Name of Demonstration: Unique Properties of Water

Description of Demonstration: Learn all about water and why it does such amazing things. Ages 12 and up.

MN SCIENCE Grad Stand/Strand/Sub-strand: Number####:

1E 4.2.1.1
2E 2.1.1.1, 2E 4.2.1.1, 2E 4.2.1.2
4E 1.1.1.2, 4E 2.2.1.1, 4E 3.1.1.1
6E 1.2.1.1, 6E 3.1.1.3

Grade Level(s): 1st through 6th Grades

Content Area(s): Physical Science, Life Science, Earth Science

Learning Target(s):

1. I can explain the multiple locations where water is found on Earth.
2. I can generate solutions and/or evaluate multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
3. I can explain salinity, the outcomes from salinity, and solutions to prevent increases in salinity.
4. I can compare the amount of salt water as compared to fresh water, as a way of providing evidence about distribution of water on Earth.
5. I can explain, using a model, to describe ways the geosphere, biosphere, hydrosphere, and atmosphere interact.
6. I can explain a model, based on observational and experimental evidence, to describe the cycling of water through Earth's systems (evaporation, condensation, precipitation) driven by energy from the sun and the force of gravity.
7. I can generate and compare multiple solutions to reduce the impacts of natural Earth processes resulting from human actions.

Essential Question(s):

1. What are the types and places of water sources on the Earth?
2. What are ways to prevent wind and/or water from changing the shape of the land?
3. How can we stop erosion (water and wind)?
4. What are the different amounts of salt water vs fresh water on Earth? What effect does this have?
5. How do the geosphere, biosphere, hydrosphere, and atmosphere interact?
6. What are solutions to reduce natural Earth processes and their effects on human beings?
7. How does the energy of the sun affect water and the water cycle? How does gravity effect water and the water cycle?

Key Vocabulary: Cohesion, Adhesion, Polarity, Molecules, Hydrogen, Oxygen, H^2O, Capillarity, Surface Tension, Atmosphere, Hydrosphere, Geosphere, Biosphere, Water Cycle

Prerequisite Terms: Condensation, Cycling, Differences, Distribution, Energy, Erosion, Evaporation, Evidence, Gravity, Interaction, Model, Precipitation, Salinity, Similarities