

Title: Demographic Change: Ghana Case Study

Overview: In this lesson, students create graphs and a choropleth map and capture population pyramids in order to analyze demographic change in Ghana. Students then consider scale as they compare and contrast demographic change in Ghana with that of Africa and West Africa and summarize their findings in a 3 Way Venn Diagram.

Objectives:

- To create and analyze graphs, population pyramids, a choropleth map and a 3 Way Venn diagram
- To compare and contrast demographic change in Ghana with that of Africa and West Africa
- To consider the importance of scale in geographic analysis

Grade Level: 9

Time: 4-5 class periods if no pre-teaching necessary

Required Materials:

- Internet Access
- Printer
- Student Handouts: graphpaper.pdf (3+ per student), Ghana_cbr_cdr_data.pdf, choroplethmaptemplate.pdf, fertilityrates2010.pdf, Africa_cbr_cdr_data.pdf, westafrica_cbr_cdr_data.pdf, 3-way-venn-diagram-1.pdf, ghanacasestudy_rubrics.pdf
- Colored pencils

Minnesota Social Studies Standards - 9-12 Geography

Substrand 1: Geospatial Skills

Standard 1. People use geographic representations and geospatial technologies to acquire, process and report information within a spatial context.

Benchmark 9.3.1.1.1

Use tables, graphs, charts, diagrams and various kinds of maps including symbol, dot and choropleth maps to depict the geographic implications of current world events or to solve geographic problems.

Benchmark 9.3.1.1.2

Apply geographic information from a variety of print and electronic sources to interpret the past and present and plan for the future; provide rationale for using specific technologies for each application.

Substrand 2: Places and Regions

Standard 3. Places have physical characteristics (such as climate, topography and vegetation) and human characteristics (such as culture, population, political and economic systems).

Benchmark 9.3.2.3.1

Make inferences and draw conclusions about the physical and human characteristics of places based on a comparison of maps and other geographic representations and geospatial technologies.

Substrand 3: Human Systems

Standard 5. The characteristics, distribution and migration of human populations on the earth's surface influence human systems (cultural, economic and political systems).

Benchmark 9.3.3.5.2

Use the demographic transition model to analyze and explain the impact of changing birth and death rates in major world regions.

Benchmark 9.3.3.5.3

Compare the population characteristics of places at a range of scales using population pyramids, birth and death rates, and other key demographic variables.

Suggested Procedure:

1. Prior to teaching the lesson, review Required Background Knowledge and all Student Materials found on Weebly: <http://demchangeghana.weebly.com/>
2. Pre-teach any necessary concepts included in the Required Background Knowledge. Concepts such as demographic indicators, the Demographic Transition, population pyramids and choropleth mapping are typically included in the Intro and/or Population Units of a high school Human Geography course.
3. Introduce students to the Weebly site and inform them that the INSTRUCTIONS for this lesson are paperless. Some of their graded materials, however, will be on paper and will include:

Part 1: Ghana

- Ghana CBR, CDR and RNI Graph
 - Graphs will be made by hand using data, graph paper and colored pencils
- Ghana Population Pyramids
 - Population pyramids will be copied, pasted and arranged in a document which will be printed and submitted
- Ghana Regional Fertility Rates Choropleth Map
 - Choropleth map will be made by hand using data, a map template and colored pencils

Part 2: Africa and West Africa

- Africa and West Africa CBR, CDR and RNI Graph
 - Graphs will be made by hand using data, graph paper and colored pencils
- Africa and West Africa Population Pyramids
 - Population pyramids will be copied, pasted and arranged in a document which will be printed and submitted
- 3 Way Venn Diagram: Demographic Similarities & Differences Between Ghana, Africa and West Africa
 - Venn Diagram will be made by hand using a 3 Way Venn Diagram template

Students will also be assessed based on their participation in two class discussions. The first will come at the completion of Part 1 focused on Ghana and the second will come at the completion of Part 2 comparing Ghana to Africa and West Africa. Students should peruse all discussion questions on the Weebly site in advance so that they are well prepared.

4. Distribute and explain ghanacasestudy_rubrics.pdf.
5. Introduce Part 1: Ghana Graphs and Map
 - Distribute graph paper, ghana_cbr_cdr_data.pdf, choroplethmaptemplate.pdf and fertilityrates2010.pdf
6. Remind students to use paperless instructions on Weebly.
7. Circulate and provide assistance as students create their graph, copy and paste their population pyramids and create their choropleth map.
8. Provide an opportunity for students to print their population pyramids document or instruct students to print the document at home and bring it to class with them the following day.
9. Facilitate a meaningful discussion of Ghanaian Population Patterns and Trends using discussion questions provided on the Weebly and any other discussion questions of your choice.

10. Introduce Part 2: Africa and West Africa Graphs and 3 Way Venn Diagram

- Distribute graph paper, Africa_cbr_cdr_data.pdf, westafrica_cbr_cdr_data.pdf and 3-way-venn-diagram-1.pdf

11. Remind students to use paperless instructions on Weebly.

12. Circulate and provide assistance as students create their graph, copy and paste their population pyramids and create and summarize their 3 Way Venn Diagram.

Note: You may want to have students work with a partner or in a small group to complete and/or summarize their 3 Way Venn Diagram. This will provide an opportunity to brainstorm additional ideas.

13. Provide an opportunity for students to print their population pyramids document or instruct students to print the document at home and bring it to class with them the following day.

14. Facilitate a meaningful discussion of Demographic Similarities and Differences Between Ghana, Africa and West Africa using the discussion questions provided on the Weebly and any other discussion questions of your choice.

15. Instruct students to staple their materials together in the following order:

- Ghana CBR, CDR and RNI Graph
- Ghana Population Pyramids
- Ghana Regional Fertility Rates Choropleth Map
- Africa and West Africa CBR, CDR and RNI Graphs
- Africa and West Africa Population Pyramids
- 3 Way Venn Diagram: Demographic Similarities & Differences Between Ghana, Africa and West Africa

16. Collect and assess student materials.

Note: To save time, you may want to assess student work in the classroom as students are working rather than waiting until the end of the activity.

Extensions: Create graphs, choropleth maps and population pyramids for other countries and/or regions and compare and contrast those to Ghana, Africa and West Africa.

Assessment:

- 3 Graphs: Ghana CBR, CDR and RNI, Africa and West Africa CBR, CDR and RNI
- 3 Sets of Population Pyramids: Ghana, Africa and West Africa (1950, 2015, 2050 and 2100)
- 1 Choropleth Map: Ghana Regional Fertility Rates
- 1 - 3 Way Venn Diagram with Summary: Demographic Similarities & Differences Between Ghana, Africa and West Africa

Resources: <http://demchangeghana.weebly.com/>

Credits:

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