



8a.8 Access to Fresh Water – UN Article 31

Story Extension for This Lesson:

In this lesson students widen their scope beyond the Great Lakes and begin to consider Global water issues.

Grade: 8

Strand: Water Systems

Big Ideas:

- Water is crucial to life on Earth. (Overall expectations 1 and 2)
- Water systems influence climate and weather patterns. (Overall expectation 3)
- Water is an important resource that needs to be managed sustainably. (Overall expectations 1 and 2)

Overall Expectations:

1. assess the impact of human activities and technologies on the sustainability of water resources
2. investigate factors that affect local water quality
3. demonstrate an understanding of the characteristics of the earth's water systems and the influence of water systems on a specific region

Specific Expectations:

- 1.1 evaluate personal water consumption, compare it with personal water consumption in other countries, and propose a plan of action to reduce personal water consumption to help address water sustainability issues
- 1.2 assess how various media sources address issues related to the impact of human activities on the long-term sustainability of local, national, or international water systems
- 2.2 investigate how municipalities process water (e.g., obtain it, test it, and treat it) and manage water (e.g., distribute it, measure consumption, and dispose of waste water)

Inquiry Skills:

Evaluating, Defending

Instructions:

This lesson involves having students identify world issues with water purity and how it is linked to life expectancy to help them understand the global water crisis.

Hand out and have students complete the access to water versus life expectancy table activity and the follow up questions.

After this, have the students read about Article 31. Water should be a basic human right. Bring in an expert to have a discussion concerning global water rights and issues and answer the question:

- Why do so many people have to go without potable water?

Materials List:

- pens or pencils
- coloured pencils / markers
- computer
- atlas

Connections:

Global Geography

Assessment Strategy:

The Learning Process

Handouts:

- Access to Fresh Water Activity

Subject Area:

Environmental, Science, English , Social Studies

Connects to:

Grade 8

Access to Fresh Water Activity

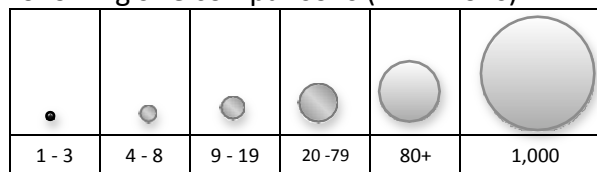
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1. As we look for different ways to graph these data, notice that the data cannot be completely described by a mathematical model such as a linear relation. This can include just plotting points for a scatter graph, or looking for a curve of best fit.
2. So the Gap minder program shows a more complex relationship by incorporating the population with the 2 major criteria.
3. Use the graph to interpolate and/or extrapolate and to examine the correlation between the two variables being plotted.

Table Life Expectancy vs. Water			
Country	Population	Life Expectancy	Access to fresh water
Afghanistan	25,900,000	44	48%
Angola	10,200,000	46	50%
Botswana	1,800,000	50	95%
Burundi	6,000,000	50	72%
Canada	34,000,000	81	100%
Central African Rep.	3,500,000	47	67%
Chad	8,800,000	49	50%
China	1,800,000,000	72	77%
Costa Rica	3,800,000	79	97%
Cuba	11,200,000	79	94%
France	59,500,000	81	100%
Germany	82,900,000	80	100%
Haiti	8,000,000	60	54%
India	1,100,000,000	62	86%
Israel	5,900,000	81	100%
Japan	126,600,000	82	100%
Mali	10,800,000	49	56%
Mozambique	19,200,000	48	47%
Nigeria	123,500,000	48	58%
Poland	38,700,000	76	100%
Romania	22,000,000	72	57%
Rwanda	7,400,000	50	65%
Sierra Leone	5,300,000	47	49%
Somalia	7,400,000	50	30%
Switzerland	7,300,000	82	100%
U.S.A	315,000,000	75	99%
United Kingdom	61,000,000	79	100%
Zimbabwe	12,000,000	41	81%

