

Title: Ripple Effects: How Does Access To Water and Sanitation Impact Standard Of Living?

Overview: In this lesson, students investigate how access to water and sanitation impact standard of living. Students begin by using an interactive map to analyze global water risk patterns. Students are introduced to the United Nations Sustainable Development Goals and in particular Goal 6 focused on water and sanitation. Students then conduct “jigsaw” research to learn more specifically how access to water and sanitation impact standard of living and utilize a teacher blog documenting a water-focused trip to Kenya to supplement their research. Finally, students summarize their findings in a Canva graphic.

Objectives:

- To analyze global water risk trends by navigating an online water risk map
- To understand the purpose of the United Nations Sustainable Development Goals and in particular Goal 6, focused on water and sanitation
- To investigate and identify specific ways that access to water and sanitation impact standard of living
- To utilize a travel blog as a primary source
- To summarize and communicate ideas in a Canva graphic

Grade Level: 9

Time: 5 class periods

Required Materials:

- Internet access
- Student handouts: rippleeffects_waterriskatlas.pdf, rippleeffects_goal6target, rippleeffects_jigsaw.pdf

Minnesota K-12 Academic Standards in Social Studies:

Substrand 1: Geospatial Skills

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

Benchmark 9.3.1.1.2

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.

Standard 2. Geographic Inquiry is a process in which people ask geographic questions and gather, organize and analyze information to solve problems and plan for the future.

Benchmark 9.3.1.2.1: Use geospatial technologies to develop plans for analyzing and solving local and regional problems that have spatial dimensions.

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 7. The characteristics, distribution and complexity of the earth’s culture influence human systems (social, economic and political systems)

Benchmark 9.3.3.7.3: Explain how social, political and economic processes influence the characteristics of places and regions.

Standard 9. The environment influences human actions; and humans both adapt to and change, the environment.

Benchmark 9.3.4.9.1: Analyze the interconnectedness of the environment and human activities (including the use of technology), and the impact of one upon the other.

Suggested Procedure:

1. Prior to teaching the lesson, review all Student Materials found on Weebly: <http://waterrippleeffects.weebly.com/>
2. Introduce students to the Weebly site.
3. Hand out the Water Risk Atlas Analysis Activity and provide an overview. Remind students that this interactive map is an example of a GIS (Geographic Information System). Students should then use their laptops or other Internet devices to access the online map and complete the activity.
4. When students have finished the Water Risk Atlas Analysis Activity, discuss their responses as a class. Focus on the 3 Ws: Where is it? (Where is water risk?) Why is it there? (Why is there more/less water risk in certain locations?) and What difference does it make? (How does water risk impact both the physical earth and humans?). *The third question will be explored in more depth in subsequent activities.*
5. Proceed to the Weebly page focused on the Sustainable Development Goals. Introduce students to the SDGs by sharing this quote:

“On September 25th, 2015, countries adopted a set of goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved over the next 15 years.”
6. Share the SDG graphic found on the Weebly page and the *World’s Largest Lesson* video. Optional: Flocabulary activities found on Weebly.
7. When students are comfortable with the SDGs in general, focus in on Goal 6: Ensure Access to Water and Sanitation For All. Hand out the Goal 6 Targets Activity. Students should use the link provided on the Weebly to list and explain the Goal 6 Targets. When students have finished, discuss their responses.
8. At this point in the lesson, students should be generally familiar with global water risks and with goals that the global community has set to address those risks. The next part of this lesson will provide students with an opportunity to explore how specifically access to water and sanitation impacts standard of living.
9. Proceed to the Weebly page focused on How Water and Sanitation Impact Standard of Living. Show the *Water Changes Everything* video. Discuss specific examples of how “water changes everything”.
10. Hand out the Impact of Water and Sanitation on Standard of Living Jigsaw Research Activity. Divide students into 9 groups. (For example, if your class has 27 students in it, 9 groups of 3 students each.) Each group should carefully peruse the Water Facts For All and Infographic For All sections on the Weebly page and then complete their assigned row of the matrix using the links provided on the Weebly. When groups have finished, reconfigure the groups so that each group includes one person from each of the previous 9 groups. (For example, if your class has 27 students in it, 3 groups of 9 students each.) Students should discuss and share their information with other members of their group and in turn complete all rows of the matrix. When students have finished, field questions and discuss their responses.
11. Proceed to the Weebly page entitled Kenya Case Study. This is a travel blog from a water-focused trip to Kenya taken in July 2016 with H2O For Life and provides real life examples of how access to water and sanitation changes standard of living. Assign students to read the blog. Class time can be provided or this can be assigned as homework.

12. After reading the blog, students should return to the Weebly page focused on How Water and Sanitation Impact Standard of Living and scroll to the Padlet at the bottom of the page. NOTE: THIS IS A PADLET THAT I CREATED FOR MY STUDENTS AND IS PASSWORD PROTECTED. YOU WILL NEED TO CREATE YOUR OWN PADLET AT <https://padlet.com/>
13. Ask students to post to the Padlet *specific* examples of how access to water and sanitation impacted the standard of living of H2O For Life project recipients in Kenya. (To post to a Padlet, simply double click and start typing.) When students have finished, discuss their examples.
14. Ask students to gather all of their materials from this lesson including the Water Risk Analysis Activity, Goal 6 Targets Activity and Impact of Water and Sanitation on Standard of Living Jigsaw Research Activity.
15. Inform students that the culminating activity for this lesson is to create a Canva graphic that can be shared publicly and used to educate others about one of the following:
 - Global water risks
 - How the U.N. Sustainable Development goals are addressing the need for water and sanitation
 - How access to water and sanitation impacts standard of living
16. Proceed to the Weebly page focused on Creating A Canva Graphic. Review the Canva Graphic Rubric posted to the Weebly.
17. Introduce Canva and have each student create a Canva account using their Google login (or other options as you will see on www.canva.com)
18. Provide class time for students to work on their Canva graphic or assign as homework. When finished, students should submit their graphics as JPGs (Download Image: for Web [JPG]).
19. Post student graphics to a class web page, blog, Facebook, Twitter or Instagram, etc. account or make color copies to be posted around the classroom or school.
20. Collect and assess all student materials.

Extensions:

- Investigate additional U.N. Sustainable Development Goals and the impact of issues addressed by those goals on standard of living.
- Investigate additional development related projects supported by governments and/or NGOs and analyze the impact of these projects on standard of living.

Assessment:

Informal

- Class Discussions
- Padlet Activity

Formal

- Water Risk Analysis Activity
- Goal 6 Targets Activity
- Impact of Water and Sanitation on Standard of Living Jigsaw Research Activity
- Canva Graphic

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

Credits:

Sara E. Damon
Stillwater Junior High School
523 W. Marsh Street
Stillwater, MN 55082
651-351-6952
damons@stillwaterschools.org