OUR FIVE OCEANS:
EXQUISITE, ESSENTIAL, AND ENDANGERED

Lynn Tilley, NBCT and OKAGE TC
Library Media Specialist
Comanche Elementary School Comanche,
Oklahoma ltilley@comanche.k12.ok.us

Grade Level: 7th

Purpose/Overview:
The five oceans of our world, though derived from a single body of water, are the reason that life on this planet exists. The Arctic, Atlantic, Indian, Pacific, and Southern Oceans connect us, providing food, medicines, and other resources necessary for life. They help sustain our planet by transferring heat around the world, driving climate and weather systems, and playing an important role in the global carbon cycle. They serve as a transportation highway, moving people and goods throughout the globe, and ultimately affecting the economic wellbeing of nations. Today our oceans are facing important challenges such as climate change, pollution, and over-fishing. Through exploration and analysis of primary and secondary sources of visual information, and printed and digital texts, students will investigate and discover this interconnected nature, the importance of protecting the oceans, and how what happens to our oceans affects all life on earth.

National Geography Standards from *Geography for Life*
Geographic Elements & Standards: The World in
Spatial Terms –
1. How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information
Physical Systems –
7. The physical processes that shape the patterns of Earth's surface

Oklahoma Academic Standards for the Social Studies:
Grade 7 World Geography: Eastern Hemisphere

OAS 2012	OAS 2019
Process and Literacy Skills Standard 2 The student will develop and demonstrate Common Core Social Studies writing literacy skills.	Engage in Evidence-Based Writing: Students will apply effective communication skills by developing a variety of evidence-based written products designed for multiple purposes and tasks, in order to demonstrate their understandings of social studies concepts, ideas, and content.
B.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	**5.A.6-8.4** Write independently over extended periods of time and for shorter time frames, varying modes of expression to suit audience, purpose, and task and/or to analyze different perspectives.

B.9 Draw evidence from informational texts to support analysis, reflection, and research.	**5.A.6-8.2** Compose informative essays and other written products about social studies topics, incorporating evidence (e.g. facts, examples, details) from multiple sources, maintaining an organized, formal structure.
Content Standard 1 The student will analyze data from a geographic perspective using the skills and tools of geography.	**7.1** The student will analyze data from a geographic perspective using the skills and tools of geography.
1.1 Cite specific geographic information to support analysis from primary and secondary sources located in texts, documents, newspapers, magazines, journals, political cartoons, and online news sources.	**7.1.1** Integrate specific geographic information to support analysis from primary and secondary sources located in texts, documents, newspapers, magazines, journals, political cartoons, and online news sources.
1.2 Integrate visual information, draw conclusions, and make predictions from geographic data and analyze spatial distribution and patterns by interpreting that data as displayed on globes, graphs, charts, satellite and other forms of visual imagery including data from bar and line graphs, pie charts, thematic maps, population pyramids, climographs, cartograms, contour/relief maps, GIS systems, and diagrams.	**7.1.5** Integrate visual information, draw conclusions and make predictions from geographic data and analyze spatial distribution and patterns by interpreting that data as displayed on geographic tools.
1.3 Apply the concept of scale, distance, direction, relative location, absolute location, and latitude and longitude.	**7.1.2** Apply the concepts of scale, distance, direction, relative location, absolute location, and latitude and longitude.
1.4 Integrate visual information and apply the skill of mental mapping of the political and physical features of Earth's surface and to organize information about people, places, and environments.	**7.1.4** Integrate visual information and apply the skill of mental mapping of the political and physical features of Earth's surface in order to organize information about people, places and environments.
Content Standard 3 The student will examine the interactions of physical systems that shape the patterns of Earth's surface in the Eastern Hemisphere.	**7.2** The student will analyze the physical systems of the major regions of the Eastern Hemisphere.
3.1 Integrate visual information to identify on a physical map and describe the major landforms and bodies of water including **B.** Bodies of water – Danube, Volga, Nile, Congo, Niger, Tigris, Euphrates, Indus, Ganges, and Yangtze Rivers; Mediterranean, Arabian and North Seas; Persian Gulf; Bay of Bengal; Strait of Gibraltar; Atlantic, Arctic, Indian, Pacific, and the Southern Oceans.	**7.2.1** Identify on a physical map the major landforms and bodies of water of each region.

Geographic Themes: Human-Environment Interaction, Movement.

Objectives:

1. Students will locate on a physical map the Atlantic, Arctic, Indian, Pacific, and Southern Oceans, and identify specific characteristics associated with each.
2. Students will independently research and prepare short reports on some aspect of the ocean(s) that reflect their interconnectedness with life on earth, as well as the value of protecting Earth's oceans.

Materials:

Computer, LCD projector (or equivalent), and Internet access PowerPoint -- *Our Five Oceans: Exquisite, Essential, & Endangered* Copies for each student of the following:

Continents and Oceans of the World Blank Map **(provided below)**
Political Map of the World (see **Resources**)
Map of New York State (see **Resources**)

[Note: **All color maps are best viewed as <u>color</u> copies if possible**.]