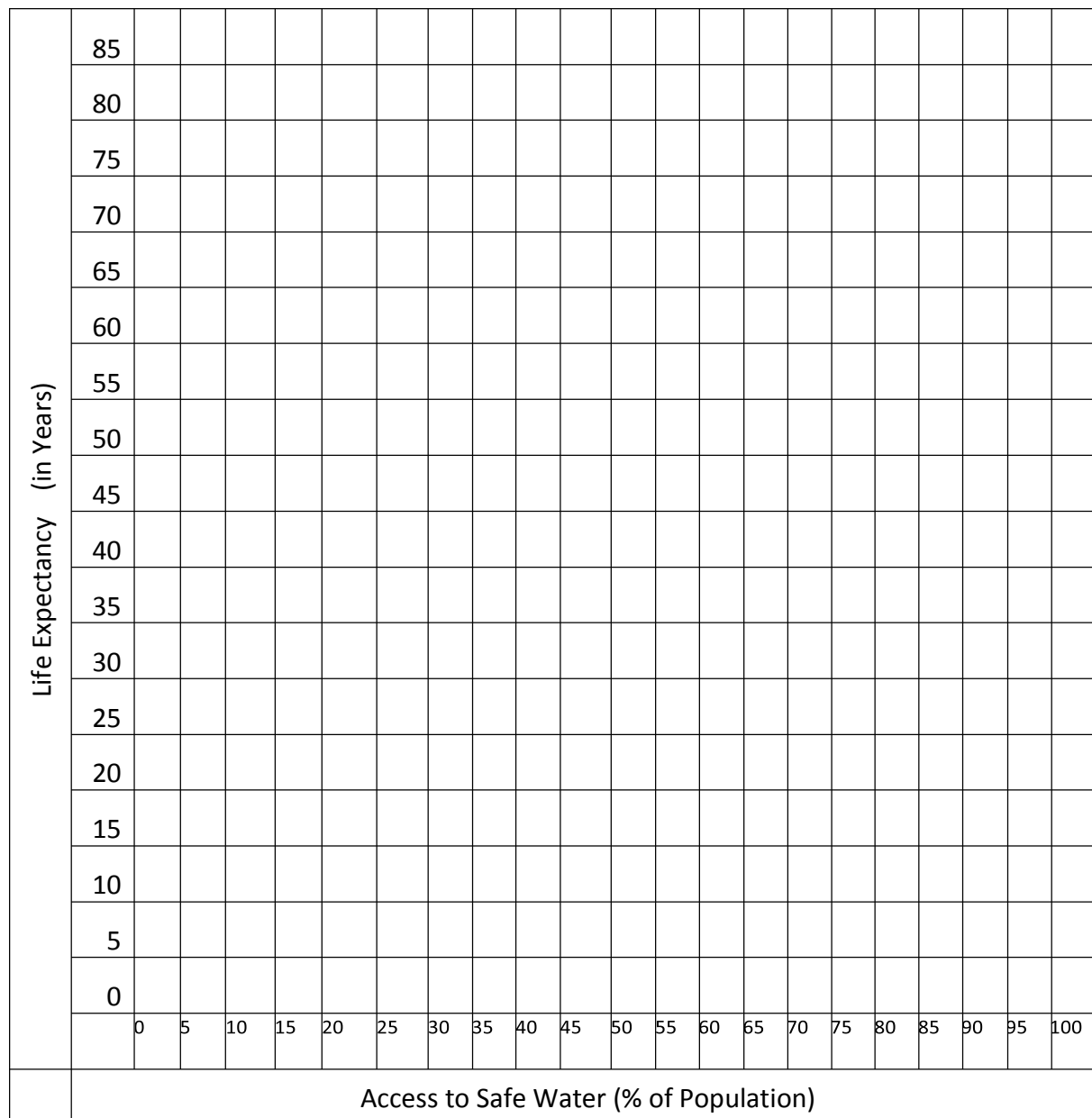
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When two pieces of information occupy the same spot on the graph put the second one (if larger) behind or just to the side.



