Tracking a Freighter on the Great Lakes

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Target: Grade 5 Computer Lab

Lesson Overview

In this lesson, students will become knowledgeable on the movement of ships through the Great Lakes / St. Lawrence Seaway System through use of http://www.boatnerd.com thereby gaining an understanding of how the Great Lakes serve as a transportation highway in the movement of goods. Students will also be introduced to vocabulary used in Great Lakes shipping. Student groups will pick two active Laker freighters, from Know Your Ships, and follow them over the course of 7-10 days on their journey through the Great Lakes / St. Lawrence Seaway System. Students will cooperatively work in groups of 2-3 to create a presentation using PowerPoint. Students will get practice in web-based research; creation, design, and presentation of report; and complete assignment in a timely manner.

Objectives

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

Work cooperatively in groups.

Students will be able to follow a Laker, research and gather pertinent information about the ship's passage using http://www.boatnerd.com and other internet sites.

Learn the basic cargoes shipped on the Great Lakes and products made from them.

Learn and understand new vocabulary as it relates to Great Lakes shipping.

Create and present to fellow classmates a PowerPoint presentation.

Michigan Content Standards

General Knowledge, Processes, and Skills for Grades 5-8 Social Studies

Embedded in Grades 5-8 standards and expectations

P1 Reading and Communication – read and communicate effectively.

P1.4 Communicate clearly and coherently in writing, speaking, and visually expressing ideas pertaining to social science topics, acknowledging audience and purpose.

P1.5 Present a coherent thesis when making an argument, support with evidence, and present a concise, clear closing.

P2 Inquiry, Research, and Analysis – critically examine evidence, thoughtfully consider conflicting claims, and carefully weigh facts and hypotheses.

P2.2 Read and interpret data in tables and graphs.

- P2.3 Know how to find and organize information from a variety of sources, analyze, interpret, support interpretations with evidence, critically evaluate, and present the information orally and in writing; report investigation results effectively.
- P2.5 Use deductive and inductive problem-solving skills as appropriate to the problem studied.

National Educational Technology Standards for Students

- **1.** Creativity and Innovation students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:
- a. apply existing knowledge to generate new ideas, products, or processes.
- b. create original works as a means of personal or group expression.
- **2.** Communication and Collaboration students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:
- a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- **3. Research and Information Fluency** students apply digital tools to gather, evaluate, and use information. Students:
- a. plan strategies to guide inquiry.
- b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
- d. process data and report results.
- **4. Critical Thinking, Problem Solving, and Decision Making** students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:
- b. plan and manage activities to develop a solution or complete a project.
- **5. Digital Citizenship** students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:
- b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.

Materials Needed

laminated Great Lakes map #14500 Lake Champlain to Lake of the Woods, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Washington, D.C. May 2009. computer lab with internet access; PowerPoint and Excel programs; white board; and multimedia projector; student netbooks

2013 Know Your Ships iBook and standard book internet sites – see resources for listings

New Vocabulary

This is only a partial listing of words and definitions referenced from **ABC's of the Seaway** online at http://www.greatlakes-seaway.com listed under Seaway Publications.

Automatic Identification System (AIS) – a special electronic system that sends the ship's name, speed, and location to seaway traffic control centers.

Cargo – the items a ship carries for transport from one port to another. General cargo is usually standardized 20ft or 40ft-long metal containers. Bulk cargo is usually granular and lose, examples include grains, iron ore, coal, and taconite pellets.

Laker – a ship found exclusively on the Great Lakes.

Saltie – a ship on the ocean.

Attention Getter/Focus Question

Think about tracking the movement of goods and people over distances. What methods, or means, for moving goods and people over distances come to mind for you? Accept answers such as planes, trains, ships, trucks. How can we track these movements today? Accept answers such as GPS, radio, telex, or phone communication, visual sightings.

Computer Lab Activities

Session One

Students will learn new vocabulary as it relates to the GL / SLSS. Students will view and discuss together Tommy Trent's ABC's of the Seaway.

Session Two

Students will complete review of Tommy Trent's ABC's of the Seaway and save it as a favorite

for later reference. Students will then preview the iBook version of Know Your Ships and learn how to read the information provided.

Session Three

Students will use class copies of Know Your Ships to pick the two vessels they will be following, noting the vessel ownership and record it in their notebooks. The teacher will also receive a copy of the ships being followed.

