Connections

"Science is the acceptance of what works and the rejection of what does not. That needs more courage than we might think."

-Jacob Bronowski

What is science literacy and what connection does it have to your life? This is a question that many middle school students have. It is estimated that fewer than 7% of American adults and 22% of college graduates are science literate. The book Science Matters indicates that there are only 18 basic principles, laws, ideas or core concepts that you need to know to be scientifically literate. During this year, we will study at least seven of those principles: ladder of life, code of life, earth cycles, restless earth, evolution, and ecosystems. But what connection does this information have to you and your life?

There are three main arguments for knowing this information. First, it is helpful to be an informed voter. Many of the political debates require some scientific background to understand the issues such as genetic engineering, environmental legislation, and the building of super-colliders. Second, the world operates according to a few general laws of nature. In your everyday life, knowing these laws will let you make connections with the activities you do in work, and in play, and will enrich those activities. Third, scientific knowledge sets the intellectual climate. Knowing the current scientific methods influences the perspective of all other areas of study. The scientific method, a mode of discovering and validating knowledge, can be applied to any subject area through critical thinking. This will directly affect all areas of work, including your possible chosen profession.

"All living things are made from cells, the chemical factories of life."

-Robert M. Hazen and James Trefil

Guiding Questions

1. How are all living things connected? How are you connected to your classmates, your family, your environment?
2. What questions and rules are used to connect or group similar living things? How are the students of the school connected and grouped together?
3. How are the cell's structures connected to its function and processes? How is your classroom structure connected to its function as a learning environment?

What You Will Learn

1. Elements on the Tower of Life
2. 6 Characteristics of Living Things
3. 4 Needs of Living Things
4. 16 Patterns of Life
5. Parts of the Animal Cell and their Functions

What You Will Do

1. Make a creative representation of mitosis.
2. Participate in the "Taxonomy Game."
3. Complete the Skills Lab: "Please Pass the Bread".
4. Participate in the "How to Use a Microscope" Activity.
5. Create a metaphor representing the cell, its parts, and their functions.
6. Research a mammal and analyze its four needs to stay alive.