Using the following colours show regional information.

Region	Americas	Europe - West Asia	Africa	South Asia	East Asia	Mid-East
Colour	Yellow	Orange	Blue	Light -Blue	Red	Green



Summary:

1. Find the ten countries which have the lowest life expectancy. For each of these countries, find the mean (average) life expectancy and the mean percentage of people who have access to safe water.

2. Find the ten countries which have the highest life expectancy and do the same calculations.

3. State what differences you notice and try to give explanations for these differences.

4. Using evidence from the data (graph) explain what trends you see with the relationship between access to clean water and life expectancy.

The following is the United Nations Declaration of human rights read through these and then explain why access to clean water should be the 31st article.

<http://www.un.org/en/universal-declaration-human-rights/index.html>

Notes: Millennium Development Sanitation goals of the WHO (World Health Organization) for 2015

- 884 million people do not use sanitary sources of drinking water
- 2.6 billion people do not use proper sanitation

[illegible]

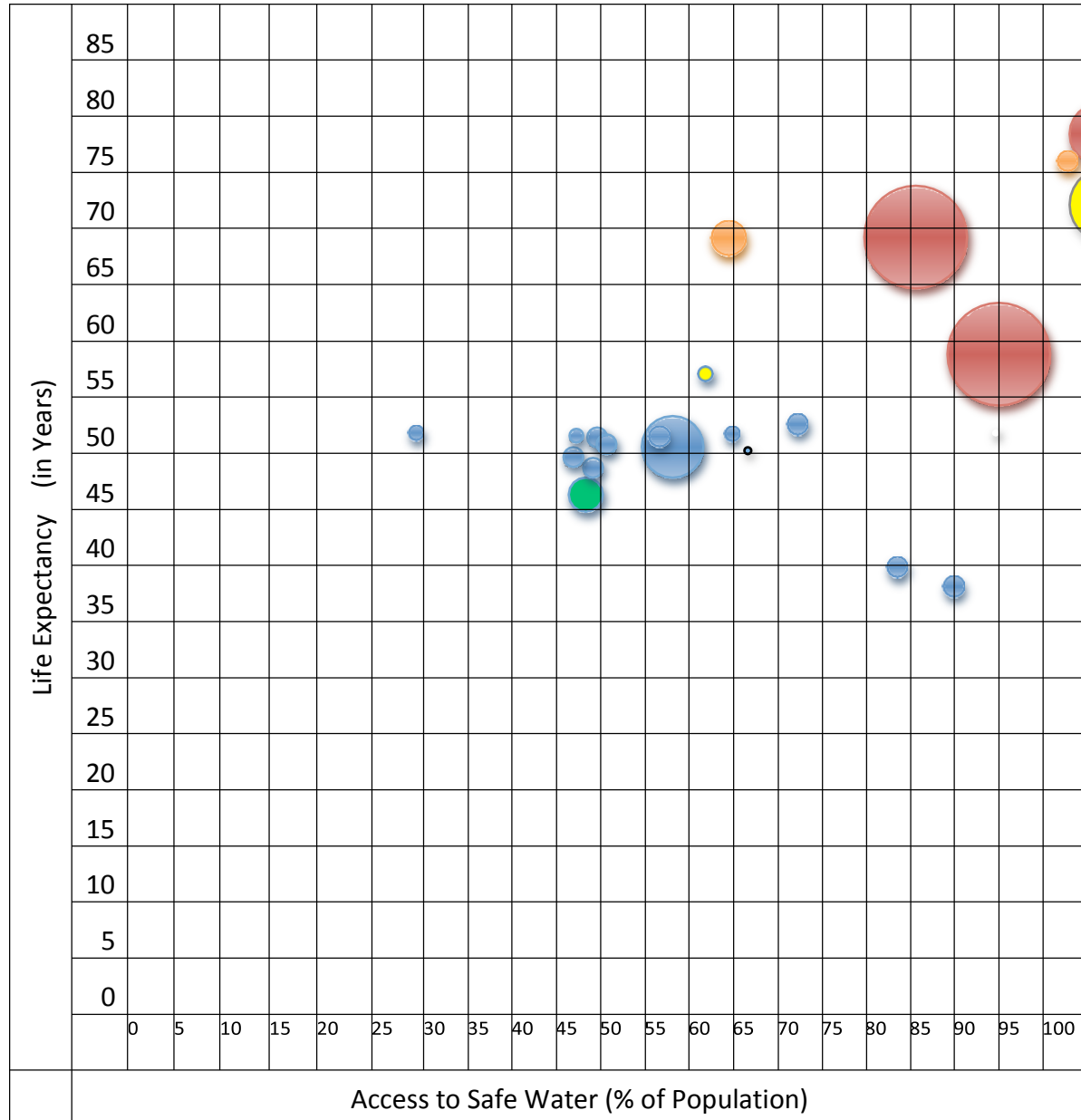
Life Expectancy and Access to Safe Water (Solution)

