

Teacher(s)	Samuelson, Davidson	Subject group and discipline	Individuals and Societies		
Unit title	Be Water Wise	MYP Year	Year 1	Unit duration	6 weeks

Inquiry: Establishing the purpose of the unit

Key concept	Related concept(s)	Global context
Systems	Causality, Sustainability	Identities and Relationships
Statement of inquiry		
<i>The sustainability of the earth's water system is dependent on the relationship between humans and the environment.</i>		
Inquiry questions		
<p>Factual:</p> <p>How do we use water in our daily lives?</p> <p>How does our local water usage affect our waterways?</p> <p>What is a watershed?</p> <p>What is the water cycle?</p> <p>How does Songdo manage its water?</p> <p>Conceptual:</p>		

<p>How does water impact where we live?</p> <p>How does water pollution affect our waterways?</p> <p>How does water impact where we live?</p> <p>Debatable:</p> <p>Should we be concerned about water scarcity around the world?</p> <p>Does it matter if we waste water?</p>		
Objectives	Summative Assessment	
<p>SW assess the impact of human activities and technologies on the sustainability of water resources.</p> <p>SW investigate the factors that affect water quality.</p> <p>SW demonstrate understanding the characteristics of the earth's water systems and the influence of water systems on a specific region.</p>	<p>Outline of summative assessment including assessment criteria:</p> <p>Criterion A: knowing and understanding: Read and answer questions Case Study: South African water crisis</p> <p>Criterion B: investigating Home Water Survey Investigation</p> <ul style="list-style-type: none"> - Research question + justification - Notes/ data keepig with graphic organizer <p>C: communicating (data/results- slideshow)</p> <p>Mr. Davidson's Exemplar</p>	<p>Relationship between summative assessment task(s) and statement to inquiry:</p> <p>Through the inquiry students will understand their relationship to water and become stewards in water conservation. They will be able to explain how their use of water impacts the environment. Students will also understand how the I&S criterion work together to form an inquiry cycle.</p> <p>Students will complete an investigation about how much water they/their family consumes in a week's time. SW record data, organize, and present data. SW write IVF paragraph to demonstrate a new understanding about water sustainability based on their research.</p>

Approaches to learning (ATL)
<p>Critical thinking skills:</p> <ul style="list-style-type: none"> ● Gather and organize relevant information to formulate an argument ● Revise understanding based on new information and evidence ● Propose and evaluate a variety of solutions <p>Research skills:</p> <ul style="list-style-type: none"> ● Collect, record and verify data ● Process data and report results ● Collect and analyse data to identify solutions and make informed decisions

Action: Teaching and learning through inquiry

Content (what will you teach?)	Learning experiences (what will the students do?)	Formative assessment	Differentiation
<ol style="list-style-type: none"> 1. Inquiry regarding water in our daily lives 2. Water cycle 3. Watershed <ol style="list-style-type: none"> a. What is it b. Mapping it c. cause/effects of ... 	<p>Inquiry:</p> <ol style="list-style-type: none"> 1. Water Quiz: True/ False introductory game to test students' knowledge of water facts and issues 2. Imagine a World: quickwrite Students will imagine their world without water. 	<ol style="list-style-type: none"> 1. Dirty Water... So What? Jigsaw activity (Criterion A) 2. Bibliography in reverse- students use this bibliography to seek answers in inquiry (Criterion A, D) 3. Home Water Use Survey- convert to litres (A, B, C, D) 	<p>Strategic groups</p> <p>Image-based word wall</p> <p>Leveled Text, based on lexile</p>

