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Big Oil: Exploring the Alternatives

Teresa Potter

Moore Public Schools
teresapotter@mooreschools.com
OKAGE Teacher Consultant and Planning Team

100 East Boyd, SEC Rm 442 | Norman, OK 73019-1018 | 405.325.5832 | 800.522.0772 x 5832

www.okageweb.org | okage@ou.edu

Big Oil: Exploring the Alternatives

Teresa Potter, OKAGE TC
Fisher Elementary School
Moore Public Schools
11800 Southwood Drive
Oklahoma City, OK 73170
teresapotter@mooreschools.com

Grade Level: Grade 7-World Geography: Eastern Hemisphere

Purpose/Overview:
The goal of this lesson is to use map skills to gain an understanding of and make inferences about the effects of abundant oil supplies in the Middle East. Using maps, students will analyze data from a geographic perspective. They will gain an understanding of conflict and cooperation among specific groups over oil and religious differences. They will also have a better understanding of wind energy as an alternative form of energy.

National Geography Standards from *Geography for Life*
Geographic Elements and Standards
Environment and Society--

14. How human actions modify the physical environment
16. The changes that occur in the meaning, use, distribution, and importance of resources

OKLAHOMA ACADEMIC STANDARDS FOR THE SOCIAL STUDIES

OAS 2012	OAS 2019
Literacy Skills Standard 1: The student will develop and demonstrate Common Core Social Studies reading literacy skills.	**Social Studies Practices Standard 4. Read Critically and Interpret Informational Sources** Students will engage in critical, active reading of grade-level appropriate primary and secondary sources related to key social studies concepts, including frequent analysis and interpretation of informational sources.
A.1 Cite specific textual evidence to support analysis of primary and secondary sources.	**4.A.6-8.1** Paraphrase the main idea and cite evidence from primary and secondary sources; provide an accurate summary of a source distinct from prior knowledge or opinion.
C.7 Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.	**4.A.6-8.2** Integrate the use of visual information (e.g. maps, charts, photographs, videos, political cartoons) with textual information from primary and secondary sources.
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.
1.5 Conduct short research projects by investigating contemporary events and issues from political, economic, social, and geographic perspectives.	**7.1.6** Describe and analyze the role of geographic factors on current events and issues.
Content Standard 2: The student will examine the human and physical characteristics of the major regions of the Eastern Hemisphere.	**7.2** The student will analyze the physical systems of the major regions of the Eastern Hemisphere. **7.3** The student will identify the characteristics, distribution and demographic patterns of human populations and systems of the Eastern Hemisphere.
2.4 Cite specific textual and visual evidence to analyze reasons for conflict and cooperation among groups, societies, countries, and regions of the Eastern Hemisphere and the involvement of multinational organizations of the United Nations and the North Atlantic Treaty Organization.	**7.5.6** Analyze reasons for conflict and cooperation among groups, societies and countries, including the creation and involvement of supranational organizations.

Geographic Themes:

- The consequences of human modification of the physical environment
- How human modifications of the physical environment in one place often lead to changes in other places
- The role of technology in the human modification of the physical environment

Objectives:

The students will…

1. Analyze and make inferences about charts and maps.
2. Gain a better understanding of the role of oil in the Middle East.

3. Explore wind energy as an alternative to big oil.

Materials:

- Handouts
  - 8 windmills per group (you may want to cut out and laminate these prior to class)
  - Map of Oklahoma
  - Map of Ireland
  - Graphic Organizer
- Power Point-Big Oil: Exploring the Alternatives
- LCD Projector or Smart Board
- 1 white board per group
- 1 expo marker per group

Time Frame: 1-2 class periods

Procedures:

Day 1 Anticipatory Set

Ask the students, "Where do we get our Oil." Explain to them that they might be surprised by the answer.

Teach

1) Show and discuss Power Point, "Big Oil: Exploring the Alternatives," slides 1-11.

Guided Practice

2) Tell the students that we are going to play a game. Pass out white boards, markers, graphic organizers, windmills, and maps. Inform the students that they are going to take a quiz on wind energy. For each answer they get right, they will earn a windmill to put on their wind farm map. For each inference they get right, they can earn a second windmill to add to their map. The winner will be the team with the most windmills on their windfarm. Students are to record answers on their graphic organizer as they go along in the game.
3) Show game slides 14-28. Students will write their team's answer on the white board. They will display white boards all at once and receive one windmill for each correct answer. Afterwards discuss the information on each slide and give students time in between slides to record answers, make inferences and glue windmills to maps. Discuss inferences and allow for time to add second windmill to map.

Assessment

Students will be assessed on the graphic organizer.

Optional Performance Assessment:

Students can use their windfarm map to create a poster on the benefits of renewable energy.

