



MYSTERY #4 MIRACLE OF WATER

High School Teacher Guide

KANSAS CORN STEM

This teacher guide is broken into different sections with suggestions of how to use the reader in the classroom and provide ideas on how to extend the learning of your students. A PDF version of this teacher guide with active links can be found at kansascornstem.com under Mystery Corn Reader.

Reader QR Code Links

If your students are unable to use QR codes in the classroom here are the links to share the videos in alternative ways.

- What is an Aquifer: <https://www.youtube.com/watch?v=3AsGbZ-k3W4>
- How Farmer Conserve Water: <https://www.youtube.com/watch?v=R1Jo-qCOKrc>
- Irrigation Technology: <https://www.youtube.com/watch?v=O-w6w3aQgXA>
- Runoff Simulation: <https://runoff.modelmywatershed.org/>

Vocabulary Words

There are six vocabulary words to be found throughout the reader. They are bolded with a small explanation to help define the word. Other ways to learn more about these words are:

- Have your students find the definitions to the words on their own before reading.
- Draw pictures of the words which will help them make meaningful connections.
- Have them create online or physical flashcards, graffiti posters or a PowerPoint presentation to help them understand the meaning of the words.

Water All Around Kansas

In this section students will learn about the Ogallala Aquifer and how aquifers function. The farmer Bill video provides additional information to help them understand what an Aquifer is.

Water Fact

For many students this may be their first introduction to irrigation.

- For an additional activity have students go to google earth and look at the crop circles in Kansas. They will notice which part of the state does more irrigation based on where the crop circles are located. Encourage the students to link this observation with what they just learned about Ogallala Aquifer.

Earth's Water Is Worth Conserving

In this section students will learn basic information about Earth's water, that additional water cannot be created and how water is used. This is also the introduction to irrigation and water conservation practices.

- After students watch the farmer Bill videos have them write a short opinion essay on what they think are the best water conservation practices based on what they learned and why.
- Optional: Visit this lab and check out Lab #1: Demonstration of the amount of fresh water on Earth. You can use this as a whole class demonstration or in groups to get students thinking about how much freshwater is available for use. <https://kscore.com/lesson/waterconservation/>

Find more fun and interactive
resources at kansascornstem.com



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Play the Journey 2050 Game!

Throughout the reader students have learned that water is a limited resource. Put your student's knowledge to the test running a sustainable farm in a few different locations around the world.

- Journey 2050 will allow your students to not only learn more about water practices in Level 3, but also more about Social, Economic, and Environmental pillars of sustainability.
- There are questions for your students to ponder and respond to as they're conducting different decisions about their farms.
- Additional materials can be used with this activity to make it extend over several class periods. These are available under the educators tab of the Journey 2050 website.

Shower Curtain Watershed

This Water Science Investigation explores watershed patterns and functions. Students will create their own landscapes using various items and draping the shower curtain over their setup. You can have students add additional materials such as small houses, sprinkles (as a sediment), or other items to show the movements created by the flowing water. There is a worksheet provided that can help students through this activity.

Other Extensions

- <http://water-rocks.herokuapp.com/game/index> Game where students choose how to setup the land around a water source. Afterwards they cause rain to fall and see how well they did creating a low impact watershed.
- <https://serc.carleton.edu/eslabs/drought/1a.html> Several lessons with instructions that guide students, beginning at where water is available and moving on to watersheds, droughts, and more.
- <https://www.usgs.gov/special-topics/water-science-school/science/water-quality> Various helpful links and information provided by the U.S. Geological Society.

Additional Kansas Corn STEM Resources

This reader can be used as a stand-alone activity, or you can pair it with other Kansas Corn STEM offerings.

- **Lessons:** Water, Water, Everywhere; Concentrations; Water Quality; and Water Conservation lessons can be found in our lesson library. The lessons come with a teacher guide and training videos. <https://kscorn.com/topic/water/>
- **Breakout Box Challenge:** Challenge your students to learn more about water using a breakout box. Wondering about Water would go well with this reader. It is available online or for physical breakout boxes. Check out the lessons and others at <https://kscorn.com/topic/breakout-box/>
- **Guest Speaker:** Request a guest speaker to visit the classroom and expand learning about ethanol and corn. <https://kscorn.com/guestspeaker/>
- **Lessons:** Other middle school labs can be found in the lesson library. Check out the TEACH-FLEX lessons that use easy to find classroom materials to complete a lab. <https://kscorn.com/lesson-library/>
- **Seed to STEM Workshop:** Seed to STEM is a 2-day workshop where teachers learn 10 labs, attend a farm dinner and ethanol plant tour and receive \$500 in supplies to use in their classroom. To learn more about the workshop go to - <https://kscorn.com/middle-school-science-teacher-professional-development/#AboutSeedtoSTEMWorkshops>