

Colorado Academic Standard Focus

4th & 5th Grade Reading, Writing, and Communicating:

- Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes. (CCSS: RL.5.4)
- Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. (CCSS: RL.4.1)
- By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. (CCSS: RI.4.10)

4th Grade Social Studies (History):

- Analyze primary source historical accounts related to Colorado history to understand cause-and-effect relationships (DOK 2-3)

National Agriculture Literacy Outcomes

Agriculture and the Environment

- Recognize the natural resources used in agricultural practices to produce food, feed, clothing, landscaping plants, and fuel (e.g., soil, water, air, plants, animals, and minerals) (T1.3-5.e)

Answers

Page 3 - Locating Your Watershed

Step 4: Watersheds that carry water to the Atlantic Ocean are: South Platte River and Arkansas River

Step 5: Watersheds that carry water to the Pacific Ocean are North Platte; Yampa River; Colorado River; Gunnison River; Rio Grande River; and Dolores River

Page 6 - "Google It" South Platte Basin Challenge

K-Johnstown; F-Dearfield; O-Fort Lupton; J-Eaton; G-Galeton; I-Windsor; E-Platteville; D-Mead; B-Lucerne; L-LaSalle; A-Kersey; M-Nunn; N-Keenesburg; H-Herford; C-Greeley

Information for this challenge was taken from Mike Peter's article: From Bozeville to New Windsor: How Weld towns got their Name found at: <https://www.greeleytribune.com/news/local/from-bozeville-to-new-windsor-how-weld-towns-got-their-name/>

Additional Resources

www.GrowingYourFuture.com - The Colorado Foundation for Agriculture is a 501(c)3 non-profit educational corporation and works with industry partners to help meet our shared vision of advancing Colorado agricultural literacy. We provide Agriculture in the Classroom resources and programs to Colorado educators and students, many

of which are FREE or at minimal cost. Visit our website for more information about our programs, browse our online digital library, or search the Curriculum Matrix.

Curriculum Matrix - The Agricultural Literacy Curriculum Matrix is an online, searchable, and standards-based database for K-12 teachers. The Matrix contextualizes national education standards in science, social studies, and nutritional education with relevant instructional resources linked to Common Core Standards. Below are a few lesson plans that could be used in conjunction with this Colorado Reader on Careers in Agriculture. Go to www.GrowingYourFuture.com and click on Curriculum Matrix (on the Home Page or under the Educator's Tab), search each title within the Curriculum Matrix to find these lesson plans.

<https://greeleygov.com/services/ws/home> - The City of Greeley's water conservation program is one of the largest and most successful in Colorado. Visit their Water Conservation Education page for more information on their successful water education programs including classroom presentations, "Caring For Our Watersheds" program, DVDs and videos, and tours.

www.CCWCD.org - The mission of the Central Colorado Water Conservancy District is to develop, promote, and implement water conservation, augmentation, and management strategies to protect water resources for the benefit of the citizens of the District and Subdistrict. CCWCD strongly believes that the key to protecting our water resources while sustaining agriculture production is through education. They offer educational opportunities to their citizens from kindergarten through senior including the Children's Water Festival, Well Watch Program, and the Confluence Institute for educators. The Greeley Children's Water Festival for fourth-grade students is April 24, 2019. Contact CCWCD for more info.

PoudreLearningCenter.org - Their mission is to awaken a sense of wonder and inspire environmental stewardship and citizenship through education of students, families and local residents along the Colorado Northern Front Range. Visit their website to learn about their classroom field trips and other educational opportunities for students.

SouthPlatteBasin.com - South Platte Basin Water Implementation Plan video: <https://vimeo.com/114841419>

DenverWater.org - For Denver Water area schools, check out their Youth Education Programs, including classroom presentations and treatment plant tours. Also available on their website is the Journey of Water video series. These videos describe the story of water from the mountains to the home. The Denver Metro Water Festival for sixth-grade students is May 15, 2019. Contact Denver Water for more info.

Colorado Water Conservation Board - <http://cwcb.state.co.us/Pages/CWCBHome.aspx>

Student Activity

Where does our water come from?

IRRIGATION TUBES – YOUR OWN EXPERIMENT

After canals were dug, farmers needed to be able to get the water from the canal to the crops. Many ditches were dug and the invention of the irrigation tube was a big help.

At first, farmers made “cuts” in the ditch that would allow the water to flow. This was very labor intensive and with erosion would make the watering not even over all of the crops.

The invention of the irrigation tube, helped farmers “set” the water and allows the water to flow evenly through their crops.

All you need to try to “set a tube” is an irrigation ditch with water, a metal pipe, and a bit of “know

how.” Place the tube into the water at an angle to get as much water into

the pipe as you can. Place your hand over the end of the tube that is out of the water and “pump” the tube back and forth in the water. When water starts to squirt out of the tube, lay the end of the tube you were holding over the bank of the ditch so that gravity will help the water flow from the ditch, through the tube, to the crops. If it didn’t work, no worries, just try it again!



If you don’t have a tube or an irrigation ditch handy, you can experiment with the concept by trying the experiment below:

Siphon Experiment

For this experiment you will need:

- 2 gallon buckets
- Water
- Clear tubing approximately 3 feet in length (can be found in a science lab or purchased at a hardware store)

1. Place one bucket on a stool and the other bucket on the ground.
2. Fill the top bucket with water.
3. Place one end of the tube in the top bucket, submerged in the water at the base.

4. Create a vacuum on the opposite end by suctioning the water up the tube like drinking from a straw.

5. Once water gets to the end of the tube immediately place it in the bottom bucket.

6. What happens? In what direction does the water travel?

7. Now reverse making the water flow up into the top bucket.

8. Fill the bottom bucket with water. The top bucket should be empty.

9. Place one end of the tubing in the bottom bucket and create a vacuum.

10. Once the water reaches the other end of the tube immediately place it in the top bucket, near the base.

11. What happens? Does the water travel in the same direction?

Experiment taken from: <https://www.education.com/science-fair/article/uphill-water-flow/>