Name: _____

Plot the data from the Life expectancy vs. Water Chart on this graph as a scatter-plot where each is a separate bit of information. Graph the countries by size using the following size comparisons (in millions).

When two pieces of information occupy the same spot on the graph put the second one (if larger) behind or just to the side. Using the following colours show regional information.

Region	Americas	Europe - West Asia	Africa	South Asia	East Asia	Mid-East
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The Learning Process

Inquiry Process: Immersion - *Define Topics, Build Background and Invite Curiosity*

Traits

- Create self-reliance when interacting with a variety of media to explore and develop background knowledge
- Responds to text by jotting or drawing questions, connections, and reactions
- Works productively with groups to create a plan
- Identifying the Main ("Big") Ideas
- Completed a conference to confirm Main ("Big") Ideas

Step 1: *The BIG Question (What is the big idea being investigated?)*

Step 3: *Conference Notes*

Level:

Distinction = 4, Proficiency = 3, Emerging = 2, Beginning = 1

Inquiry Process: Investigation – *Developing Questions, Searching for Information and Answers*

Traits

- Listens, talks, views, and reads to gain information
- Uses the Q-chart to develop questions for investigation
- Works productively with teams to monitor schedules and task completion
- Completed a conference to develop questions

Guiding Questions *(One (1) guiding questions from each column and each row.)*

	Is/Is not	Do\Did(not)	Can (not)	Would/Should	Will	Might/Could
Who						
What						
Where						
When						
How						
Why						

Write out the completed questions in full. (You may change these or add to them during the process.)

Who	
What	
Where	
When	
How	
Why	

Step 3: *Conference Notes*

Check off:

Distinction = 4, Proficiency = 3, Emerging = 2, Beginning = 1

Inquiry Process: Integration – *Intensify research, Synthesize Information, Connect Knowledge*

Traits

- Engages in deeper reading and researching: Books, articles, and websites.
- Checks sources, determines reliability
- **Synthesizes information**
- Works productively with teams to monitor task completion and sharing
- Use appropriate technology as a tool to help gather and analyse information, solve problems, and communicate.
- Completed a conference concerning

Step 3: Conference Notes

Level:

Distinction = 4, Proficiency = 3, Emerging = 2, Beginning = 1

Inquiry Process: **Instruction** – *Sharing Learning and Demonstrate their Understanding*

Traits

- Completed a conference
- Demonstrates learning and understanding in a variety of ways
- **Teaching others**
- Reflects upon and articulates **the learning process**
- Defends and reflects upon the cooperative procedure

Step 3: Conference Notes

Level:

Distinction = 4, Proficiency = 3, Emerging = 2, Beginning = 1