



The Scientific Method in Action Benchmarks

Ocean Literacy Principle #5: The ocean supports a great diversity of life and ecosystems.

Most of the organisms and biomass in the ocean are microbes, which are the basis of all ocean food webs. Microbes are the most important primary producers in the ocean. They have extremely fast growth rates and life cycles, and produce a huge amount of the carbon and oxygen on Earth.

SC.8.N.1.1

Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.

SC.8.N.1.4

Explain how hypotheses are valuable if they lead to further investigations, even if they turn out not to be supported by the data.



The Scientific Method in Action Vocabulary

Cyanobacteria: also known as blue-green algae that has a sulfur like smell and when it is present in large quantities, it is harmful to the marine environment.

Secondary metabolites: chemicals that an organism produces to aid in the reproduction and growth of the organism. Typically is not necessary for the organism's survival and often is toxic to other organisms.

Morphology: the biological study of the form of living organisms and how the different characteristics are related.

Dissect: to separate something from itself. To take apart.

Solvent: a liquid with a chemical makeup that enables it to dissolve other substances.



The Scientific Method in Action Guiding Questions

1. Where do cyanobacteria exist?
2. What is a possible reason for the different sizes in different species of cyanobacteria?
3. What was the reason for placing samples in tubes of formalin?
4. What did the results of the project show about the connection between the morphology and the chemistry?
5. What new information was discovered in this project?