<p>4. Pollutants/contaminants in water</p> <ol style="list-style-type: none"> Types and their effects Article on Plastics (CNN) <p>Formative Pract with Criterion A:</p> <ol style="list-style-type: none"> Article with data- water issues in South Africa Article with drought in Somalia Jakarta article- rising sea levels <p>5. Case studies on water scarcity (see textbook and Newsela)</p> <p>6. Water scarcity + economic water scarcity</p> <p>Potable vs. nonpotable</p> <p>7. Investigation</p> <p>Word Wall Vocabulary</p> <p>Watershed</p> <p>Pollutants</p> <p>Microplastics</p> <p>toxins</p>	<ol style="list-style-type: none"> Activity- How Much Water do we Have? P. 14 Activity <i>Be a watershed-</i> create a living river Activity- Contaminants p. 16 Map our local watershed- Flow activity p.11 DIY groundwater model- activity Nurdles- need activity and formative practice Plastic Ocean film + need to build formative lessons <p>Investigation:</p> <ol style="list-style-type: none"> Activity- teach water scarcity Water Usage- modify for our purposes and include opportunities to graph/chart information 	<ol style="list-style-type: none"> Catching fog to help combat Peru's water shortage Why Most Rain Never Reaches The Ground – Minute Earth How Do Tropical Rainforests Make Clouds? Microplastics in our mussels: the sea is feeding human garbage back to us 	
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<p>Ecosystem</p> <p>Surface water</p> <p>Ground water</p> <p>Scarcity: The absence or shortage of something</p> <p>Economic water scarcity: People don't have access to clean/safe water</p> <p>Physical water scarcity: Limited or no supply of water (drought)</p> <p>Potable water: Water that is safe to drink or cook with</p> <p>Natural Resource: A source that is provided by nature that can be used by people Examples of natural resources include water, light and air</p> <p>Waterborne diseases: Illnesses that are caused from drinking contaminated or unclean water</p>			
<p>Resources used for the unit</p>			
<p>Textbook- Exploring Global Issues</p> <p>Ch. 4 "Water" p. 60-75</p> <p>Nasa site on water</p> <p>Info on the earth's water- teacher resource</p>			

[Video](#)- students and access to clean water

[Video](#)- water challenge

[Handout](#) for annotating

Geography Alive! Textbook Chapter 4

Watershed [game](#)

South Africa water crisis- [article](#)

Rivers Deltas- [article](#)

[Project Flow](#)

[The Water Project](#)

[The water cycle](#)- interactive

[Watershed](#)- visual aid

<https://www.nurdlehunt.org.uk/>

[Waterfootprint.org](#)

[How do watersheds work?](#)

[Major Rivers of Korea](#)

Chasing Ice Documentary + [Teacher's Guide](#)

Possibility for formative practice with Criterion A and D

Flood Control Websites

1. http://www.geumriver.go.kr/eng/mnu_04.html
2. <http://www.nakdongriver.go.kr/html/eng/main.html>

<ul style="list-style-type: none"> 3. http://www.yeongsanriver.go.kr/contents.do?S=S02&M=04010000000 4. http://www.hrfco.go.kr/eng/service.do <ul style="list-style-type: none"> ii. Four Rivers Project iii. Rivers of Korea iv. http://www.mdpi.com/2073-4441/9/9/717/htm

Reflection: Considering the planning, process and impact of the inquiry

Prior to teaching the unit	During teaching	After teaching the unit
<p>We will pick up more time from streamlining aspects of previous summative assessments. The systems view will inquire into the various systems that humans successfully or unsuccessfully employ to manage water scarcity and pollution.</p> <p>This unit will currently focus on flawed human and natural systems of water management. By analyzing these systems students will understand the goal and focus of our UN SDGs and will create their own sustainable practices that will represent a positive system of water management.</p>	<p>In the future, with more time, we can integrate examples of humans creating sustainable changes to natural and human water systems. This will show action that humans are currently taking to solve this issue. It falls very closely in line with our statement of inquiry.</p>	<p>Next year this unit will be more developed to tie together aspects of water pollution and waste as well.</p> <p>Potential plans for next year's unit:</p> <p>Qualitative vs. Quantitative Data</p> <p>Tracking water usage before/after 'IF-THEN' plans on scatterplot.</p>