



MYSTERY #4 MIRACLE OF WATER

Middle 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 provides 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.

Earth's Water

Students will learn basic information about Earth's water, that additional water can not be created and how water is used. This is also the introduction to irrigation and water conservation practices. 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 easily found.

Getting to know the Ogallala

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. Use the review and reflect questions to dig deeper into the topic.

Find more fun and interactive
resources at kansascornstem.com



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Water Is Worth Conserving!

This section provides an introduction to different types of practices used to conserve water. After reading this section and watching the videos students will be able to complete the Agriculture Water Conservation Practices worksheet.

Model Watershed - Runoff Simulation

Using the QR code on the last page, students can access an online runoff simulation. The provided worksheet can be used to assist students with the activity. Students will use the simulation to construct different types of land development, coverages, and soil. They will have various questions to consider while working through the simulation which you can always expand upon.

Optional: Students can be prompted to compose their best land development and coverage proposal and present to the class or in small groups.

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.

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 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>