**Lesson Design Template**

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| **Lesson Title: Grade 7/8 Science – The Water Cycle Course: Science**  **Designers: Ms. Fulmek and Ms. Zinger** | |
| **Learning Outcomes/Intentions** | |
| **Formal Unit Outcome(s):**  **Grade 8 Science – Earth and Space Science: Water Systems on Earth**  **WS8.1 - Analyze the impact of natural and human-induced changes to the characteristics and distribution of water in local, regional, and national ecosystems**  **d.** Apply the concept of systems as a tool for interpreting the structure and interactions of water systems by constructing representations of systems such as the water cycle, watersheds, and continental drainage basins and showing interrelationships between parts of the system.  **e**. Construct a written, visual, or dramatic representation of the water cycle, including showing or explaining how a single particle of water can travel through the cycle over extended periods of time. | |
| **Understandings:**  *Learners will understand how the water cycle works.* | **Essential Questions:**  *What is the water cycle?*  *How does the experiment represent the water cycle?*  *What is included in the water cycle?* |
| **Knowledge:**  *Learners will know what the water cycle includes and how these factors work together.* | **Skills:**  *I can predict, question, observe and record relating to the water cycle experiment.* |
| **“I can . . .” statements:**  *I can follow steps and procedures to make a model representing the water cycle.*  *I can predict, question, observe and record.*  *I can explain the parts of the water cycle and how it works.* | |
| **Assessment Evidence** | |
| **Formative Assessments (Assessment for Learning):**   * Observations of questions, discussions, making models | |
| **Summative Assessments (Assessment of Learning):**   * Ability to make water cycle model * Exit slip | |
| **SAFETY** | |
| Careful of the hot water, teacher will put hot water in the bottle.  Bottles have sharp edges, be careful. | |
| **Materials** | |
| * 2L pop bottles * Aluminum trays * Ice cubes * Hot tap water * Grade 8 text book for reference | |
| **Learning Plan** | |
| What terms have you heard about the water cycle? What does ‘cycle’ imply?  Write them on the board, define them.  Terms from <https://www.nationalgeographic.org/encyclopedia/water-cycle/>  Terms:   1. Water cycle - the cycle of processes by which water circulates between the earth's oceans, atmosphere, and land, involving precipitation as rain and snow, drainage in streams and rivers, and return to the atmosphere by evaporation.   What are the main processes within the water cycle?  **Evaporation**: Process when liquid’s surfaces change to a gas, which is water vapor. Water vapor is in the air we breathe. What are liquids on Earth that evaporate?  **Condensation**: Process of gas changing to a liquid in the atmosphere. Gas condenses (become very closely compact) and clouds form and fill up with water vapor. Then what might happen?  **Precipitation**: Not a process. Result of condensation, when clouds get full of condensed liquids. Rain, snow, sleet, hail.  Explain experiment to learn about these terms together as part of the water cycle.  Predict what the model will do. Record – draw or write. What will you see happen?  Have students gather materials at this point.  Do experiment from Science 8 textbook. Pg. 276  In groups of 3-4  Record observations.  After, ask,  What happened? What did you observe?  Was your prediction right or wrong?  Why did this happen? How does the model work?  What would happen if the water was polluted in the cycle? If students don’t get this right away, model it.  What would happen if tap water was colder?  How does this represent the water cycle on Earth?  If time permits, exit slip  What is one part of the water cycle? How is it important to the entire cycle? | |

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Water Cycle Experiment

Research: What is evaporation, condensation and precipitation?

Hypothesis: What do you think will happen in your experiment? Write or draw.

Experiment/Result: What happened? Why?

Reflection: What would happen if the water was polluted?

How does this represent the water cycle on Earth?