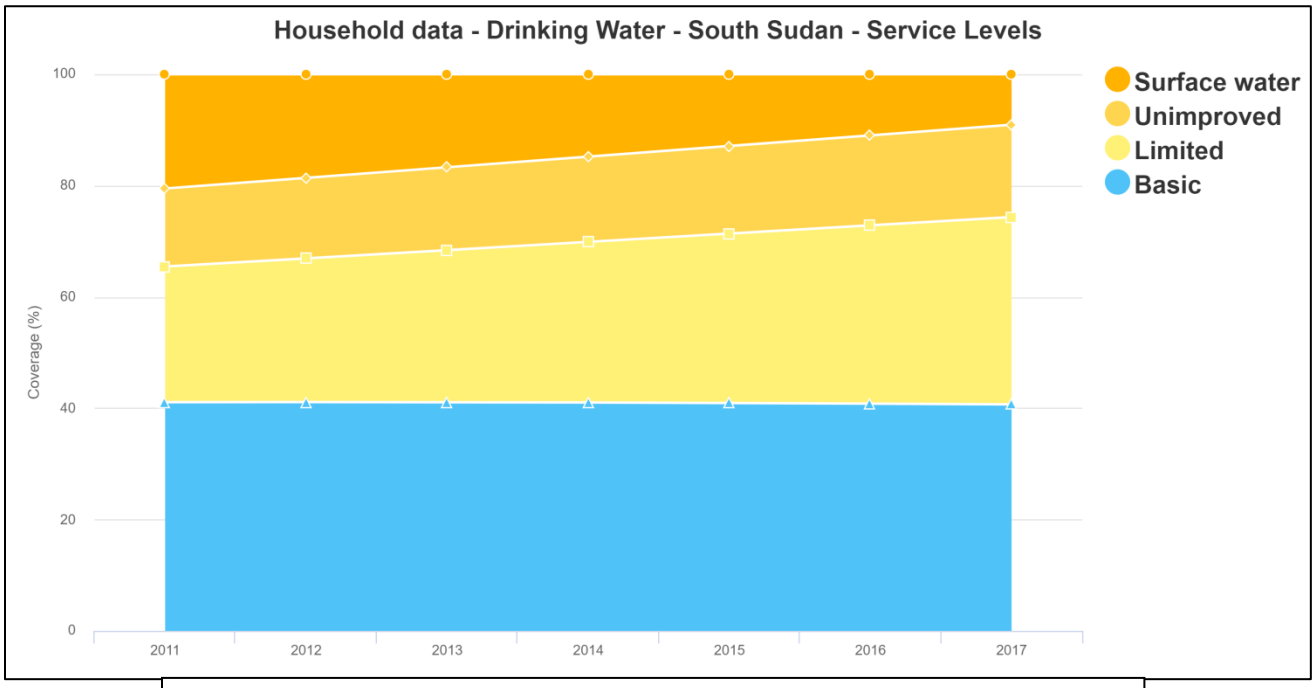
Data Analysis:
Where's the Water?

In the United States, access to clean, safe drinking water is commonplace. In fact, it is so commonplace that many Americans don't actually think about it on a daily basis. Less than 1% of the population in the United States does not have clean water access. But, what if access to water was your main daily concern over everything else?

EXERCISE 1: Use the graph below to answer the questions regarding water accessibility in South Sudan.

Important terms: **Basic access:** clean water is available piped in onsite
Limited access: clean water is available within 500 meters or 1/3rd of a mile
Unimproved access: water is taken from unprotected sources such a dug holes
Surface water access: water is taken from surface water sources such as lakes, ponds, streams, and other unprotected open water resources



Graph from: WHO UNICEF JMP. (2017). Retrieved July 28, 2020, from https://washdata.org/data/household

Fill in the data chart using data from the graph above.