Extension and Enrichment:

Students can…

1. Visit a windfarm.
2. Research other renewable energy resources.
3. Build a model wind turbine.

Simplification:

Students can work in groups to complete graphic organizers. Lower achieving students can be partnered with higher achieving students. Another option is to have students create the poster and not do the graphic organizer or just fill in the statistics.

Connections:
National standards in writing, science, art and social studies are addressed in this lesson.

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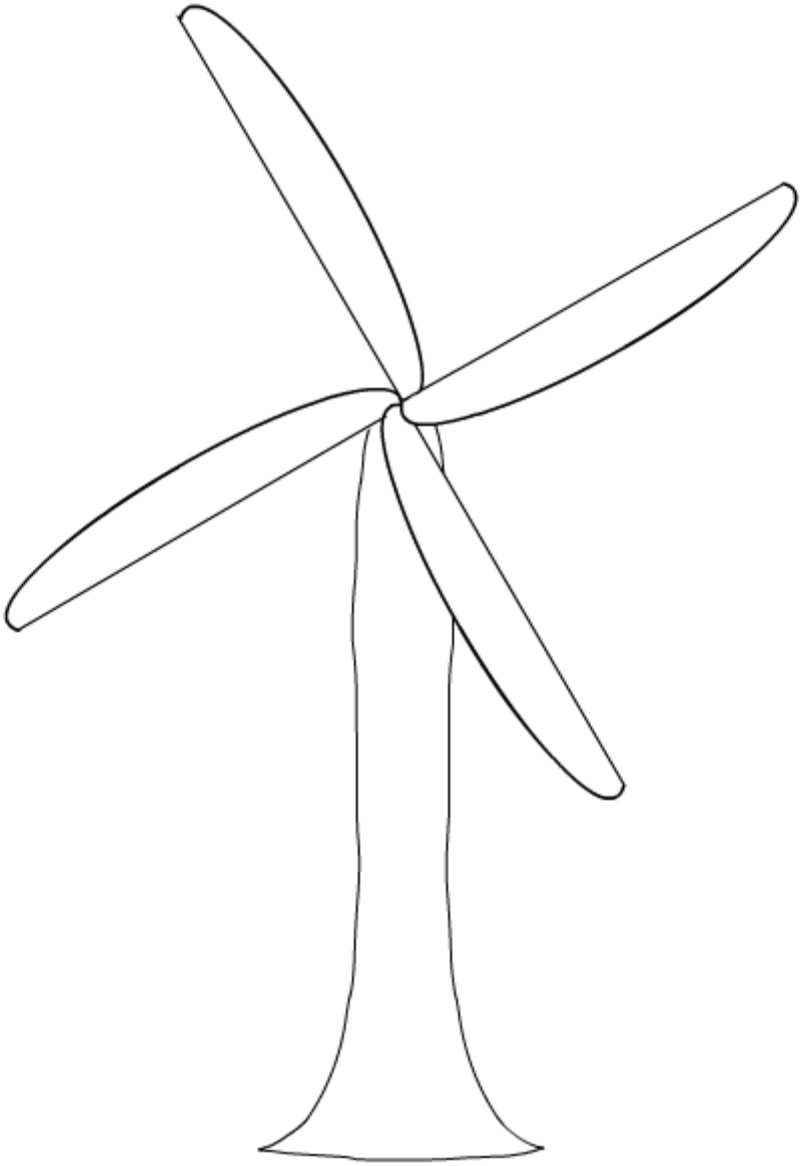

Ireland vs. Oklahoma

Wind Energy Statistics

	Ireland	Oklahoma	Inferences
Size	70,273 km^2	181,195 km^2	Oklahoma has more wind farms.
Wind Potential	One of the best wind resources in the world as a result of its geographical positioning, terrain and climate. Ireland is situated on the Western edge and is exposed to high winds from the Atlantic and the Irish Sea.	The Western Half of Oklahoma is in America's Wind Corridor.	Ireland has a greater potential for wind power.
1st Commercial Wind Farm	1992	2003	Ireland has more wind energy.
Number of Wind Farms	188	27	Ireland is producing more wind energy.
Installed Wind Energy Capacity	2,230 MW	3,932 MW	Since Oklahoma has a greater wind potential, it is producing more wind energy.
Homes Powered by Wind	1,966,250	1,100,000	More people are using wind powered energy in Ireland.
Percent of Electricity from Wind	30%	16.87%	Ireland is in the lead in wind energy.
Potential CO_2 Reductions	3,110, 487 metric tons	6,900,000 metric tons	Wind energy is having a greater positive impact on Oklahoma.

Ireland vs. Oklahoma
Wind Energy Statistics

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1st Commercial Wind Farm			
Number of Wind Farms			
Installed Wind Energy Capacity			
Homes Powered by Wind			
Percent of Electricity from Wind			
Potential CO_2 Reductions			