Minnesota Sea Grant's River Exploration Station

Station Description

Explore the St. Louis River and western Lake Superior, while learning about historical contamination that led to environmental degradation and celebrating the significant ecological improvements that have occurred as a result of pollution controls, remediation, and restoration. Students will work together to complete a puzzle of the St. Louis River and western Lake Superior that will tell the story of wild rice, Lake Sturgeon, recreational opportunities, and Great Lakes shipping in the Port of Duluth-Superior.

Goal

Through this station, students will hear stories that highlight the ecological and economic importance of the St. Louis River and begin to see themselves as part of the St. Louis River's revitalization story.

Objectives

After completing this learning station, sixth-grade students will be able to:

1. Describe key geographical features of the St. Louis River and surrounding land. For example, the river flows through two states and into Lake Superior, there is a significant change in elevation on the Minnesota side of the river, and they can locate their school on the map.
2. Understand what an estuary is.
3. Explain how they are connected to the St. Louis River.

Academic Standards

Next Generation Science Standards

- MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics
  - Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
  - Grade: Middle School (6-8)
- MS-ESS3-3 Earth and Human Activity
  - Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
  - Grade: Middle School (6-8)

Minnesota State Standards

- 6E.3.2.1.3 (Earth and Human Activity) - Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

Wisconsin State Standards

- SCI.CC2.m (Cause and Effect) - Students use science and engineering practices, disciplinary core ideas, and cause and effect relationships to make sense of phenomena and solve problems.

Wisconsin State Standards (continued)

- SCI.SEP8.m (Science and Engineering Practices) - Students obtain, evaluate, and communicate information, in conjunction with using crosscutting concepts and disciplinary core ideas, to make sense of phenomena and solve problems.
- SCI.ESS3.C.m (Earth and Human Activity) - Students use science and engineering practices, crosscutting concepts, and an understanding of earth and human activity to make sense of phenomena and solve problems.
- SCI.ETS2.B.m (Links Among Engineering, Technology, Science, and Society) - Students use science and engineering practices, crosscutting concepts, and an understanding of links among engineering, technology, science, and society to make sense of phenomena and solve problems.

Assess and Evaluate

1. Learning assessment is integrated throughout the station's activities, utilizing a learning check question presented after each St. Louis River story is shared. Students will be called upon to answer the learning check question and will get a puzzle piece if they answer correctly.
2. At the end of the station, ask students to write in their passport books one way that they connect with the water or care for the water.
3. If there is any remaining time left after the puzzle is solved, ask students to share one thing they learned from the station that they want to explore more or learn more about.

Required Materials

- 1 - River Exploration Map (6’ L x 4’ W)
- 2 - Laminated 11”L x 17”W copies of the River Exploration Map
- 3 - Board game style pieces to use as map landmarks during map orientation
- 12 - River Exploration puzzle pieces (each 6” L x 6” W, 2 sets)
- 1 - Container of “Lake Superior” water
- 1 - Container of “St. Louis River” water

Implementation

The River Exploration Station offers sixth-grade students an interactive experience to learn about the St. Louis River's ecological and economic recovery. Through collaborative storytelling and puzzle-building, students explore the river's revitalization from a historically contaminated area to a restored estuary. Using a large-scale map, they engage with narratives on wild rice, Lake Sturgeon, and regional shipping. Students answer learning check questions to earn puzzle pieces, which ultimately leads to them documenting their personal relationship with the water in their passport books.

Contact

For more information and resources, or to borrow the River Exploration activity through our Education Kit Loan Program, contact Kelsey Prihoda (priho011@d.umn.edu, 218-726-6195).