

Developed by Participants in the 2007 [Great Lakes Maritime Transportation Summer Teacher Institute](#) sponsored by the Great Lakes Maritime Research Institute (www.glmri.org)

WHAT CAN YOU DO WITH A GREAT (BIG) LAKE

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Target: Grade 1-2 (Social Studies)

Lesson Overview

With creative discussion, group problem solving, and hands on experience, students will gain basic understanding of how the Great Lakes serves as a transportation pathway, and the importance of protecting this valuable freshwater resource. Students will make their own model of the "Great Lakes" using paper and demonstrate Great Lakes shipping routes using with model ships.

Objectives

At the end of this unit, students will be able to:

1. Discuss how people formed communities on the Great Lakes and use the waterways to supply good and services to meet their needs.
2. Create a sample of a great lakes ship and understand why the ships were constructed in a particular way.
3. Create and explain a graphic representation of the Great Lakes transportation system.
4. Know some basic cargoes shipped on the Great Lakes and products made from them.
5. Experience new vocabulary related to Great Lakes shipping.

Wisconsin State Standards

Language Arts

- A.4.2 Read, interpret, and critically analyze literature.
- A.4.3 Read and discuss literary and nonliterary texts in order to understand human experience.
- A.4.4 Read to acquire information.
- C.4.2 Listen to and comprehend oral communications.
- C.4.3 Participate effectively in discussion.

Social Studies

- A.4.2 Locate on a map or globe physical features such as continents, oceans, mountain ranges, and land forms, natural features such as resources, flora, and fauna; and human features such as cities, states, and national borders
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- A.4.4 Describe and give examples of ways in which people interact with the physical environment, including use of land, location of communities, methods of construction, and design of shelters
- A.4.7 Identify connections between the local community and other places in Wisconsin, the United States, and the world
- A.4.8 Identify major changes in the local community that have been caused by human beings, such as a construction project, a new highway, a building torn down, or a fire; discuss reasons for these changes; and explain their probable effects on the community and the environment

Environmental Education

- B.4.8 Describe and give examples of natural resources;* e.g., water, minerals, soils, air
(see *SC Nature of Science*)
- B.4.9 Distinguish between renewable* and nonrenewable* resources
- B.4.10 Describe how they use natural resources* in their daily lives
- B.4.11 List jobs in the community that result from or are influenced by processing and using natural resources
- B.4.12 Determine the cause of different types of pollution

Materials Needed:

large size roll brown colored paper brown, blue, green construction paper
 large markers
 tag board scissors, pencils
 yarn
 computer, with PowerPoint program projector,
 Smart board
 resource books, quart jar of water
 pictures of puddles, lakes, Great Lakes freighters from teacher resources or internet
 samples of coal, iron ore, taconite
The Great Lakes by Kathy Henderson (1989)
Great Lakes and Great Ships John Mitchell & Tom Woodruff (1991)

Room Arrangement / Special Needs

Set up room with large open space to create paper model of the "Great Lakes."
 Set-up computer, projector and Smart board.

New Vocabulary: *see attached sheet at end of plan*

Attention Getter / Focus Question

Holding jar of water ask: "Tell me everything you know about water. What is it for? Where does it come from in nature? How do we use it? Do you like it? How much?"

Explain that water is an essential resource that we use to keep us alive and also to improve the way we live. We must care for our lakes, rivers and other resources.

Activities

Session One

- 1) Brainstorm on Smart board to keep a journal of ideas that the students learn about the Great Lakes.
- 2) Question: what in nature stores water – move up from puddle, to pond, to river and lake.
- 3) Talk about lakes: reflect on the many lakes in local area. Key question: what can you do with a lake? How can it be used?
- 4) Set up large piece of brown paper (as big as possible) to represent land. Tear out some irregular circles and shapes from blue paper to illustrate lakes.
- 5) Have students create list of natural and man-made resources that are found around lakes.
 - a) roads
 - b) rivers
 - c) homes, businesses, towns
 - d) biking paths, marina, campgrounds
 - e) forests
- 6) Color in examples to create large picture (map) of lake area.