Session Four

Students will be directed to http://www.boatnerd.com and given an overview on how to use the site. Point out that this website uses information gathered from the AIS network. Students will also mark this as a favorite site for future use.

Session Five

Students will check to see if their selected ships are currently underway using http://www.boatnerd.com. Ideally, students within a session or two, will be able to see their ships getting new cargo. At this point they will grab and save a screen shot of this. Students will record the cargo of their ship(s) and proceed to monitor the ships progress. Additionally, students will begin constructing their PowerPoint presentation. They will focus on gathering basic ship's data as listed in Know Your Ships.

Session Six

Students will continue monitoring their selected ships progress. At this time, if a selected ship(s) hasn't been spotted, students will be allowed to change listed ships. Students will also be given a handout, list below in Resources, of additional websites that they can visit to find more information about their selected ships. This is where knowing the vessel ownership from Session Three becomes handy. Students will have time to visit websites.

Session Seven

Students will continue monitoring their selected ships progress and note any changes regarding port arrivals/departures. Students will continue visiting listed Resource sites. They will be charged with finding information beyond the basic ship's data. They may find the ship(s) have been sold previously, and hence renamed; or that the ship has various records for speed, cargo load carried, etc.

Session Eight

Students will by now have seen their ships at ports either arriving/departing. When the ships have completed carrying their cargo to its destination, students will be required to grab and save an additional screen shot of this. Included in this screen shot will be a series of markers showing port departed, shipping lanes travelled, and port arrival. Students will continue visiting the listed Resource websites for ship information.

Session Nine

Students will continue following their ships. By this time ships, should be on a return voyage empty or carrying a new load of cargo, or continuing to carry their original to port. Students will need to find on-line photos of their selected ships for their presentation. Additionally, footage found on http://youtube.com or companies website may be included, especially if it shows the ship loading/unloading cargo, transiting lock systems, involved in bad weather, etc.

Session Ten

Students should be finishing up tracking their specific ships and should be working on destination of cargo and it's becoming a final product, i.e. wheat becoming breads or cereals. Additional work in PowerPoint should also occur.

Sessions Eleven and Twelve

Students will be completing any remaining work for inclusion in their PowerPoint presentation.

Session Thirteen

Students will begin their PowerPoint presentations.

Assessment

Students will create a PowerPoint presentation that includes the following: name, photos, and videos of the two ships being followed, pertinent ship history (current owner, along with past owner(s)) along with ships data (launch and build dates, dimensions, etc.) They will also include a screen shot of each ship's movement (using http://www.boatnerd.com) from beginning to end of journey, and cargo carried. The cargoes end-point destination and becoming a final product.

Resources

2013 Know Your Ships: Guide to Boats & Boatwatching on the Great Lakes & St. Lawrence Seaway, Marine Publishing Company, Inc.

Algoma Central Marine, http://www.algonet.com Web. 22 August 2013.

American Steamship Company, http://www.americansteamship.com Web. 22 August 2013.

Canada Steamship Lines, http://www.cslships.com Web. 22 August 2013.

Central Marine Logistics, Inc., http://www.centralmarinelogistics.com Web. 24 August 2013.

Duluth Shipping News, http://www.duluthshippingnews.com Web. 24 August 2013.

Grand River Navigation Company, Inc., http://www.randlogisticsinc.com Web. 22 August 2013.

Great Lakes Fleet / Key Lakes, Inc. http://www.keyship.com Web. 24 August 2013.

Great Lakes & Seaway Shipping Online, Inc., http://www.boatnerd.com Web. 22 August 2013.

Great Lakes St. Lawrence Seaway System, http://www.greatlakes-seaway.com Web. 22 August 2013.

The Interlake Steamship Company, http://www.interlake-steamship.com Web. 22 August 2013.

Lake Carriers Association, http://www.lcaships.com Web. 22 August 2013.

Lake Michigan Carferry Service, Inc., http://www.ssbadger.com Web. 22 August 2013.

Pere Marquette Shipping Company, http://www.pmship.com Web. 22 August 2013.

VanEnkevort Tug & Barge, Inc., http://www.vtbarge.com Web. 23 August 2013.

Norm Tufford (1990), **Tommy Trent's ABC's of the Seaway**, The St. Lawrence Seaway Management Corporation.