

Is the World's Population My Concern?

Population Issues

Susan McHale, Samantha Crawford
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Grade Level	7th – 12th Grade	**Time Frame**	225 minutes
Subject	Social Studies	**Duration**	4-5 class periods
Course	Human Geography, World Human Geography		

Essential Question

What problems exist with an ever-increasing world population? What solutions have countries adopted as a result of increased population?

Summary

Students will examine three interactive maps: population density, fertility rates, and life expectancy. They will create inferences from these three maps about the world's population and its future.

Snapshot

Engage

Students look at how rapidly the world population is growing by watching the "ticking" of the world population clock. Students brainstorm what might be the issues of continued world population growth.

Explore

With partners, students examine three interactive maps: world density, world fertility rates, and world life expectancy rates. Students make observations about the three maps. Using the world density data, students will make inferences about world distribution.

Explain

Groups discuss the implications of the four factors they examined and write statements that draw conclusions from these about the world's population.

Extend

Groups examine the top 10 fastest-growing countries in population and identify issues related to population growth.

Evaluate

Students create a Six-Word memoir that reflects on problems that may arise from an increasing population.

Standards

ACT College and Career Readiness Standards - Science (6-12)

IOD301: Select two or more pieces of data from a simple data presentation
IOD303: Find basic information in text that describes a complex data presentation
IOD701: Compare or combine data from two or more complex data presentations
IOD702: Analyze presented information when given new, complex information

Oklahoma Academic Standards (Social Studies Practices (7th Grade))

7.1.5: Integrate visual information, draw conclusions, and make predictions from geographic data; analyze spatial distribution and patterns by interpreting that data as displayed on geographic tools.
7.1.6: Describe and analyze the role of geographic factors on current events and issues.
7.3.1: Identify on a political map the major countries and population centers of each region.
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.
7.3.12: Distinguish between developed and developing regions using the Human Development Index; analyze data used by geographers, including literacy rate, life expectancy, infant mortality, and per capita income.

Attachments

- Distribution and Density Maps—Is the World's Population My Concern.docx
- Distribution and Density Maps—Is the World's Population My Concern.pdf
- Fertility and Life Expectancy Maps—Is the World's Population My Concern.docx
- Fertility and Life Expectancy Maps—Is the World's Population My Concern.pdf
- Lesson Slides—Is the World's Population My Concern.pptx
- Population Map Graphic Oraganizer—Is the World's Population My Concern.docx
- Population Map Graphic Oraganizer—Is the World's Population My Concern.pdf

Materials

- Lesson Slides (attached)
- Population Map Graphic Organizer (attached; one per student)
- Student access to internet and computers for research
- Distribution and Density Maps (optional; one per group of 2)
- Fertility and Life Expectancy Maps (optional; one per group of 2)
- Notebook paper

10 minutes

Engage

Use the attached **Lesson Slides** to guide the lesson. Display the lesson title on **slide 2**. Move on to **slides 3-4** and go over the essential questions and learning objectives for the lesson. Move on to **slide 5.** Use the Think-Pair-Share strategy to get students thinking about the question on the slide. Once students have had an opportunity to share, show them the population clock linked in the slide. This clock shows how rapidly the world's population is growing per second by the "ticking" of the world population clock. Ask for a volunteer to watch the second hand of a clock or watch and call "time" when a minute has passed. Have other students count the number of people added to the world in one minute.

Display **slide 6**, which asks this question: *How many people are born into the world in:*

- *an hour (60 minutes)?*
- *a day (1440 minutes)?*
- *a week (10,080 minutes)?*

Students will need to calculate the answers using their phone, calculator, or paper and pencil. Display **slide 7** to show world population growth facts.

15 minutes

Explore

Transition students by telling them that they will look more specifically at where populations are increasing.

Display **slide 8** and define population density and population distribution. Discuss the differences in the two terms.

Population distribution describes the way people are spread across an area. This can be uneven and subject to change because people may move around. Places which are densely populated contain many people. Sparsely populated places tend to be difficult places to live. Population density is the number of people in a given area (normally people per square kilometer or per square mile). Sparsely populated = few people per square km/sm. Densely populated = many people per square km/sm. Geographers calculate the density by examining the number of humans within a square mile, regardless of where they live within that square mile. Places which are sparsely populated contain fewer people.

What would you expect to see if you looked at a state density map of New York as compared to Oklahoma?

Teacher's Note: Formative Assessment Check-in

Provide examples of different populations. Have students determine whether the example represents distribution or density. If students understand the differences between the two, then move on to the map activity. If students still seem confused, provide more explanation to support their understanding.

Pass out the **Population Map Graphic Organizer** to each student. Pair up students to work together to make observations about the maps. Go to **slide 9** to guide students to the online interactive population maps. Have students select “Population Density” from the Metric dropdown. Be sure that students select the map view option to see the population per country. Have students make 3 to 4 observable facts about the population density in the correct box. Return to slide 8 and keep up the definition for density and distribution for students to reference.

