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Resources and Population Patterns: What's the connection?

A lesson created for National Geographic's Oklahoma Giant Traveling Map

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Lesson Title:

Resources and Population Patterns: What's the connection?

Grade Level: 3-8th grades

Purpose/Overview:

Students will analyze data including a variety of special purpose maps of Oklahoma to determine the reason for population growth and decline in specific areas and make predictions and offer solutions to the issue.

National Geography Standards from *Geography for Life* Geographic Elements & Standards:

Essential Element IV. HUMAN SYSTEMS

Standard 12. The processes, patterns, and functions of human settlement.

Essential Element V. ENVIRONMENT AND SOCIETY

Standard 15. How physical systems affect human systems.

Oklahoma Academic Standards for the Social Studies:

OAS 2012	OAS 2019
Grade 7 WORLD GEOGRAPHY- Eastern Hemisphere	
Content Standard 4: The student will analyze the world's peoples and cultures in the context of the human systems in the Eastern Hemisphere.	**7.4** The student will analyze the interactions of humans and their environment in the Eastern Hemisphere.
Evaluate and summarize the impact of geography on population location, growth, change and density and on the availability of resources, settlement patterns, and migration including the A. Impact of push and pull factors on the rural migration to overcrowded urban centers in India	**7.3.4** Evaluate and summarize the impact of geography on population distribution, density, growth, change, settlement patterns, the availability of resources, and migration, including push and pull factors.
Grade 6 WORLD GEOGRAPHY- Western Hemisphere	
Key Ideas and Details 2. Determine the central ideas or information of a primary or secondary source; provide an accurate	**3.A.6-8.1** Gather, compare, and analyze evidence from primary and secondary

summary of the source distinct from prior knowledge or opinions.	sources on the same topic, identifying possible bias and evaluating credibility.
C. Integration of Knowledge and Ideas 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.	**6.1** The student will analyze data from a geographic perspective using the skills and tools of geography.
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, climagraphs, cartagrams, contour/relief maps, GIS systems, and diagrams. 5. Conduct short research projects by investigating contemporary events and issues from political, economic, social, and geographic perspectives.	**6.1.3** 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.
Content Standard 4: The student will analyze the human systems of the Western Hemisphere in the context of the world's peoples and culture	**6.3** The student will identify the characteristics, distribution, and demographic patterns of human populations and systems of the Western Hemisphere.
Analyze the impact of geography on population location, growth, and change, applying geographic concepts of population density, the availability of resources, settlement patterns, and migrational push and pull factor	**6.3.3** Analyze the impact of geography on population distribution, growth, and change, applying geographic concepts of population density, the availability of resources. **6.3.4** Describe how the push and pull factors of migration have affected

	settlement patterns and the human characteristics of places over time.
Grade 4 UNITED STATES STUDIES	
Standard 1: The student will analyze the physical, cultural, political, economic, and the historic features and places of the regions of the United States	**4.2** The student will examine the physical geography and environments of the United States.
Compare and contrast the regional vegetation, climate, and spatial distribution and use of natural resources.	**4.4.2** Describe the patterns and networks of economic interdependence among regions of the United States.
4. Analyze natural resources and how they impacted the economy of each region including fishing, farming, ranching, mining, manufacturing, tourism, and oil and gas, and their connections to global trade.	**C.** Describe the relative location of the natural resources, such as fossil fuels, minerals and soils, and their relationship to each region's major economic activities, including agriculture, manufacturing, transportation, energy, and services.
5. Summarize how people interact with their environment to resolve geographic challenges including housing, industry, transportation, communication, bridges, dams, tunnels, canals, freshwater supply, irrigation systems, and landfills. (CCRIT 2)	**A.** Identify and locate on a map the major cities of the United States, including their relative location to natural resources and transportation routes.
Grade 3 SOCIAL STUDIES Oklahoma Studies	
Economics Literacy Content Standard 2: The student will identify and describe basic economic activities creating prosperity in the state of Oklahoma.	**3.4** The student will identify and describe basic economic activities creating prosperity in the state of Oklahoma.
1. Summarize how scarcity and surplus require people to make choices about producing and consuming goods and services. (CCRIT 2) 2. Compare differences among human, natural, and capital resources used to produce goods and services.	**3.4.2** Summarize how the factors of scarcity and surplus and the laws of supply and demand of natural and human resources require people to make choices about producing and consuming goods and services.

3. Examine how the development of Oklahoma's major economic activities have contributed to the growth of the state including the oil and natural gas industry, agriculture and livestock, aviation, tourism, and military installations	**3.4.1** Compare differences among human, natural, and capital resources used to produce goods and services. **3.4.3** Examine how the development of Oklahoma's major economic activities have contributed to the growth of the state, including, mining and energy industry, agriculture, aviation, tourism, tribal enterprises, and military installations.
Geography Literacy Content Standard 3: The student will examine Oklahoma's geography and how people of Oklahoma interact with their environment.	**3.2** The student will examine Oklahoma's geography and how people of Oklahoma interact with their environment.
1. The student will examine Oklahoma's political and physical features using text features and search tools. (CCRIT 5) B. Interpret thematic maps of Oklahoma with the essential map elements of title, legend, scale, and directional indicators.	**3.2.1** Examine Oklahoma's political and physical features. **B.** Interpret thematic maps of Oklahoma with the essential map elements of title, legend, scale, and directional indicators.

