

***What students need to know about Great Lakes Maritime Transportation:
A Summary of Participants' Responses following the 2006 Summer Teacher Institute***

Economics

- What ships on the Great Lakes carry and why.
- How the cost, efficiency, and environmental impacts of Great Lakes shipping compares to other forms of transportation, such as rail and truck. (6)
- How natural resources are moved and used around the Great Lakes.
- How natural resources use and the regional and U.S. economy are dependent upon Great Lakes shipping. (3)
- The critical importance of the Poe lock (at the Soo locks) linking Lake Superior shipping to the lower Great Lakes.
- Connection between Great Lakes shipping and meeting global needs for goods.
- Gentrification of harbors and shipping can co-exist, i.e. Duluth
- How technological changes have affected harbor communities.
- That iron ore is shipped from northern MN and northern Michigan to Detroit, Gary, Cleveland, and other ports to make steel which we all use in our everyday lives.
- The variety of transportation systems used in the mining process.
- How technological advances in ship design, loading/unloading, navigation, and safety have helped Great Lakes shipping.
- The many and varied career opportunities related to Great Lakes shipping that are available, pay well, and require a variety of skills and post-secondary education/training.

Great Lakes Environmental Protection

- The role of ballast water management in helping to reduce invasive species entry and spread in the Great Lakes.
- How invasive species were introduced and spread throughout the Great Lakes, and control methods for reducing their impacts and their continued spread.
- That Great Lakes shipping is environmentally safe (good for the environment) and that U.S. Coast Guard and Army Corps and shipping industry do a very good job of protecting our Great Lakes. (2)

Physical Science

- How locks work between two water bodies of different elevation, and why locks are important. (2)
- How physical principles of balance and momentum affect shipping.

History

- History of Great Lakes shipping from the fur trade, to the industrial revolution, to present-day shipping.
- How shipping has affected life in Michigan and other Great Lakes states.
- Great Lakes shipwreck stories, i.e. the Edmund Fitzgerald, so they understand the perils of the Great Lakes.

Great Lakes Geography

- Major shipping routes and ports on the Great Lakes from the St. Lawrence Seaway to Duluth.

Mathematics

- How mathematics is used in navigation.