Go to **slide 10**, instruct students to remain on the population density map. Using that data shown, ask students to make 3-4 inferences about the distribution of the population. Return to the definitions on slide 8 for students to reference, if necessary.

Show **slide 11** to display fertility and life expectancy definitions for students. Discuss the definitions with the class. Maps depict the geographic areas where fertility rates are higher or lower. Certain geographic locations have higher life expectancy rates than others.

Go to **slide 12** have students select “Fertility Rate” from the Metric dropdown. Be sure that students select the map view option to see the population per country. Have students make 3 to 4 observations about the fertility rates in the correct box.

Go to **slide 13** have students select “Life Expectancy” from the Metric dropdown. Be sure that students select the map view option to see the population per country. Have students make 3 to 4 observations about the life expectancy in the correct box.

Optional Printable Map Handouts

This lesson contains optional color maps of World Distribution, Density, Fertility, and Life Expectancy. If you would prefer to do this activity, offline students will need a class set of these maps printed in color. You may wish to laminate them for reuse. Keep in mind that the printable versions of the maps use 2013 data.

20 minutes

Explain

Once all partners have completed their map observations, have partners find another pair to make a group of 4. Group members will share their observations and inferences and add any facts to their own graphic organizer that they learned from others. Students should work to compose and combine their lists so that all observable facts are the same for all group members.

Next, groups discuss and draw a conclusion from the facts that they have shared with one another. Show **slide 14** and ask groups to draw a conclusion about the information they have gathered. Have groups write 3 to 4 statements in the Conclusions section of the graphic organizer. Ask the groups to pick one conclusion that they can share with the class.

One group member will share one of the conclusions that their group created. Write these on the board and discuss the implications for the world's population and its future. Discuss "hot spots" or geographic locations where the population is the densest. Also discuss with the class, the balance of human interaction with the environment in these locations and the finite resources.

30 minutes

Extend

Keep students in their groups of four and use the Jigsaw strategy to have students research one of the 10 most populated countries and how they are dealing with population issues. Each group member will be responsible for researching ONE section but also getting information from his/her group members to fill out the other three quadrants for a complete picture of their country.

Show **slide 15** to reveal the top ten most populated countries. Have groups select the country they wish to research. Ensure that there are no repeating countries. Alternatively, you could assign groups a country to research.

Pass out notebook paper to each student and have students fold their notebook paper into four sections. Number the students in the groups from 1 to 4. The number you gave them corresponds to the section they will be responsible for researching. Display **slide 16**. Have them copy the question at the top of each quadrant onto their notebook paper.

1. *Section 1*: What is your country's current population? What is its expected population by 2050?
2. *Section 2*: What is your country's life expectancy rate? Is this contributing to population growth? Why or why not?
3. *Section 3*: What is your country's fertility rate? Is this contributing to population growth? Why or why not?
4. *Section 4*: How is your country dealing with issues about population?

Students may use maps or look up information that answers the question. Once internet research has been completed by group members, the information about each country can be presented to the class. This can take many forms. It can be an oral presentation where each group member shares the quadrant that they specifically researched. It can be a poster presentation where group members present a poster of information from the four quadrants, or it can be a brief slide show presentation.

5 minutes

Evaluate

Move on to **slide 17**. In this assessment students will return to one of the essential questions, *What problems exist with an ever-increasing world population?* Students will answer this prompt using the strategy Six-Word Memoirs. Either pass out notebook paper for students to construct their memoirs on or have them write it on the back of their **Population Map Graphic Organizer**. Students will write down a memoir to answer the prompt using only six words. Ask students to share their reasoning for choosing those specific words. This can be done by sharing out their rationale as a class or in smaller groups or they could also write down a few sentences to explain their reasoning.

Resources

- K20 Center. (n.d.). Jigsaw. Strategies. https://learn.k20center.ou.edu/strategy/179
- K20 Center. (n.d.). Six-Word memoirs. Strategies. https://learn.k20center.ou.edu/strategy/75
- K20 Center. (n.d.). Think-Pair-Share. Strategies. https://learn.k20center.ou.edu/strategy/139
- Our World in Data. (2024). Population density map. https://ourworldindata.org/grapher/population-density
- Our World in Data. (2024). Fertility rate. https://ourworldindata.org/fertility-rate
- Our World in Data. (2024). Life Expectancy. https://ourworldindata.org/life-expectancy
- United Nations Population Fund. (n.d.). World population dashboard. https://www.unfpa.org/data/world-population-dashboard
- *U.S. and World Population Clock*. United States Census Bureau. (n.d.). https://www.census.gov/popclock/
- *U.S. Census Bureau Current Population.* Current Population. (n.d.). https://www.census.gov/popclock/print.php?component=counter