# Assignment #3 – Unit Table – Water in Our World

# Culminating Task: Students have been asked to apply their knowledge of water in our world to creating posters surrounding issues and human impacts on water pollution, scarcity and/or waste and conservation. The posters made at the end of the unit will be put up for display in an exhibit organized by teacher and students for parents, other students and faculty in order for them to demonstrate what they have learned during the unit.

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| Lesson One |

| Lesson Topic | Expectations | Lesson Outline: Learning Activities and Instructional Strategies | Assessment | How it Relates to Culminating Activity |
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| **The Water Cycle** | **2.4** investigate the stages of the water cycle, including evaporation, condensation, precipitation and collection  **2.6** use appropriate science and technology vocabulary, including *solid, liquid, vapor, evaporation, condensation, and precipitation* in oral and written communication  **2.7** use a variety of forms to communicate with different audiences and for a variety of purposes | **Minds On**: Read Aloud *The Drop Goes Plop* to introduce students to the water cycle  **Activity**: Discuss water as a major part of the environment and how it exists and is recycled on Earth in three states – identify and order the stages as a group using large poster/diagram to explain how the cycle works and discuss examples of evaporation and precipitation.  -After students learn the main parts, the students are provided with construction paper, cotton balls, glue, chalk, blue confetti, markers and labels (precipitation, condensation and evaporation) to create their own water cycle.  -Students will write about the stages in water cycle to be attached to their diagram  **Consolidation:** Start “word wall” for this lesson through discussion of how the water cycle affects the planet and start thinking about human impact on water as a non-renewable resource (waste, conservation)  -Students are given their “my water journal” to be kept throughout the unit and write down key words and definitions that are posted on the “word wall” | -Assess student understanding of water cycle through diagram and written component (labeled correctly, clearly indicates understanding of stages and where they take place)  -Students assess their own previous knowledge when thinking, relating and discussing human impacts and the importance of the water cycle on earth  -Exit ticket: name the three stages of the water cycle | Provides foundational knowledge and understanding of concepts. Students can apply this knowledge to their understanding of issues surrounding water scarcity and conservation, pollution and human impacts on water as a non-renewable natural resource |

CROSS CURRICULAR CONNECTIONS COULD INCLUDE: Art (diagrams) and Language (through discussion, journals and word wall)

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| Lesson Two |

| Lesson Topic | Expectations | Lesson Outline: Learning Activities and Instructional Strategies | Assessment | How it relates to culminating activity |
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| **What role does water play in our world?** | * 1. Assess the impact of human activities on water in the environment   **3.3** describe ways in which living things, including humans, depend on water | **Minds On:** Lesson begins with students being given a riddle to decipher: “I run but never get tired, If not contained, I go with the flow. I have many names depending on my size or temperature. What am I?”  **Activity:** The students are given various cutout images to table groups (of 4-6) and asked to organize their images in groups based on how they relate to water. As a class we will place cutouts on master chart (with headings determined as a group) and discuss how the ways we use water could affect the water cycle. Some images will not fit into a category nicely but rather, will be detrimental or dirty our water (garbage, medication, cleaning supplies, etc. and will be discussed as to how they get into water supply)  “Why do we need water?” (“We need water to drink”, “to take baths/showers, brush our teeth”, “to cook, eat and grow food”)  “What types of activities do we use water for?”(Swimming, boating, fishing, water sports”)  “What else uses water to live?” (“Fish live in water”, “plants and animals need water to survive”)  Students are given a “water tracking sheet” to track their households water usage until the next lesson (one week)  **Consolidation:** Charades – students are separated in two or four groups to act out activities or uses of water for the class to guess  In journals answer these questions, **“**What happens if there is not enough water to go around”, “why is it important to keep water clean?” | -Observation of groups organizing images as they relate to water (informal assessment for learning)  -Journal entries assessed for learning | -Reinforces and develops knowledge of relationships with water around the world and the importance of water to living things.  -Students begin developing an understanding or reflection of their personal water use  -Students will need this understanding to create an effective poster and presentation  -Word wall discussion and contribution |