Session Two

- 7) Read: **Great Lakes** (Kathy Henderson)
 - a) Discuss how lakes were formed, who explored the lakes, kinds of ships that were used on the lakes, resources that were transported on the lakes e.g. furs, grain, iron ore.

Session Three

- 8) Using larger pieces of blue paper, add two Great Lakes to the large paper “map.”
- 9) Draw cities, train tracks, iron ore mine and explain iron ore mining.
 - a) Show samples of iron ore, taconite.
 - b) Use pictures to demonstrate steps involved in making taconite and transporting material to ships.

Session Four

- 10) Read: **Great Lakes and Great Ships** (Mitchell & Woodruff) – do not read entire book, but narrate the changes in ships to the present.
 - a) show pictures of Great Lakes freighters from Duluth harbor. – from teacher resources or internet
 - b) explain parts of boats and how they are built for their special purpose.
- 11) Make paper models of boats.

Session Five

- 12) Place boat models on paper on large paper “map.”
 - a) discuss how boats provide low cost large volume transportation for raw materials we use for our everyday life.
- 12) Read: **The Day the Great Lakes Drained Away** (Charles Ferguson Barker)
 - a) Brainstorm ways the class can conserve water resources.

13) Photograph class with group model of Great Lakes.

Assessment

Students will keep a “picture journal” of what was talked about during each session. Start each class by having some students explain their “picture journal” entries to the class.

Questions for picture journal:

Session one: Draw a picture of what you like to do with a lake.

Session two: Draw a picture of how the great lakes are used.

Session three: Draw a picture something that is made out of steel.

Session four: Make paper model of great lakes freighter

Session five: Draw a picture of a way to take care of our great lakes.

Resources

Ann Armbruster (1996), **Lake Superior**.

Introduction to Lake Superior. Explains the lake's history, natural resources and how the lake is used today.

Charles Ferguson Barker (2005), **The Day the Great Lakes Drained Away**.

What would happen if the Great Lakes drained away. This book gives a different understanding of how the Great Lakes look and what would happen if we do not care for them as a resource.

Kathy Henderson (1989), **The Great Lakes**.

A good simple summary of the Great Lakes as freshwater oceans. It describes the lakes, the people who live near them, and how the lakes serve the people's needs.

John Mitchell & Tom Woodruff (1991), **Great Lakes and Great Ships: An Illustrated History for Children**.

This book provides a colorful story of the many different kinds of craft that have been used on the Great Lakes and how people made use of the Great Lakes. Excellent story for young children.

Kathryn Smithyman and Bobbie Kalman (2003). **Nations of the Western Great Lakes**.

Book teaches about the lives of the Native nations who lived on the Western Great Lakes. Explains the impact of colonization on Native peoples.

Patricia Westfield and Nan Soper (2003) **Exploring the Great Lakes: A Logbook of Adventures**

Includes information and activities on Great Lakes geography, history, shipping, and commerce. Also includes CD and map resources. Very good activities.

Shipping Vocabulary

bow	the front of the ship.
coal	hard black mineral used as fuel in some electrical generating plants.
cargo	the load of goods carried by a ship. General cargo is boxed, bagged, crated or on a pallet. Bulk cargo is loose usually granular cargo such as grain, iron ore, taconite pellets and coal.
deck	the flat surface on the upper part of the ship where the crew and passengers can walk. Passenger ships have several decks.
dock	a long platform built next to the water as a landing place for ships.
engine room	area on a vessel where main propelling machinery or engine is located.
harbor	a place where ships may anchor and be safe from storms.
hatch	opening in deck through which cargo is loaded into the hold.
longshoreman	a person who works on a waterfront loading and unloading ships.
maritime	having to do with sailing or shipping on the waterways.
pilothouse	highest cabin on a vessel and from which it is navigated; vessel's command center.
port	another word for harbor; a city with a harbor where ships can load and unload.
propeller	the fan-like part of a vessel at the stern below the waterline which turns to make the vessel go forward or backward.
ship	any vessel larger than a boat, for traveling on deep water.
shipyard	a place where ships are built or repaired.
stern	back or after end of a vessel where the propeller and rudder are located
vessel	a ship or large boat.
warehouse	a building where goods are stored.