

Lesson #1: Exploring Shipping Through Song Lyrics

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Science and Language Arts
Target grade: 6-8 science
One class period

Lesson overview: The following lesson is aimed at teaching about the shipping industry, poetry, and the geography of Lakes Superior and Huron. This lesson is written for the science portion, but with a little effort, could be expanded into language arts and social studies units. Using the song: "The Wreck of the Edmund Fitzgerald," students will be able to follow the course of the Edmund Fitzgerald, discuss the poetry of the song and its meaning.



The Edmund Fitzgerald

Materials:

1 each per group of 3-4:
map of the Great Lakes, song lyrics to "The Wreck of the Edmund Fitzgerald," ship statistics.

State of Michigan Middle School Science Standards

I.1.MS.1

Generate scientific questions about the world based on observation.

I.1.MS.2

Design and conduct scientific investigations.

I.1.MS.3

Use tools and equipment appropriate to scientific investigations.

I.1.MS.5

Use sources of information in support of scientific investigations

II.1.MS.2

Describe limitations in personal knowledge.

II.1.MS.3

Show how common themes of science, mathematics, and technology apply in real-world contexts.

II.1.MS.4

Describe the advantages and risks of new technologies.

II.1.MS.5

Develop an awareness of and sensitivity to the natural world.

II.1.MS.6

Recognize the contributions made in science by cultures and individuals of diverse backgrounds.

III.5.MS.6

Describe ways in which humans alter the environment.

IV.1.MS.1

Describe and compare objects in terms of mass, volume, and density.

IV.3.MS.2

Relate motion of objects to unbalanced forces in two dimension.

IV.3.MS.3

Describe the non-contact forces exerted by magnets, electrically charged objects, and gravity.

IV.3.MS.5

Design strategies for moving objects by application of forces, including the use of simple machines.

IV.4.MS.6

Explain how mechanical waves transfer energy.

V.1.MS.1

Describe and identify surface features using maps.

V.1.MS.5

Explain how technology changes the surface of the Earth.

V.2.MS.1

Use maps of the Earth to locate water in its various forms and describe conditions under which they exist.

V.2.MS.2

Describe how water in Michigan reaches the oceans and returns.

Background info:

At the time it was launched in 1958, the 729-foot long, 75-foot wide freighter S.S. Edmund Fitzgerald was the largest ship to ply the Great Lakes. On November 10, 1975 the Fitzgerald left Superior, Wisconsin carrying 26,000 tons of iron ore pellets, bound for Detroit. Though the day was bright, in her path lay a terrible storm with 60 MPH winds and waves in excess of 15 feet. As the storm built, her experienced Captain Ernest McSorley bore north across Lake Superior, seeking the relative shelter of the Canadian shore and Whitefish Bay.

Luck was not with the ship or the crew. The radar system and its backup failed. The storm took out the power to Whitefish Point's light and radio beacon. Though the light was brought back on line, the radio beacon was not. The Arthur M. Anderson, another ship within 10 miles of the Fitzgerald, received reports that the ship was listing to the starboard and of other structural damages to the vessel. At 7:10 PM, Captain McSorley delivered what was to be his final message: "We're holding our own." The Arthur M. Anderson lost the Fitzgerald's image on its radar screens at 7:25 PM. The ship and crew of 29 men, sank to the bottom of Lake Superior.

Several expeditions have been mounted to the wreck and have been the subject of

some controversy. On July 4th, 1995 the ship's bell and stanchion were recovered from where they lay beneath 550 feet of Lake Superior. A replica of the bell, graven with the names of the crew, was left in its place. The bell was presented to the relatives of the crew and rung thirty times -- once for each member of the crew and a final time in honor of all those who have lost their lives at sea. The bell was given to the Great Lakes Shipwreck Museum at Whitefish Point to serve as a memorial to the ship and crew. (from <http://www.nauticalworks.com/fitz>)

Attention getter: Hand out copies of the lyrics to the Gordon Lightfoot song; "The Wreck of the Edmund Fitzgerald" while it is being played. (Lyrics available on the website: http://www.corfid.com/gl/Albums/Summertime_Dream/The_Wreck_Of_the_Edmund_Fitzgerald.htm.)

Focus question: What situations caused the Edmund Fitzgerald to sink? They should look at the song lyrics for clues.

Activity: In groups of 3-4, students will get maps of the Great Lakes and song lyrics to "The Wreck of the Edmund Fitzgerald." They will look for clues to sites in the song. On the map, they should locate using latitude and longitude, the final resting place of the boat, where it was coming from, and where it was going. Once they have completed that, they will receive a copy of the text written about the Edmund Fitzgerald. They will then find as many further locations as possible. Students will give the latitude and longitude of each of these sites in table format. Each group will report at least one interesting fact about this vessel, its trip, or the Great Lakes. Students will write a reflection piece about what they have learned about Great Lakes shipping and its importance.

Assessment: latitude and longitude table, focus question answers, teacher observation, student reflections.

Extensions/enhancements:

Students may:

- look at the Duluth web cam to see the ships passing through the canal. (See web address below.)
- find and read the ships' statistics so that they can determine the boats' length, cargo, age, etc. (See web address below.)
- adopt a captain through the marad.gov adopt a ship program.

Resources:

<http://corfid.com/gl/wreck.htm> - More statistical information on the vessel. There are several links to further sites with valuable information.

<http://home.europa.com/~random7/fitz.htm#line> - Lyrics explained.

<http://lsmma.com/webcam.htm> - offers a view of boats going through the port of Duluth, MN.

http://www.corfid.com/gl/Albums/Summertime_Dream/The_Wreck_Of_the_Edmund_Fitzgerald.htm - Lyrics found here.

<http://www.duluthboats.com/2003sch/schedule.html> - statistical information about the vessels going through Duluth

<http://www.ssefo.com/info/facts.html> - Statistical information on the Edmund Fitzgerald