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| Lesson Three |

| Lesson Topic | Expectations | Lesson Outline: Learning Activities and Instructional Strategies | Assessment | How it relates to culminating activity |
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| **Water use, scarcity and conservation** | * 1. assess personal and family uses of water as responsible/efficient or wasteful, and create a plan to reduce the amount of water used, where possible   **3.6** state reasons why clean water is an increasingly scarce resource in many parts of the world | **Minds On:** Students take out their ‘water tracking sheets’ that have been used to record water use at home over the past week. In a think, pair, share, students discuss the ways that they used water the most in their household and a minimum of two ways that they could reduce their water usage at home.As a class, we create a mind map surrounding the word CONSERVATION and apply their ideas to conserve water at home**.**  **Activity:** Discuss fresh water and salt water. Each child is given a picture of a measuring cup on it (pre-segmented), a map of the world and coloured pencils. At front of class is an actual measuring cup with 4L of water in it to represent all of the water on earth. Students are asked to estimate how much of the water they think is available for human use (fresh water). Discuss oceans on the map (97%). Colour largest part of their measuring cup red to represent salt water. Pour that water (120 ml) out of real measuring cup. Explain some is fresh water frozen in glaciers (roughly 2% - 88ml out of cup) – have them colour second largest section purple (frozen fresh water). Discuss how the entire world is supposed to sharethe 1% (32ml)and issues surrounding scarcity  **Consolidation:** As a class we discuss reasons why it would be important to conserve water around the world and keep it clean, not just in our homes. Students write a brief reflection in their journals about water use in their home and two ways they can help their whole family reduce water waste | -Water tracking sheets can be used as an informal assessment tool to determine understanding about how and when water is used  (Tracking sheets have questions that allow for deeper consideration which can also be assessed)  -Students label their measuring cup as “salt water – not usable for humans” (or a big X),”Frozen fresh water” – not accessible (or another x) and “fresh water” – usable – this can be used as a tool to assess as learning  -Journal entries assessed for understanding | -Encourages deeper consideration of water use, waste, scarcity and conservation  -Water tracking charts and reflections used in CT  -Word wall discussion and contribution |

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| Lesson Four | | | | |
| Lesson Topic | | Expectations | Lesson Outline: Learning Activities and Instructional Strategies | Assessment | How it relates to culminating activity | |
| **Water Pollution** | | **1.1** asses the impact of human activities on air and water in the environment, taking different points of view into consideration and plan a course of action to help keep the air and water in the localcommunity clean | **Minds On:** Lesson begins with students at the carpet in a circle playing the clapping game naming reasons why the earth needs water. Clap-Clap-Water-Clap-Clap-“Rain”-Clap-Clap-“Food”-Clap-Clap-“Drinking”-Clap-Clap-“Plants”-Clap-Clap-“Swimming”, etc.  **Activity:** Students and teacher bring in various pieces of garbage and waste from home (or lunches) and oil to be put in four shallow pails of water that sit until the next science unit (one week). Once the garbage is all put into the bucket we will answer some questions using a chart, “what we predict will happen to the water”, “what will happen to the water?”, “will we be able to remove the garbage?” , “will the water still be dirty?” and discuss answers in a think pair share  **Consolidation:** Using their measuring cup lesson as a reflection, students will write in their journals what the dirty water could represent in our world (small amount of water on earth polluted – less to use). Why we need to keep it clean and protected. | -Journal entry used as ongoing assessment  -Exit ticket: Name three living things that could be affected by poor quality of water. | -Pictures of experiment will be used in exhibit  -Students will gain an understanding of the importance of bringing awareness to this issue  -Word wall discussion and contribution | |

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| Lesson Five |

| Lesson Topic | Expectations | Lesson Outline: Learning Activities and Instructional Strategies | Assessment | How it relates to culminating activity |
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| **Water Pollution** | **1.1** asses the impact of human activities on air and water in the environment, taking different points of view into consideration and plan a course of action to help keep the air and water in the localcommunity clean  **3.6** state reasons why clean water is an increasingly scarce resource in many parts of the world | **Minds On:** Lesson begins with teacher reading the book ‘Oil Spill’ by Melvin Berger  **Activity:** After examining buckets of polluted water and recording some observations on the board or chart paper about the water, students work in groups on one bucket of polluted water to remove the garbage and oil (pollution) – work to get the water back to the way it was before the class put garbage and oil in it and discuss the word ‘irreversible’, again recording observations and making connections to the environment  **Consolidation:** Class will discuss the challenges that they faced trying to reverse the effects of water pollution in their buckets and the reasons why it is important to keep water clean  Students write in their journal about connections to the experiment they did and what they know about the water cycle | Exit Ticket – Can we always see when the water is polluted?  What surprised you today about the challenges to clean water? | Provides knowledge and understanding of concepts that encourage students to create meaningful posters raising awareness to an issue surrounding water pollution and responsibilities stewardship, and human impact. |