



Next Generation Science Standards

Middle School – Stream Macroinvertebrates

Overarching Themes

From Molecules to Organisms: Structures and Processes

- a. Note how animal behaviors and specialized structures affect the probability of successful reproduction of animals and plants respectively – we'll see how different behaviors of different animals affects their lives in the water. (MS-LS1-4)
- b. See how the role of photosynthesis is key in the flow of energy into an ecosystem and how nutrients cycle within a system (producers absorb nutrients from their surroundings and pass them on to consumers). (MS-LS1-6)
- c. See how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism – i.e. how whatever nutrients are in the plants are then transferred to the animals that eat them. If nitrogen is low in the plants then the animals will suffer for that element too. (MS-LS1-7)

Ecosystems: Interactions, Energy, and Dynamics

- a. See how the relative amount or availability of resources (food, oxygen, etc.) has different affects of organisms and the populations of organisms in an ecosystem. (MS-LS2-1)
- b. Explain how organisms interact with each other in an ecosystem – algae provides oxygen and food for invertebrates; the invertebrates provide food for other animals. The abundance of animals will be related to the amount of food available at that site. (MS-LS2-2)
- c. Discuss how nutrients cycle through a system (producer, consumer, decomposer – start over again) and energy flows (sun, producers, consumers, decomposers, heat). Do non-living components of an ecosystem affect the living components? (MS-LS2-3) and (MS-ESSF2-1)
- d. See how changes to the physical environment can affect the living components (both populations and individuals) of the system. (MS-LS2-4)