

TEACHING NOTES

Captain Moore: Navigating the Sea

Appropriate Grade Levels: 6 – 12 (This lesson can be used as the start of a larger research project and career exploration for students in grades 9 – 12)

Implementation Time:

One class period (45 minutes to one hour) required for basic exercise.

An additional class period is required if the geography exercise is assigned.

Materials Needed:

Teaching notes for “Captain Moore” case study

Student copies of “Captain Moore”

Access to an atlas, world maps, and/or the Internet

Career Pathway: Engineering, Industry & Science

Subject Area: Geography, Social Studies

Learner Outcome(s): What will happen for learners as a result of this lesson?

Students will explore a career opportunity in international trade. They will learn the basics of what a captain of a ship at sea does. They will review the process of collecting information about weather patterns and use maps and information from other sources to prepare a summary report. Through the geography exercise suggested with this lesson, students will demonstrate technical writing about global geography and the logistics of trade.

How will students learn?

- **Communication:** Students will demonstrate listening and observation skills to gain understanding; will practice communicating ideas clearly and effectively; will demonstrate communication strategies and skills to work effectively with others; and will analyze how communication is used in career settings.
- **Writing:** Students will practice writing clearly and effectively in a variety of forms for different audiences and purposes. Students will practice writing for career applications, producing technical and non-technical documents using resources from career settings.
- **Geography:** Students will use maps to examine weather and climate patterns and will use the concepts of latitude, longitude, and International Date Line to interpret weather and climate information.

How will this lesson plan prepare students to be assessed? This lesson plan will help prepare students for reading and writing assessment exams. The in-class written exercise will permit students to demonstrate their ability to respond to an expository writing prompt. The longer written exercises will allow students to demonstrate their ability to conduct independent research and synthesize information from a variety of media.

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Procedure:

This lesson is designed to be taught in one session.

1. *Distribute the students' version of the "Captain Moore" case study to your class. Divide the students into groups of two or three.*
2. *Read aloud to them or let them read one section of the case study at a time. Don't let them read ahead. After each section, ask each group of students to brainstorm the answer to the question they have been asked. Then, use the questions in the teachers' version of the case study to guide them through a discussion of what they (in the role of student traveling on the ship) should do at each point.*
3. *Finish by having students, either individually or in their small groups, complete the report exercise. Help them use an atlas or world map to sketch a quick map of the area of the world in which they will be traveling, using latitude and longitude lines to denote the North Pacific and the areas in which hurricanes or cyclones can be expected.*
4. *If you wish, have students choose one of the longer term writing assignments as a homework assignment.*

Closure/Assessment:

Review students' written work both for basic writing or presentation skills, as well as for students' ability to explain the steps they would take in researching weather information.

Then, in small groups or as a whole group, have students review the steps they should follow when they are confronted with a problem and don't have enough information to decide what to do. Ask them to share personal experiences of having to conduct research to solve a problem. What did they do? How did they use the information they gathered? What did they do right or wrong? What would they do if they were confronted with the same problem today?

Captain Moore: Navigating the Sea

Part One - Read to the bottom of this page, then stop.

It's going to be an exciting few weeks. You're traveling across the Pacific Ocean from Asia to the United States on the *President Jackson*, a huge container ship owned and operated by shipping company APL Limited.

The *President Jackson* is a type of ship called a C-10. It can carry thousands of 20- or 40-foot cargo containers. The ship is considered "post-Panamax," meaning it is too wide to go through the Panama Canal. Captain Donald M. Moore, Jr. is the Captain of the *President Jackson*, a position he has held since the ship was launched in 1988.

Captain Moore has been an APL ship captain since 1973. He started his career by graduating from the U.S. Merchant Marine Academy and then serving as a junior officer on a number of ships. Over the course of nine years, he took graduate classes and studied for exams from the U.S. Coast Guard. By taking these courses and exams, Captain Moore was able to become a Third Mate, then a Second Mate, then a Chief Mate, and finally his current title: Master, Any Gross Tons, Ocean. This is the top license issued to ship deck officers and qualifies him to command any size ship in any ocean of the world.

You hope you'll be able to learn a little bit about Captain Moore's job during the trip across the Pacific, so you are pleased – but a little nervous – when Captain Moore asks you to take on an assignment for him.

"Traveling across the Pacific in winter can be challenging," Captain Moore tells you, "because of the winter storms. Learning about bad weather and then finding ways to avoid it without hurting the ship, the crew, its cargo, or its schedule is one of my most important responsibilities as captain."

Then he asks for your help. "Please learn about the types of weather we may encounter in the North Pacific. Then find out where we can get information about ocean weather. Please summarize what you learn in a one-page report with a map. This will help you learn about what I do every day."

STOP

Captain Moore: Teaching Notes for Part One

Getting basic information or doing research is the first step to take in this or any problem when you don't know enough to solve the problem by yourself.

Make sure students understand the importance of weather to the captain of a ship. What could happen if Captain Moore didn't take the weather into account when he traveled between Asia and the U.S.? Ask students if they can think of any shipping-related disasters that were caused by ships hitting bad weather unexpectedly.

Then prompt the students to discuss their need for information as they attempt to answer Captain Moore's question.

Then, lead them in a discussion of what kinds of information they might need:

- Information about what geographic area the North Pacific encompasses, to learn where in the world Captain Moore needs weather information.
- What kind of weather they might expect so they can alert Captain Moore.
- Information on who tracks ocean weather and how they track it so they can help Captain Moore get up-to-date information.

Any other details students can think of?

