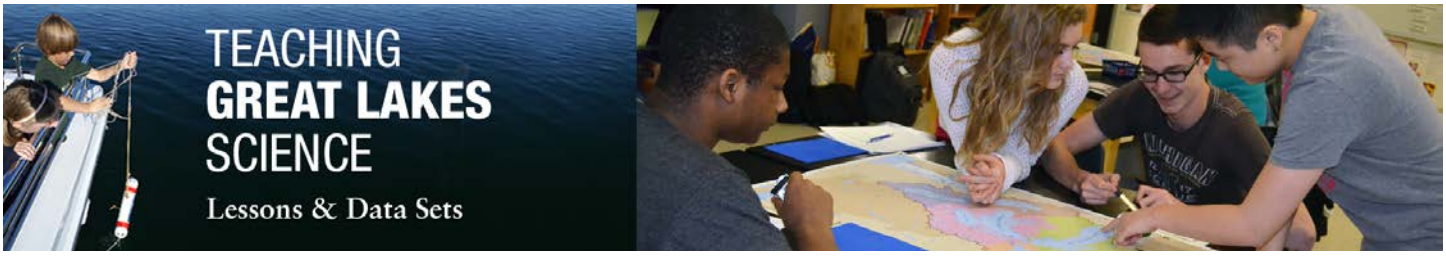

Next Generation Science Standards:

Lesson: Sea Lamprey
Activity: Break the Barriers

Prior Knowledge Should Include:
- Things people do can affect the environment, but they can make choices to reduce their impacts.
- Populations of organisms live in a variety of habitats. Change in those habitats affects the organisms living there.

Performance Expectations:
- MS-ETS1-1 Engineering Design: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- MS-LS2-5 Ecosystems: Interactions, Energy and Dynamics: Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

Disciplinary Core Ideas:
- **ETS1.B Developing Possible Solutions:** There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem.
- **ETS1.A Defining and Delimiting Engineering Problems:** The more precisely a design task's criteria and constrains can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that is likely to limit possible solutions.

Practices:
- **Engaging in Argument from Evidence (7)** – Progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s).
- **Asking Questions and Defining Problems (1)** – Progresses to specifying relationships between variables and clarifying arguments and models.

Crosscutting Concepts:
- **Stability and Change:** For natural and built systems alike, conditions of stability and determinants of rates of change or evolution of a system are critical elements of study.
- **Influence of Science, Engineering and Technology on Society and the Natural World:** All human activity draws on natural resources and has both short- and long-term consequences, positive as well as negative, for the health of people and the natural environment.

Next Generation Science Standards