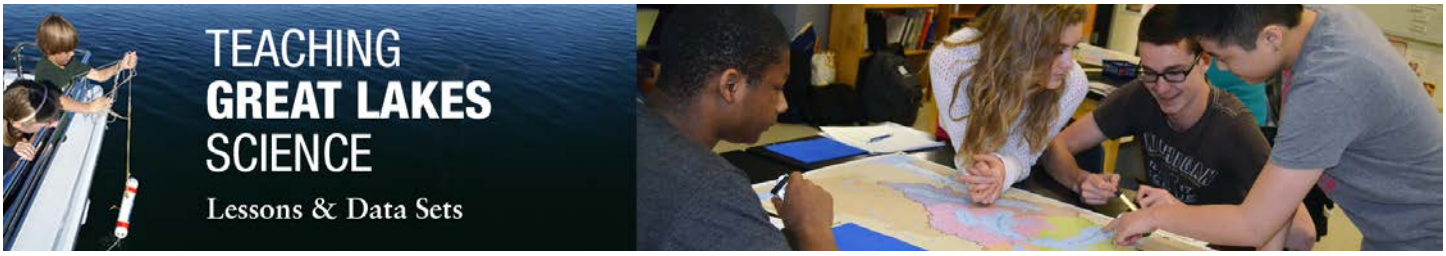


Next Generation Science Standards:

Lesson: Properties of Water
Activities: Discovering Water Density
Investigating Seasonal Cycles
Interpreting Lake Erie Temperatures

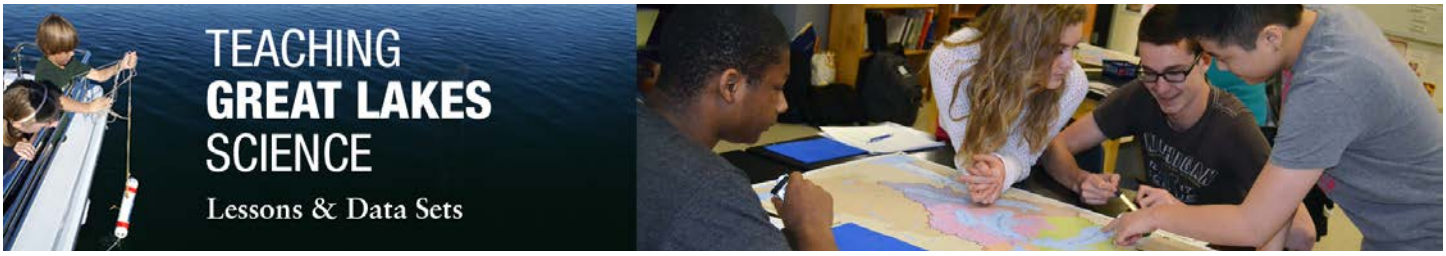
Prior Knowledge Should Include:
- Water is found on Earth in different places and in different forms.

Performance Expectations:
- MS-ESS2.4 Earth's System: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.
- 3-ESS2.1 Earth's Systems: Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Disciplinary Core Ideas:
- **ESS2.C The Roles of Water in Earth's Surface Processes:** Water continually cycles among land, ocean and atmosphere via transpiration, evaporation, condensation, crystallization and precipitation, as well as downhill flows on land. Global movements of water and its changes in form are propelled by sunlight and gravity. Variations in density due to variations in temperature and salinity drive a global pattern of interconnected ocean currents.
- **ESS2.D Weather and Climate:** Scientist record patterns of the weather across different times and areas so they can make predictions about what kind of weather might happen next. Weather and climate are influenced by interactions involving sunlight, the ocean, atmosphere, ice, landforms and living things. These interactions vary with latitude, altitude and local and regional geography, all of which can affect oceanic atmospheric flow patterns.

Practices:
- **Developing and Using Models (2)** – Progresses to developing, using and revising models to describe, test and predict more abstract phenomena and design systems (Middle school).
- **Analyzing and Interpreting Data (4) –** Progresses to collecting, recording, and sharing observations (elementary: K-2). Progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis (Middle school).

Crosscutting Concepts:
- **Patterns:** Observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them.



- **Energy and Matter:** Flows, cycles and conservation. Tracking fluxes of energy and matter into, out of and within systems helps one understand the systems' possibilities and limitations.

Next Generation Science Standards