

# FLOWING WELLS

## LESSON DESIGN FORM

(Digital version at R:\Lesson Design\Lesson Design Form.docx)

Name: April Spencer  
Grade Level: 6<sup>th</sup> grade

### **Anticipatory Set**

Look at the phenomenon on the first slide and write what you notice and wonder about it.

### **Objective(s)** (Include AZ State Standard)

6.L2U3.11 - Use evidence to construct an argument regarding the impact of human activities on the environment and how they positively and negatively affect the competition for energy and resources in ecosystems.

6.W.1 Write arguments to support claims with clear reasons and relevant evidence.

- Introduce claim(s) and organize the reasons and evidence clearly.
- Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.
- Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from the argument presented.

This lesson also includes the use of science and engineering practices.

Students will analyze clues in order to make sense of a phenomenon that has been presented. They will demonstrate their understanding of this phenomenon by writing a conclusion in the form of a CER. Students will brainstorm problems caused by the phenomenon and possible solutions using the prompts provided.

### **Purpose** (Why Important to Students)

Understanding problems is key for students to take the next step in the engineering process. This activity takes students through a series of clues that help them make sense of a phenomenon caused by climate change and intensifying natural disasters in our own state.

### **Task Analysis**

<b><u>Learnings</u></b> <b>(Information)</b>	<b><u>Teacher Strategies</u></b> <b>(Examples, Materials, Modeling, etc. . . .)</b>	<b><u>Student Behaviors</u></b> <b>(Active Participation)</b>
Notice and Wonder Anticipatory set	What do you notice and wonder about the phenomenon?	Thinking and writing their notice and wonders on slates. Sharing whole group. Typing responses on the slides.
Students will be listening to the directions for the clues	Students will need a computer and headphones for the video. We will walk	Students should be actively listening and walking through the slides

	through the slides and understand the expectation for solving the clues on each of the slides.	together before getting started.
Mystery clue #1	Question: Where do you think the groundwater comes from? Why do you think this?	Students will study the graphic on the slide to answer the question using complete sentences.
Mystery clue #2	Question: What do you notice about the number of days in Tucson over 105? How could that impact the water cycle in Tucson?	Students will be looking at a graph of Tucson weather days over 105 from 1895-2022 to answer the question.
Mystery clue #3	Two satellite area maps of Tucson, one from 1965 and 2011. Question: What do these two maps show us?	Students need to figure out the difference between the two maps and notice what has changed from 1965- 2011 in the Tucson area.
Mystery clue #4	Looking at water wells in Tucson. Question: This graph shows water in monitoring wells. What do you believe is the cause of the overall groundwater decline?	Students will be decoding a graph about the water wells and trying to determine what has happened to the water in the wells from 1950-2022.
Mystery clue #5	Looking at a population graph .Question: What information does the graph give and why is it relevant to water resources?	Students will be looking at a graph of the Tucson population increase from 1960-2023 to answer a question.
Mystery clue #6	Watching a video. Question: What does the video add or confirm about your thoughts on the phenomenon?	Students will watch the video to determine if their thoughts have changed about their thinking of the phenomenon and their overall discovery of why they think it is different now.
To add more rows, right click in a cell in the bottom row, select "Insert," and select "Insert Rows Below."		

### **Closure** (Student Summary)

- Take 30 seconds to think about the problem(s) of the Santa Cruz River and the flow of water in the river.
- Take 30 seconds to think about who it affects/ involves.
- Take 30 seconds to think about what already exists that could help with the problem.

- Take 30 seconds to think about why those things are lacking/ insufficient.
- Take 30 seconds to think of what you would create to solve the problem.

**Independent Practice** (Assessment/Homework)

**Students will write a CER (claim, evidence, reasoning) about where the water in the Santa Cruz River has gone and why it no longer flows the way it used to.**