Geographic Themes:
Movement, Human-Environmental Interaction

Objectives:

1. Students will use geographic tools to collect, examine, and interpret data.
2. Students will locate cities and mark them on the map with stacking manipulatives.
3. Students will analyze and interpret geographic distributions and patterns in Oklahoma.
4. Students will distinguish the difference between the reasons for decline or growth in Oklahoma's cities.
5. Students will collaborate with partners to determine the reason for population growth changes in towns/cities in Oklahoma.
6. Students will evaluate what, if anything, can be done to save or improve the economy in declining populations.
7. Students will predict which towns may be in economic decline in the future.

Materials:

Wrapped candy or other desired items
Oklahoma Giant Traveling Map and Trunk resources OR class set of desk size state maps of Oklahoma and stacking manipulatives such as bingo chips or interlocking stacking bricks (i.e. Legos)
Resources and Population Patterns: What's the connection? Student Data Sheet
Green and Red circles to place on top of stacking manipulatives
Paper flags to place on military bases String
(included in Giant Traveling Map Kit)
Optional:
Computer and LCD projector to display thematic maps

Time Frame: 1-2 55-minute periods

Procedures:
Before lessons begins:

1. The teacher will need to make class set of copies of the *Resources and Population Patterns: What's the connection?* Student Data Sheet. Give students access to an official Oklahoma map and a pencil.
2. The teacher will place candy or other desired items around the Giant Traveling Map.
   OR The teacher will place candy or other desired items on several desks/tables in the classroom.

Lesson

1. When the students enter the room, the teacher will tell the students that they may sit where they choose. OR When the students enter the classroom, the teacher will tell the students that there are no assigned seats and they may choose where they wish to sit.
2. Teacher will ask students why they chose their seat, but the teacher will not reveal the answers to the activity.
3. Teacher will explain that students are examining how things change over time and why people migrate, or move.
4. Teacher will hand out the *Resources and Population Patterns: What's the connection?* Student Data Sheet.
5. First students will locate and identify the three major interstates in Oklahoma, I44, I-35, I-40.
6. Students will mark the highways using the three 20' plastic chains from the Oklahoma Giant Traveling Map resources trunk.

7. Students will locate the Arkansas River, Canadian River and McClellan-Kerr Navigation System.
8. Students will show these waterways on the map by using two 20' pieces of string and one 10'piece of string.
9. Students will identify and label the following major employers in Oklahoma using paper stars: University of Oklahoma

Baker Hughes
Chesapeake Energy
Macy's Distribution Center
Walmart Distribution Center
Major Military Bases
Devon Energy Corporation
Coca Cola Bottling Company

10. Students will examine the Oklahoma thematic maps.
11. Teacher will lead discussion about what students see on the thematic maps. For example, "Which parts of the Oklahoma are more arid?"
12. Students will locate the following cities on the giant map and place an orange cone in the relative location:
    a. Bartlesville
    b. Broken Arrow
    c. Elk City
    d. Erick
    e. Jenks
    f. Lawton
    g. Mooreland
    h. Norman
    i. Oklahoma City
    j. Owasso
    k. Piedmont
    l. Shattuck
    m. Woodward

13. Students will place a red circle on top of the orange cone for the following cities:

a. Elk City
b. Erick
c. Mooreland
d. Shattuck

e. Woodward

14. Students will place a green circle on top of the orange cones for the following cities:

a. Bartlesville
b. Broken Arrow
c. Jenks
d. Norman
e. Oklahoma City
f. Owasso
g. Piedmont

15. Teacher will lead discussion on what patterns they notice.
16. Teacher will ask questions such as, "What do you think that the red circles represent based on the evidence that you have studied?" What do you think the green circles represent?
17. Students will discuss and answer questions with a partner using the *Resources and Population Patterns: What's the connection?* Data Sheet.
18. Teacher will facilitate discussion as students digest information and propose reasons for growth and decline of cities in Oklahoma.

Assessment Options: Students will answer questions and propose solutions based on the information learned during the activity. See *Resources and Population Patterns: What's the connection?* Student Data Sheet.

Resources:

About the giant traveling maps
https://www.nationalgeographic.org/education/giant-maps/

How are they made?
https://geoalliance.asu.edu/sites/default/files/LessonFiles/National%20Geographic%20Education%20Foundation/node/940/How%20Its%20Made%20_%20Pix%20Lock%20Final.mp4

Receiving the map
https://www.youtube.com/watch?v=AqX7lzRwl_8

Oklahoma Data
https://www.census.gov/quickfacts/OK

City Data
http://www.city-data.com/ http://www.city-data.com/city/Oklahoma.html#ixzz4vhAOsEZN

Military bases and major employer locations
https://www.google.com/map

Major employers in Oklahoma http://stateofsuccess.com/industries/

Coca Cola Bottling Company
http://www.greatplainscocacola.com/

Devon Energy
http://www.devonenergy.com/

Oklahoma Thematic Maps
http://climate.ok.gov/index.php/climate
http://www.worldatlas.com/webimage/countrys/namerica/usstates/weathermaps/okprecip.htm
http://climate.ok.gov/index.php/climate/rainfall_table/local_data

NewsOK declining cities in Oklahoma http://newsok.com/article/5550702
Cities on the rise
https://www.nerdwallet.com/blog/mortgages/home-search/cities-rise-oklahoma/

Tulsa World
http://www.tulsaworld.com/news/local/jenks-is-fastest-growing-city-in-state-othersuburbs-continuing/article_534a4040-2a0a-5e09-8405-acab5cbe06dd.html

American Farmland map
http://162.242.222.244/resources/fote/states/map_oklahoma.asp