**Teacher Name:** Teacher Name **Co-Teacher Name:**

**Course/Grade:** Science 6 **Date:** Click here to enter text. **Period/Block:** 50

**Unit Title:** Earth’s Weather, Climate, and Systems

**Instructional Sequence:** 1 of 3

**Lesson:** Lesson 1 of 7 (Engage)

**Phenomena:** Water goes through a continuous cycle.

**Anchoring Event:** Turn on water faucet in classroom (or show a glass of water) ask students where does our local water come from?

**Guiding Question(s):** “Where does the water we use daily in Omaha come from?”

**ACT College & Career Readiness Standard(s) for Science:** IOD 202 Identify basic features of a table, graph, or diagram (e.g., units of measurement); EMI 201 Find basic information in a model (conceptual)

**Content Standards/Indicators:**

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| --- | --- | --- | --- |
| Standard(s): SC.6.13.5 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter associated with Earth’s materials and processes. | | | |
| Indicator(s):  SC.6.13.5.A Develop a model to describe the cycling of water through Earth’s systems driven by energy from the sun and the force of gravity.  *Clarification Statement:* Emphasis is on the ways water changes its state as its state as it moves through the multiple pathways of the hydrologic cycle. Examples of models can be conceptual or physical.  *Assessment Boundary:* A quantitative understanding of the latent heats of vaporization and fusion is not assessed. | Science and Engineering Practices | Disciplinary Core Ideas | Crosscutting Concepts |
| **Developing and Using Models** Develop a model to describe unobservable mechanisms***.*** (MS-ESS4-4) (6.13.5.A)  **Constructing Explanations** Construct an explanation that includes qualitative or quantitative relationships between variables that predict phenomena. (Secondary) | **The Roles of Water in Earth’s Surface Processes**  [Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land](http://ngss.nsta.org/DisciplinaryCoreIdeas.aspx?id=33&detailid=184). (MS-ESS2-4) (SC.6.13.5.A) | **Energy and Matter** Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter. (MS-ESS2-4) (SC.6.13.5.A)  **Cause and Effect** Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS2-5) (SC.6.12.4.A) |
| **English/Language Arts Connections**  **RST.6-8.1** Cite specific textual evidence to support analysis of science and technical texts. **RST.6-8.7** Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).  **Math Connections** **MP.2** Reason abstractly and quantitatively.   **6.EE.B.6** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.  **7.EE.B.4** Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. |

**Materials & Resources:** eScience3000; <https://youtu.be/-bvZCdMecEo>; <https://youtu.be/tuYB8nMFxQA>; Article from the Omaha World- Herald: Has your Omaha Water tasted or smelled different?  Here’s why

**Accommodations for Students with IEPs or 504s:** Note: Teacher must refer to student IEP’s or 504’s for specific accommodations related to each child.

**Literacy Strategies:** Sentence Stems; Think Aloud; Oral Discussions; Non-linguistic Representations

**Procedures/Routine Focus:** Hand-raising; Giving directions explicitly and visually

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| --- | --- |
| **Anticipatory Set:** Turn on water faucet in classroom (or show a glass of water). Proceed to step 1. | |
| **Learning Goal(s):**  **I can (knowledge & skill):** I can develop a model to describe the cycling of Earth’s water through Earth’s systems. | |
| **Procedures (non-linear)**  **Modeled:** | **Shared:** |
| 2. Teacher records student responses on the board to the guiding question.  4. Share with students that Omaha area receives their water from 3 sources: Missouri river, Platte river, and Dakota sandstone aquifer. An aquifer is an area underground that holds water in the gaps between rock, sand or gravel. Sort of like an underground lake or stream.  Other parts of the state receive water from the Ogallala aquifer and other groundwater sources. (5 min).  5. Prompt students to think about if they’ve ever learned anything about the water cycle. In this unit we will be defining what our Earth’s water cycle does. (1-2 min)  6. Explain to students that over the course of the unit they will be working in small groups to develop a game about what they are learning about the water cycle. Each day groups will develop engaging questions based off of what they’ve learned that day. By the end of the unit each game will have at least 16 questions: 8 about the water on the local level and 8 about the water cycle on a global level. Today they will begin creating their game boards. Share different layouts from games in your classroom or look some up online. For example: Monopoly, Chutes and Ladders, Sorry!, etc. (10 min) | 1. To generate interest in the topic, present the guiding question: “where does the water we use daily in Omaha come from?” (2-3 min)  3. Ask students if they would want to drink or use the water from the Missouri river. Ask students to turn and talk to their shoulder partner.  Students will share out if they would drink the water out of the Missouri river and why or why not (5 minutes) |
| **Guided: N/A** | |
| **Independent:** | |
| 7. Students will receive time to work on their gameboard formats. (30 min) | |
| **Summary/Closure of Student Learning: (aligned with the learning goal(s); ex. exit slip)** | |
| Have students again respond to the guiding question with what they learned in the lesson: “where does the water we use daily in Omaha come from?” Have students respond on sticky notes or on padlet.com (2-3 min) | |

**Coursework outside of class:**