New York State's Strained Ocean Resources: Commercially and culturally vital, New York's shorelines, beaches and fisheries are in trouble -- article posted on Natural Resources Defense Council website (see **Resources**) Copies for each student of the following: (**provided below**)

Notes for Article
Notes for PowerPoint
Research Report Assignment

Yellow highlighters and pencils for each student
Blank notebook paper for note taking (if needed)

[Note: <u>Students will need some way to access Internet, such as computer lab, laptops, iPads, library computers, home computers, etc., to do online research for written report assignments</u>.]

Time Frame: Four to five 60-minute class periods (more for **Extension** activities)

Procedures:

Day 1 – Maps & Written Article

Pass out copies of the blank *Continents and Oceans of the World* map. Tell students they are going to be studying the five oceans of the world, their importance to us, why they are endangered, how the physical systems of the oceans are <u>interconnected</u> with both the land and life on earth, and how what happens to our oceans affects all life on our planet. Next, have students use their pencils to label as many of the oceans and continents on the blank map as they can. (Allow several minutes to do this.) Ask student how many were able to complete the map? How many were able to complete some of the map?

Next, divide class into groups of 2-3 students and pass out to each group a copy of the *Political Map of the World.* Allow students to use this map as a reference to complete, or make corrections if needed, to their *Continents and Oceans of the World* worksheets.

Next, pass out copies of the (1) New York State map, (2) the article entitled *New York State's Strained Ocean Resources: Commercially and culturally vital, New York's shorelines, beaches and fisheries are in trouble*, and (3) Notes from Article sheet. Also, pass out a yellow highlighter and pencil to each student.

Tell students that the oceans affect all life on our planet in many ways, whether one lives close to the ocean or far away. We will look at how the state of New York relies on its ocean resources, and how what is happening there affects the health and economic wellbeing of the state. Tell them, as we read aloud the article together, they are to use their yellow highlighters to mark information they feel is important to remember.

Next, have students work together in their groups, using their highlighted articles, to answer the questions on the *Notes from Article* sheet. When most are complete, review together what they wrote down and discuss. Allow students to make revisions or additions to their sheets as needed.

Tell students they will need to keep all materials they have received in a notebook or safe place to use the next day, and later to assist with their written report assignments. Tell them all maps and *Notes* sheets will be turned in at the end of the study for a grade, together with the final written report assignment.

Day 2 – PowerPoint

Pass out the *Notes from PowerPoint* sheet and a pencil to each student. Tell students that they will take notes from both the PowerPoint presentation, and its video clips. Quickly review the questions on the *Notes from PowerPoint* sheet with students so they will be familiar with information they will be looking for within the PowerPoint presentation.

Show the PowerPoint *Our Five Oceans: Exquisite, Essential, & Endangered*.

In their small groups, allow students time to discuss, review, and complete their *Notes* sheet at the conclusion of the presentation, and then discuss together as a whole class.

Remind students to keep all their notes sheets and materials they have received in a notebook or safe place to use and assist with their written report assignments.

Day 3 – Synthesize, Review, and Give Report Assignment

Remind students that they have discovered from the New York article, the PowerPoint presentation, and the video clips, how the five oceans of the world are important to us, why they are endangered, how the physical systems of the oceans are interconnected with both the land and life on earth, and how what happens to our oceans affects all life on our planet. Today they will be choosing topics for a written report on some aspect of the ocean, reflecting its interconnectedness with life on earth, and why or how oceans need to be protected. Pass out the *Research Report Assignment* sheet to students and review with them.

Using your teacher computer and LCD projector (or equivalent), access the following two National Geographic websites and guide your students through possible topics. Choose one or more as examples to model how students will include in their reports the interconnectedness of oceans and all life on earth. (Allow students time to go to computer lab to explore and choose topics on their own or, alternatively, assign topics.)

National Geographic – The Ocean – web site http://ocean.nationalgeographic.com/ocean/

National Geographic – Protecting the Ocean – web site
http://ocean.nationalgeographic.com/ocean/protect/

Day 4 – 5 (More if needed) – Research and Write Reports
Students will need some way to access the Internet to do online research for written report assignments.

Written Research Assignment:
Each student will research and write a 1-2 page report on an ocean *topic*, making sure to include (1) how that topic is important and interconnected in some way with life on earth, and (2) if, why, and/or how oceans should be protected. Student should make sure their statements are supported with accurate information, examples, and evidence.

Assessment Options:

1. Informal Assessment: Teacher observation of student participation in group and wholeclass discussions, individual and group note-taking and map activities.
2. Formal Assessment: Ocean Topic Report assignment. The report should be evaluated on (1) whether or not student has followed directions, and (2) student has accurately demonstrated his/her understanding of the topic's interconnectedness with life on earth, as well as an evaluation of importance of protecting the oceans.

