

Aquatic Investigations

Objective: Students will observe aquatic macroinvertebrates in their natural habitat and identify what qualities make the Kings River a suitable habitat for aquatic organisms.

Pre-trip Videos:

- [The World of Freshwater](#) (8:08)
- [What are Macroinvertebrates?](#) (7:03)

Pre-trip Articles:

- [NewsELA - How do Insects Breathe?](#)
- [NewsELA - The Life Cycle of a Dragonfly](#)
- [NewsELA - Some Beetles Walk Along Water](#)

Vocabulary/Key Themes:

- Aquatic
- Macro
- Invertebrate
- Insect
- Habitat
- Adaptation

1st Grade NGSS Correlations:

- LS1.A: Structure and Function - All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. (1-LS1-1)
- LS1.D: Information Processing - Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)
- LS3.B: Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)

2nd Grade NGSS Correlations:

- LS4.D: Biodiversity and Humans - There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)

3rd Grade NGSS Correlations:

- LS2.C: Ecosystem Dynamics, Functioning, and Resilience - When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (3-LS4-4)
- LS4.C: Adaptation - For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)

- LS4.D: Biodiversity and Humans - Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)

4th Grade NGSS Correlations:

- LS1.A: Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)

5th Grade NGSS Correlations:

- LS2.A: The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)
- ESS3.C: Human Impacts on Earth Systems - Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth’s resources and environments. (5-ESS3-1)