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Lesson 3: The Major Waterways

LEARNING INTENTION:

Students will learn about three major waterways in North America and how they contribute to daily life.

SUCCESS CRITERIA:

Students will be able to name three ways that the St. Lawrence River and Great Lakes play in the world.

MATERIALS NEEDED:

- Reading Notes #1
- Student Worksheet #1, #2, #3
- One computer or iPad for every student

PROCEDURE:

(This lesson should be completed in two periods each lasting between 30-60 minutes each day.)

Day 1

The teacher will start the lesson by handing out Reading Notes #1 and Student Worksheet #1. The students will use this time to read and take notes for the unit test.

After the students have read Reading Notes #3, the teacher will lead an oral discussion with the students about why the waterways are important.

This will be a great way for the teacher to monitor if the students are focusing on the important information from the Reading Notes, as well as a chance for the students to go back and include any information they missed in their study notes.

Day 2

The teacher will pass out Student Worksheet #2 and have the students complete the mapping of the major waterways from around the world, as well as the locations from the previous lesson.

The students will then use the remainder of time to label their map in detail. Students are encouraged to use either an iPad, or a laptop computer and research these locations on a Google map.

(Depending on the needs of your students, you may wish to scan these activity cards onto the computer and have some students complete their work via school issued laptop through the use of Microsoft Word or through Kurzweil.)

EXTENSION:

The teacher may wish to extend the activity by having the students map the course of the St. Lawrence River. The students will need to use an iPad or laptop to search out the locations of the places given. The students can complete Student Worksheet #8 for this activity.

What is the St. Lawrence River?

St. Lawrence River, Grand River and estuary, which together with the Great Lakes forms a hydrographic system that penetrates 3,058 km into North America. The river proper, about 1,197 km long, issues from Lake Ontario, flows NE past Montréal and Québec City to the Gulf of St Lawrence.



The river's drainage basin covers some 1 million km², of which 505,000 km² is in the US, and its mean discharge of almost 10,100 m³/s is the largest in Canada. Its greatest

tributary, the Ottawa River, drains some 140,000 km², the Saguenay River about 88,000 km², the Manicouagan River about 45,000 km², the St-Maurice River some 43,300 km² and the Richelieu River about 22,000 km². In geological terms, the St Lawrence is a young river, whose bed is a deep gash in the Earth's crust exposed some 10,000 years ago as the glaciers receded.

The route of the explorers and main axis of New France, the river figured prominently in Canada's early history, and it remains the focus of settlement for much of the province of Québec. It is still the most important commercial waterway in Canada, as well as a source of electric power and natural beauty.

The St. Lawrence forms much of the southwestern outline of the Canadian Shield, which encroaches the river at Québec City. At Cap-Tourmente, 40 km below Québec, the Laurentians rise 579 m above the river and follow its course past Les Eboulements (770 m), where they begin to retreat inland, to the Saguenay. The S bank is generally lower, although the Appalachians approach the river at Matane and, continuing eastward, form the tableland of Gaspé.

(Source: <http://www.thecanadianencyclopedia.ca/en/article/st-lawrence-river/>)

What are the Great Lakes?

The Great Lakes are composed of five fresh water lakes named Ontario, Erie, Superior, Michigan, and Huron.



VOLUME

6 quadrillion gallons of fresh water; one-fifth of the world's fresh surface water (only the polar ice caps and Lake Baikal in Siberia contain more); 95 percent of the U.S. supply; 84 percent of the surface water supply in North America. Spread evenly across the continental U.S., the Great Lakes would submerge the country under about 9.5 feet of water.

TOTAL AREA

More than 94,000 square miles/244,000 square kilometres of water (larger than the states of New York, New Jersey, Connecticut, Rhode Island, Massachusetts, Vermont, and New Hampshire combined, or about 23 percent of the province of Ontario). About 295,000 square miles/767,000 square kilometres in the watershed (the area where all the rivers and streams drain into the lakes).

TOTAL COASTLINE

United States and Canada — 10,900 mi/17,549 km (including connecting channels, mainland and islands). The Great Lakes shoreline is equal to almost 44 percent of the circumference of the earth, and Michigan's Great Lakes coast totals 3,288 mi/5,294 km, more coastline than any state but Alaska.

(Source: <http://www.great-lakes.net/lakes/ref/lakefact.html>)

[illegible]

Instructions: Use an iPad or laptop to locate and map the following locations. ***The St. Lawrence River, The Great Lakes, The Three Gorges Dam, The Hoover Dam, The Panama Canal, and the Welland Canal***



Mapping in Greater Detail

Create a blank map below of the St. Lawrence River from Kingston to the Atlantic Ocean. Make sure you label your map with the following items, *Canada, United States, Kingston, Cornwall, Montreal, Quebec City, Gulf of the St. Lawrence, Atlantic Ocean, New Brunswick, New York State.*

Physical Patterns in a Changing World Curriculum Map

The lessons are written with the intent of exposing students to the challenges and opportunities presented by the physical environment in the world. Students will have a chance to investigate the impact of natural events and how human activities can transform and change our physical world.

The activities in this book have two intentions:

1. to teach concepts that relate to the physical environment and help the student connect to the features of the world that make up our planet.
2. to provide a snapshot of multiple physical features, but also how we have changed, influenced or shaped the world we live in.

Meeting Your Student's Needs: Depending on the needs of the students in your class, the teacher may want to scan any Reading Notes into Kurzweil on the computer. By doing this, no matter the reading abilities of your students, they will be able to access the information of the text.

Teachers are also encouraged to allow their students to collaborate on as many activities possible, in order to allow all students to be successful without modifying the text significantly.

Introduction:

- At A Glance
- Introduction
- Teacher Assessment Rubric
- Student Self-Assessment Rubric

LESSON TOPICS

Lesson Topics Include:

- ***Lesson 1: The Physical Environment***

- Here the students get a chance to learn about the different physical elements that make up our planet.

- ***Lesson 2: How We Change the Environment***

- Offers students the chance to look at a couple of examples of how humans can manipulate and physically change the world that we live in by building dams and canals.

- ***Lesson 3: The Major Waterways***

- Looks at the St. Lawrence River and the Great Lakes, and their importance to Canada and the world.

- ***Lesson 4: Invasive Species***

- Looks at two examples of invasive species, the lion-fish and Asian carp, and their impact on the environment when they are brought out of their natural habitat.

- ***Lesson 5: Mapping Our Environment***

- Has the students creating and mapping the locations of the physical features and the waterways that play a major role in the world today.

- ***Lesson 6: Eco Tourism***

- Looks at Costa Rica and how the country has used its natural environment as a way to promote the country and create a thriving tourism business.

- Unit Test & Answer Key

- Map Exemplars