Resources:
PowerPoint **–** *Our Five Oceans: Exquisite, Essential, & Endangered*

Continents and Oceans of the World Blank Map (**provided below)** from: http://www.yoand.biz/wp-content/uploads/2014/04/continents-world-labeled-printable-coloringmaps-page-continents-and-oceans-coloring-pages.jpg

Political Map of the World from CIA The World Factbook References Regional and World Maps:
https://www.cia.gov/library/publications/the-world-factbook/docs/refmaps.html

Map of New York State:
http://www.ezilon.com/maps/images/usa/new_york_simple.gif

New York State's Strained Ocean Resources: Commercially and culturally vital, New York's shorelines, beaches and fisheries are in trouble. http://www.nrdc.org/water/oceans/newyork/fny.asp

YouTube video clip: *Our Marvelous Oceans – Ocean Wonders* – Marine Conservation Institute, published April 20, 2012, a short video clip introducing the partnership between Holland American Line and the Marine Conservation Institute describing the importance of the oceans as a resource and how they are under threat.
http://youtu.be/OkpEn9_wSDE?list=PLB36AC5BA247CDAC9 (5:14)

YouTube video clip: *Cruising the Southern Ocean on the National Geographic Explorer* – by Bill Klipp, published August 25, 2012, a short video clip aboard the National Geographic Explorer showing the large ocean seas of the Southern Ocean.

http://youtu.be/5JyGe7Maz5o (2:05)

YouTube video clip: *Marine Debris Music Video* – NOAAOceanMediaCenter, uploaded on May 13, 2009, a short video clip showing NOAA's marine debris removal in the northwestern Hawaiian Islands as well as the Anacostia River.
http://youtu.be/BArs4rSm6k4 (3:07)

YouTube video clip: *NASA / The Ocean: A Driving Force for Weather and Climate* – NASA Goddard, published on August 3, 2012, an animation that conveys the importance of oceans to life on Earth, and how Earth's oceanic processes are one important component of Earth's interrelated systems.
http://youtu.be/6vgvTeuoDWY (6:00)

National Geographic – The Ocean – web site http://ocean.nationalgeographic.com/ocean/

National Geographic – Protecting the Ocean – web site
http://ocean.nationalgeographic.com/ocean/protect/

Additional Resources:
NOAA (National Oceanic and Atmospheric Administration) – Official website. (Official U.S. Federal Agency, and part of the United States Department of Commerce.) http://www.noaa.gov

Marine Conservation Institute – Official website. (Dedicated to securing permanent, strong protection for the oceans' most important places.)
http://www.marine-conservation.org/

GLORES – Global Ocean Refuge System – Official website. (An initiative of the Marine Conservation Institute, GLORES advocates for Global Ocean Refuges as a way to preserve and protect the world's marine life diversity.) http://globaloceanrefuge.org/

As Louisiana Sinks And Sea Levels Rise, The State Is Drowning. Fast. (An August 28, 2014 post on the Huffington Post website, by authors Bob Marshall, The Lens, Brian Jacobs, and Al Shaw, of ProPublica. This article addresses the rapidly disappearing coastal landscape southeast of New Orleans, the factors contributing to its demise, and the environmental and economic consequences if left unabated.)
http://www.huffingtonpost.com/2014/08/28/louisiana-sea-level-rise_n_5731916.html

Extensions:
Note: The Links provided in **Additional Resources** can be used for extended background information, or to extend or enrich this unit of study with additional topics as needed.

Name:_____

Continents and Oceans of the World

http://www.yoand.biz/wp-content/uploads/2014/04/continents-world-labeled-printable-coloring-maps-page-continents-and-oceans-coloringpages.jpg

Name:_____

Notes from Article

New York State's Strained Ocean Resources: Commercially and culturally vital, New York's shorelines, beaches and fisheries are in trouble.

From your reading, and highlighted information, of the above article, **summarize in your own words** what you found out about:

1. How do New Yorkers rely on ocean resources?

2. In what ways are these ocean resources under pressure? (Give specific examples)

3. How does the strain being placed on the ocean resources affect the state of New York and its people?

Name:_____

<u>Notes from PowerPoint</u>

Our Five Oceans: Exquisite, Essential, & Endangered

(Use back of paper if needed)

1. Jot down some facts to help you identify and distinguish between each ocean:

<u>Pacific Ocean-</u>

<u>Atlantic Ocean</u>-

<u>Indian Ocean</u>-

<u>Arctic Ocean</u>-

<u>Southern Ocean</u>-

2. Name some ways the physical systems of our oceans are interconnected with the land and life on this planet:

3. In what ways are our oceans being endangered? Give examples.

4. Is it important to protect our oceans? If so, why and/or how?

Name:_____

Research Report Assignment

Using the following web sites to help you choose a topic, you are to:

Research and write a 1-2 page report on an ocean *topic*, making sure to include (1) how that topic is important and interconnected in some way with life on earth, and (2) if, why, and/or how oceans should be protected. You may use other websites or sources of information about your topic, but be sure your statements are supported with accurate information, examples, and evidence.

National Geographic – The Ocean – website
http://ocean.nationalgeographic.com/ocean/

National Geographic – Protecting the Ocean – website
http://ocean.nationalgeographic.com/ocean/protect/

Use the following to help you locate information: (Use additional paper as needed for your notes)

My topic is: _____

Notes about my topic:

How is my topic interconnected with other life on earth?

Should my topic be protected as an important part of the ocean? If so, why and/or how?

Where did I find my information?