

Lesson Plan - Population Density in Japan: A Simulation

Grade	6 <sup>th</sup>
Objective	Students will be able to identify the population density of Japan and compare it to the population density of other countries. Upon completion of the unit, students will be able to describe creative solutions the Japanese have implemented to deal with the population.
Duration	2 – 42 minute sessions
Prior Knowledge Needed	<u>Vocabulary:</u> Population density
Materials	<ul style="list-style-type: none"> <li>• Class set of World Atlases with population density maps and climate maps</li> <li>• Each student should have a binder or spiral in which to record vocabulary and respond to the discussion question</li> <li>• National Geographic Book: East Asia( 1 per every 2 students)</li> <li>• photos that show the impact of the high population density in Japan : <a href="http://inventorspot.com/articles/six_startling_scenes_overcrowded_6802">http://inventorspot.com/articles/six_startling_scenes_overcrowded_6802</a></li> </ul>
Lesson	<p>DAY ONE</p> <ol style="list-style-type: none"> <li>1. Anticipatory set: Ask students: What is it like in the hallways when you change classes? Do you feel crowded? Have enough room? Have you ever been anywhere that is as crowded as our hallways during class changing? Tell them that our population density (<i>the average number of people living in a square mile/kilometer</i>) in the hallways is quite high, but in the classrooms it is much lower. Today you will compare the population density of Japan with other countries.</li> <li>2. Direct students to find the population density map of the world in their atlases (or an online source displayed via interactive white board). Have students name which countries have the greatest/least population densities. Discuss possible reasons for why there is a such a difference within a country by comparing population density maps with climate, elevation and physical maps(i.e. – Northern China has cold climates/Gobi desert which deters urban growth while both southern and eastern China have warmer climates, lower elevations and sea access which encourage urban growth)</li> <li>3. Next, set up a simulation. Put ten chairs in front of the classroom and ask the following of the class:  If these ten chairs represent one square mile, approximately how many students could we use to represent the population density of Australia? ( one)  Ask for a volunteer to represent that one person. Ask questions such as: Do you have plenty of room? Can you stretch your legs? Can you lie down?</li> <li>4. Next, move onto the United States— 7.7 students would be needed so round it to eight. Have seven more volunteers sit in the chairs. Again question the students as to comfort.</li> <li>5. China would require 33.8 so ask everyone in class to come forward and to try to sit on the chairs. Students will soon find it does not work. Most classes do not have 34 students, but even a class of twenty will give the students the idea. Make sure students realize there would be even more people. If you wish, remove five chairs and have 17 students try to sit on the remaining five. After students try to squeeze onto the chairs, have them go</li> </ol>

back to their seats.

6. To represent Japan, one would need 87 students. Discuss what it was like to try to fit on the chairs. What would it be like to live in an area that is so crowded?

7. Have the students discuss the following questions:

- How might population density affect daily life?

Possible conclusions:

It affects shelter, transportation, land use, recreation, and social skills.

- In what ways do you think Japan's population density and geography affect housing?

Possible conclusions:

Houses are much smaller in Japan.

Many people live in apartments.

- How might the population density affect transportation?

Possible conclusions:

Japan has developed an extensive train and subway system.

Traffic is very heavy; cars and trucks are smaller.

- Given Japan's population density and geography, how do you think Japan produces its food?

Possible conclusions:

Japan imports much of its food.

Japan uses its available space.

- How might Japan's population density and geography affect manners and behavior?

Possible conclusions:

Japanese people must get along because they live in such close proximity to each other.

People have learned to adapt to such closeness by evolving a complex system of etiquette.

8. Have students record in their SS spirals a minimum of four examples of the impact of population density in Japan.

## DAY TWO

1. Review the information and discussion of population density presented in Day One.

2. Distribute the National Geographic books and ask students to turn to the chapter on Tokyo. Read with their partner to discover the unique way Tokyo is creating more space in their bay (using landfill materials to create more land to accommodate the urban growth)

3. Show students the photos of overcrowding in Japan on the website.

[http://inventorspot.com/articles/six\\_startling\\_scenes\\_overcrowded\\_6802](http://inventorspot.com/articles/six_startling_scenes_overcrowded_6802)

4. Assessment: Have students journal in their spirals about population density: give a

	definition and explain how it affects the people in Japan by giving at least two examples. Describe one solution that Japan has implemented to deal with its urban growth.				
Assessment		<b>4 points</b>	<b>3 points</b>	<b>2 points</b>	<b>1 point</b>
	<b>Journal Response</b>	Answer shows advanced understanding; all parts of the question answered fully.	Clear, concise definition; effect and solution discussed.	Clear definition; only 2 parts of the question addressed	Limited understanding of the definition shown.

Credits: Lesson adapted from Kay Tomesek, *Gahanna Middle School West*, *Gahanna-Jefferson City Schools*