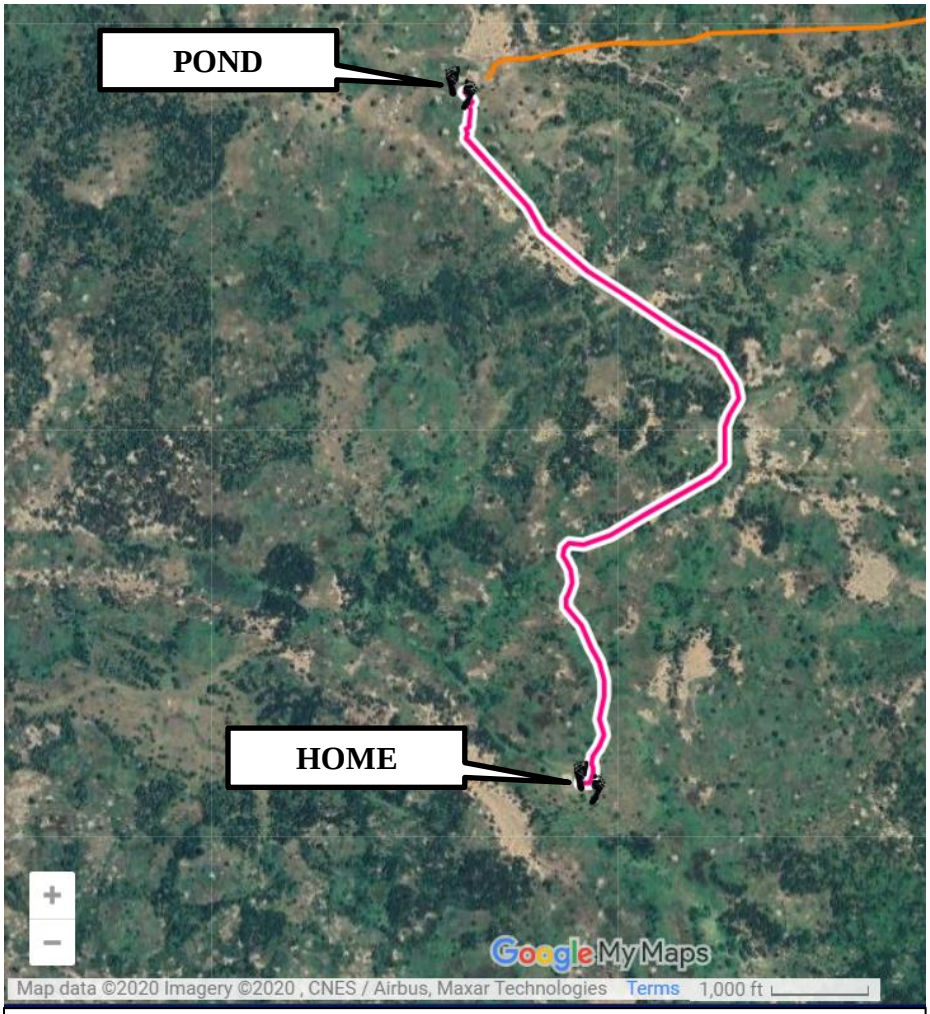
Year	% of population with basic access to clean drinking water	% of population with limited access to clean drinking water	% of population with access to unimproved and surface water sources only
2011			
2017			
% change from 2011 to 2017 (if the number has decreased, include a minus sign)			

1. After looking at your data, has the number of people with “basic access” to clean drinking water improved during this 6 year time span? _____
2. After looking at your data, has the number of people with “limited access” to clean drinking water improved during this 6 year time span? _____
3. After looking at your data, has the number of people with access to “unimproved and surface water sources only” improved during this 6 year time span? _____
4. Looking at your answers to number 2 and 3, what clues can you draw from the book “A Long Walk to Water” that show why these numbers are improving? Be specific. Include what regions you feel may be experiencing better clean water access, urban or rural.

Exercise 2: Walking to find water.

DO THE MATH: It is estimated that women in Africa spend 40 billion hours per year walking to get water. If the average person walks 3.5 miles per hour, without lugging jugs full of water with them, approximately how many miles per year are women in Africa walking just to get water?

READ THE MAP: The map below shows Nya's daily walk to get water for her family. Use the map to answer the questions below.



Base map can be accessed by going to https://www.waterforsouthsudan.org/for-educators/ , then scrolling down to "Extension Activities" and selecting "A Google Earth Map of Where Salva Walked"

1. Using the scale on the map, how far does Nya walk from her home to the pond? Make sure to follow the path on the map. _____
2. How far does she walk on the round trip from her house to the pond and back to her house?_____
3. If there are 5,280 feet in a mile, how far is her round trip in miles? Show your work.

4. If Nya makes this trip 2 times a day, how far does she walk every day just to get water? Give your answer is both feet and miles.

EXTENDED THINKING EXERCISE: From where you are currently sitting, measure the distance to the closest source of water. Take your measurement in feet.

1. What is the distance you measured? _____
2. Convert the distance you measured to miles. Show your work.

3. What is the difference between how close the nearest water source is to you versus how close the nearest water source is for Nya? Show your work.

4. Write a short paragraph that describes how your life would be different if you had to walk the same distance as Nya every time you needed water. Think about activities you enjoy doing, schooling, and daily life in general and how that would change.

INTERACTIVE EXERCISE (Think, Group, Share): Mapping the closest source to fresh water from my home.

1. Go to Google Maps in your web browser (google.com/maps)
2. In the "Search Google Maps" box, type in your home address.
3. Draw a picture of the map in the space provided below.

4. Using the scale on the Google map, and ignoring property boundaries, how far from your home is closest fresh water source? Water will be denoted in blue, but be careful, you don't want to drink saltwater, so make sure you find a freshwater source.
   a. Distance in feet: _____
   b. Distance in miles (remember, there are 5,280 feet in a mile): _____

5. If you had to walk that distance two times every day to get enough water for your family:
   a. How long would it take you based on an average walking pace of 3.5 miles per hour?
   b. How much longer to you think it would take if you were hauling 20 pounds of water as well?

6. Break into small groups and compare your answers to your classmates' answers. Is there anyone who would have to walk as far each day as Nya? Would you consider yourself lucky or unlucky with how far you have to walk compared to your classmates? What are some ideas on how you might sanitize the water to make it safe to drink? Does this make anyone in your group feel differently about having quick access to clean water? Write a short paragraph about your group findings and be prepared to discuss it as a class.

RESOURCES USED FOR WORKSHEET:

Water For South Sudan. (2020). Retrieved July 2, 2020, from https://www.waterforsouthsudan.org/

WHO UNICEF JMP. (2017). Retrieved July 28, 2020, from https://washdata.org/data/household