



New methods help answer old questions Benchmarks

- SC.6.N.2.2 Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered.
- SC.7.N.1.3 Distinguish between an experiment (which must involve the identification and control of variables) and other forms of scientific investigation and explain that not all scientific knowledge is derived from experimentation.
- SC.7.N.1.5 Describe the methods used in the pursuit of a scientific explanation as seen in different fields of science such as biology, geology, and physics.
- 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.

- SC.7.L.16.1: Understand and explain that every organism requires a set of instructions that specifies its traits, that this hereditary information (DNA) contains genes located in the chromosomes of each cell, and that heredity is the passage of these instructions from one generation to another.
- SC.7.L.16.4: Recognize and explore the impact of biotechnology (cloning, genetic engineering, artificial selection) on the individual, society and the environment.



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Family: In this example, family refers to a group of similar organisms; there can be many species in a family.

Species: A group of genetically similar organisms.

Genetics: In this case, genetics refers to using an organism's DNA to determine its appropriate family.

DNA: Think of DNA like an instruction manual for building our genes, each individual has a unique set of instructions, however there are certain genes that are shared within a species. That is why we are people instead of fish.

Organism: An individual animal, plant, or single celled life form.

Cyanobacteria: Single celled bacteria that live in water and are photosynthetic, meaning, they create their own energy by converting carbon dioxide to oxygen.

***Lyngbya*:** One species of cyanobacteria found in the Indian River Lagoon, the Florida Keys and throughout the world.



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Guiding Questions

1. What are the old and new ways the narrator is using to identify the organism's family?
2. Why can DNA be used to tell if an organism is from the same species? Why did it matter?
3. How do names help us communicate?