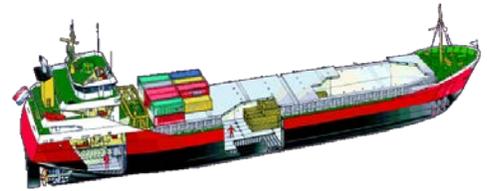


Freighters and the Great Lakes

By Patience Raiford

TARGET GRADE: Pre-K and Kindergarten



LESSON OVERVIEW

Children will explore texts that depict Great Lake freighters and learn how they travel the Great Lakes carrying different cargoes and what the cargo is used for. Next, students experiment with different objects to see what sinks and floats, and design their own miniature Great Lakes freighter.

CONTENT STANDARDS:

Preschool-COR items: GG-4 Child reads a simple familiar map; GG-7 child interprets a map of an unfamiliar location.

College, Career and Civic Life (C3): D2.Geography.2.K-2

Use maps, graphs, photographs, and other representations to describe places and the relationships and interactions that shape them.

CROSS CURRICULAR

- CCSS-ELA Grade K Standard 2: Confirm understandings of text or texts read loud or information presented orally or through hand on activities or through other media by asking and answering questions.
- Arts Education - Students will use paper, paint, crayons or clay to create their representation of the Great Lakes.
- Health Education - Students will participate in a game of “Simon Says,” by identifying the Great Lakes on a large map.

MATERIALS:

- Large canvas floor map of the Great Lakes (part of Great Lakes Maritime Chest available from Belle Isle Nature Zoo, Dossin Museum, DPS Office of Science, Detroit Historical Society, or check website for other locations: http://wupcenter.mtu.edu/education/great_lakes_maritime/teaching_chest/index.htm)
- Models or pictures of ships or freighters on the Great Lakes can be assembled as a small group project or printed from the Great Lakes & Seaway Shipping website online photo gallery: <http://www.boatnerd.com/>
- Samples of cargo carried on Great Lakes freighters: road salt, taconite pellets, coal, limestone, grain (in Great Lakes Maritime Chest, see above). *Be prepared to give examples of how these are used to make everyday products.* See: http://wupcenter.mtu.edu/education/great_lakes_maritime/lessons-activities/Great_Lakes_Cargo_Matching_Game.htm

- Books on Great Lakes shipping (in Great Lakes Maritime Chest):
Paddle-to-the-Sea by Holling Clancy Holling
Mail by Pail by Colin Bergel
The Great St. Lawrence Seaway by Gail Gibbons
The Edmund Fitzgerald Song of the Bell by Kathy-Jo Wargin
- Diagram of Parts of a Ship & labels (in Great Lakes Maritime Chest)
- Water tubs (per class: 14x20x10; or dish tubs per table) or water table
- Yarn to make 2 circles (3-foot lengths per circle) for one Venn diagram per student group.

PROCEDURE

DAY ONE

Large Group Activity: Read one of the children's trade books listed in the Materials section. Have children do a finger play about freighters (ships that carry cargo on the Great Lakes). For example, "When I was "one" I sucked my thumb, I saw a freighter ship." I jumped onto that freighter ship and the captain said to me..." Then the children would sway as though on a ship and sing "you go this way and that way, forward and backward traveling traveling we." Rhyme numbers 1-5. Use as a warm up.

Small Group Activity (approximately 8 children): The large canvas map is used to introduce students to map features, such as state and country boundaries, the 5 Great Lakes, islands, etc.

DAY TWO

Large Group Activity: Read one of the children's trade books listed in the Materials section Repeat finger play from Day One.

Small Group Activity: the children explore cargoes that are transported by freighters and how these resources/materials are used:

- Taconite/iron ore
- Grain
- Salt
- Limestone
- Coal

Small Group Activity (approximately 8 children): The large canvas map is used to introduce students to ports—shipping and receiving--- for the different cargoes.

DAY THREE

Large Group Activity: Read one of the children's trade books listed in the Materials section Repeat finger play from Day One.

Small Group Activity: Link Day Two's lesson about cargoes to locations on map where they are shipped to and from. Allow the children to explore/examine replicas or photos of Great Lakes freighters. Discuss how and where cargo is stored on a freighter ('cargo hold'). See poster of "Parts of a Great Lakes Freighter" from Great Lakes Maritime Chest.

DAY FOUR

Large Group Activity: Read one of the children's trade books listed in the Materials section Repeat finger play from Day One.

Small Group Activity: The children design their own models of freighters from a variety of materials: cardboard, clay, cork, sponges, LEGOs, film canisters w/lids, styrofoam egg cartons, etc. Use a water table, a large clear, shallow (8 inches) plastic tub, or children's swimming pool to test which ships will float and which sink.

The students can make a Venn diagram using 2 circles of yarn, label one "Float" and one circle "Sink" and then place items into the appropriate yarn circle. Discuss why some items may go into an overlap area of the two circles.

Discuss reasons why ships and boats float or sink:

- surface area of boat is great enough for water to push up and support its weight
- too much cargo or improperly loaded cargo can cause a boat to sink.

Optional: show pictures of the Edmund Fitzgerald and Titanic, and short clips that show both of these ships before and after sinking. (Consider the ages of the students and whether they might find it upsetting.)

DIFFERENTIATION

Beginning - Some young learners may only want to participate at this level.

- Ask the children what they know about the Great Lakes and ships. Who has seen a freighter/ship on the Great Lakes? Who has ever been on a boat?

Introduce, using age appropriate texts, information about the Great Lakes and its freighters. (See books listed in materials)

Middle

- Allow the children to explore the materials carried by the Great Lakes Freighters and discuss how these materials
- Explore the materials being hauled on the freighters, their potential uses and some things that can be made from the materials. (Include items the children may be familiar with).

End

- Bring the activity to a close with the students making their own representations of freighters and testing their models ability to float. (Keep in mind this activity has to be done with the preschoolers- kindergarteners' age/abilities in mind.

EXTENSION

Plan a field trip to Dossin Great Lakes Museum on Belle Isle, or other maritime museum near your school. Discuss the Detroit River's role in connecting the Great Lakes. Look for freighters that might be traveling the Great Lakes.

RESOURCES

Great Lakes Maritime Chest

http://wupcenter.mtu.edu/education/great_lakes_maritime/teaching_chest/

Great Lakes Maritime Lessons

http://wupcenter.mtu.edu/education/great_lakes_maritime/lessons-activities/index.htm

Detroit Historical Museum webcam Detroit River Watch

<http://detroithistorical.org/dossin-great-lakes-museum/detroit-river-watch-webcam>

Dossin Great Lakes Museum

<http://detroithistorical.org/dossin-great-lakes-museum/plan-your-visit/general-information>

Boat Nerd webcam

<http://www.boatnerd.com/>