Students may suggest many other kinds of information they should gather before they try to create a report for Captain Moore.

Part Two - *Read to the bottom of this page, then stop.*

You realize the first thing you need is information. You need to learn – quickly – a lot about weather and who tracks it.

Before trying to write your report for Captain Moore, you make a list of the three questions you need to be able to answer:

1. Where is the North Pacific? This sounds like a pretty obvious question, but you realize that you don't know how far SOUTH the North Pacific goes. Does Captain Moore want you to learn only about weather up near the North Pole? Or is the North Pacific larger than that?
2. What kind of weather does the North Pacific get? Specifically, what kinds of storms might the ship have to deal with on the North Pacific?
3. Who tracks ocean weather and what kind of information do they provide? Where would you go to learn more about ocean storms if you were in command of the ship?

Good questions. Now, how do you find the answers?

STOP

Captain Moore: Teaching Notes for Part Two

Once students realize they need to do research, they need to learn HOW to do it.

Prompt students to talk about how they get information to solve problems: from parents, teachers, the library, newspapers, and other students....

In this particular case study, how can they get the information they need?

Lead students through a discussion of the tools they have:

- *They can ask Captain Moore or the other members of the President Jackson crew for more information about how they track the weather*
- *They can use information, tools, computers, and books on board the ship to learn more about how the officers on board the ship track the weather*
- *They can research weather patterns and forecasting on the Internet and can use an atlas or globe to supplement that information*

Other research ideas from students?

Part Three - Read to the bottom of this page then stop.

After talking with members of the President Jackson's crew and looking up information in the reference books you find on the ship's bridge, you learn the answers to your three questions.

1. Where is the North Pacific? You learn that the North Pacific is not just the area near the North Pole, but, in fact, the entire Pacific Ocean north of the equator. The *President Jackson* will be in the North Pacific during its entire voyage.
2. What kind of weather does the North Pacific get? You learn that storms can spring up any time in the ocean, but that the major kind of storm in the Pacific is a tropical cyclone: an ocean storm with circular winds that originates near the equator. A cyclone is called a hurricane east of the International Date Line and a typhoon west of the Date Line. The typhoon season typically ends in November, but you learn that typhoons can occur at any time.
3. Who tracks ocean weather and what kind of information do they provide? You learn that a number of organizations around the world track the weather and ocean storms for ships at sea. Ships can receive special radio transmissions about the weather from the National Oceanic and Atmospheric Administration (NOAA) Marine Prediction Center. NOAA uses satellites as well as land and water tracking stations around the world to collect detailed weather information. (The Marine Prediction Center and U.S. National Weather Service work with organizations in many countries as part of the World Meteorological Organization, a United Nations agency that monitors world weather conditions.)

In addition, you learn that there are three organizations that provide specialized information about tropical cyclones: The National Hurricane Center provides information about hurricanes east of the 140th longitude west; the Central Pacific Hurricane Center provides

TURN PAGE AND KEEP READING

information about hurricanes west of the 140th longitude west and east of the International Date Line, and the Joint Typhoon Warning Center provides information about typhoons west of the International Date Line.

You've learned a lot in just a few hours. But now you need to summarize what you've learned for Captain Moore.

STOP

Captain Moore: Teaching Notes for Part Three

Hopefully, your students have done a good job figuring out WHAT they need to know and HOW to get that information. What's next?

Prompt the students to talk about how they should summarize that information for Captain Moore.

This is something students should think about whenever they need to communicate information. WHO is their audience – their parents, a teacher, a boss – and what does that person need to know?

In this case study, students will be writing a report for the captain of a ship who has been using weather forecasting tools for over 25 years to keep ships safe at sea. The information they provide will not be new to him: rather, the value in this exercise will be in their ability to clearly and coherently summarize information that is new to them in a way that shows they understood the assignment they were given and have worked hard to learn more about his job. How can they show Captain Moore that they understand the importance of weather at sea and have learned how to track it? And, with a ship captain's busy schedule, how can students present the information they have collected in a way that is easy to read?

Captain Moore: Teaching Notes for In-Class Writing Exercise

Students' assignment is to create a report for Captain Moore summarizing what they've learned about North Pacific weather and who tracks it.

You may want to suggest to students that they write a one-page report and create a map to illustrate the report. You can help students develop an outline for the report. One suggested outline is:

- *The Importance of Weather At Sea*
- *Weather that Affects the North Pacific*
- *Methods to Track and Forecast the Weather while at Sea*

Students could then be asked to prepare one paragraph with four to six sentences in each paragraph about each of these topics.

They can then create a map of the North Pacific to illustrate what they've learned about different kinds of weather.

Students should be able to find all the information they need to write the report in their copy of the case study and should be able to use an atlas, globe, or map to identify the areas of the North Pacific where different types of storms strike. You may want to help your students use a map, globe, or atlas to make sure they understand how to translate the written information in this case study onto a map.

Captain Moore: Additional Writing Assignments

1. Ask your students to research the history of weather forecasting. What methods have people used to track and forecast the weather around the world? What did captains of ships at sea do in the days before weather satellites?
2. Ask students to research a shipwreck, ship grounding, or oil spill (either recent or in the past) that was caused by a weather-related condition. (Hint: Consider the Titanic!) What information did the ship's captain have about weather conditions? How did the captain respond to that information? What kind of additional information would have helped?
3. Use a map, atlas, or globe and the Internet to identify at least one major ocean-based storm (either recent or in the past). Draw a map to show where the storm originated and how it moved. In a one-page report, describe the storm's damage, both at sea and on land.