus in its many shapes, sizes, and forms
2. Identify places where fungus is likely to be found
3. See and explain the role fungus plays in relation to all living things, including humans

HOP, SLITHER & SLIDE

Lesson Overview: This class will highlight the differences between reptiles and amphibians. Students will break down their own misconceptions about herps and learn the characteristics of each group. Then students will get to meet up to two education herps that we have here at Camp McDowell. In the 3 hour version of this class, students will go 'herping' in search of reptiles and amphibians and to learn more about their habitats and ecological impacts.

Total Time: 1.5 hours or 3 hours
Hiking Distance: N/A
Activity Level: Universally accessible
Learning Goals: By the end of this session, students will:

1. Describe the differences between reptiles and amphibians, and relate those differences to animals' respective habitats and needs
2. Confront any fears and dispel any misconceptions they may hold about reptiles or amphibians in a welcoming and understanding space
3. Meet resident reptiles and learn how to safely and properly interact with them

ROCK QUERY

Lesson Overview: Students kinesthetically explore rock types, the rock cycle, and the structure of the Earth. Hiking into a sandstone canyon, they observe how the rock affects the present ecosystem and reveal clues about the past.

Total Time: 3 hours
Hiking Distance: ~ 1.5 miles
Activity Level: Moderate to strenuous hike; includes a ladder/stream crossing that are not universally accessible
Learning Goals: At the end of this lesson, students will be able to think critically about the geosphere in the following ways:

1. Demonstrate the cycle rocks go through and how they provide clues about past ecosystems
2. Observe the effects geology has on our present ecosystem
3. Create a geologic time scale to express the vastness of geologic time