



EXPEDITIONARY
LEARNING

Grade 7: Module 4B: Unit 2: Lesson 9

Gathering Information about Water Management: Assessing and Reading Internet Sources, Day 3



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can contrast how multiple authors emphasize evidence or interpret facts differently when presenting information on the same topic. (RI.7.9)
I can gather relevant information from a variety of sources. (W.7.8)
I can use search terms effectively. (W.7.8)

Supporting Learning Targets

- I can contrast how two authors emphasize different evidence on the topic of water management in agriculture.
- I can use search terms effectively to gather relevant information about water management.
- I can evaluate a source's accuracy and credibility.

Ongoing Assessment

- Researcher's notebook

Agenda

1. Opening
 - A. Comparing and Contrasting Authors' Use of Evidence (15 minutes)
2. Work Time
 - A. Internet Research (20 minutes)
3. Closing and Assessment
 - A. Read-aloud of Pages 203–205 of *The Big Thirst* (10 minutes)
4. Homework
 - A. Read pages 203–205 and complete Reader's Notes for pages 203–205 of *The Big Thirst*.

Teaching Notes

- In this lesson, students prepare for the Mid-Unit 2 Assessment in Lesson 10 by focusing on contrasting the types of evidence different authors use to support a similar claim.
- This will be students' third day of conducting independent internet research. In this lesson, they continue working to research supporting questions. This lesson is written assuming the use of computers to search the internet and recommends the use of a student-friendly search engine, such as Sweet Search.
- If computer or internet access is not possible in your classroom, consider arranging a visit to your school's library or computer lab or a public library. You may wish to have a research specialist (such as a school or public librarian or social studies teacher) come in to talk about and teach internet research skills.
- For homework, students will answer text-dependent questions from pages 203–205 of *The Big Thirst*. Students will need to understand this reading in order to complete the Mid-Unit 2 Assessment in the next lesson. To that end, a read-aloud is built into the Closing of this lesson, as well as some partner work in the Opening of Lesson 10.
- Post: Learning targets.



Lesson Vocabulary	Materials
<p>student-selected vocabulary; desalination</p>	<ul style="list-style-type: none"> • Domain-Specific Vocabulary anchor chart (begun in Unit 1) • Four Types of Evidence note-catcher (from Lesson 1; one per student) • Authors’ Use of Evidence about Water Management in Agriculture (one per student) • Researcher’s notebook (begun in Lesson 3) • <i>The Big Thirst: The Secret Life and Turbulent Future of Water</i> (book; one per student) • Reader’s Notes for pages 203–205 of <i>The Big Thirst</i> (one per student) • Teacher’s Guide: Reader’s Notes for pages 203–205 of <i>The Big Thirst</i> (for teacher reference)

Opening	Meeting Students’ Needs
<p>A. Comparing and Contrasting Authors’ Use of Evidence (15 minutes)</p> <ul style="list-style-type: none"> • Ask students to read the first learning target to themselves and then call on someone to read the target aloud: <ul style="list-style-type: none"> * “I can contrast how two authors emphasize different evidence on the topic of water management in agriculture.” • Remind students that they have examined author evidence, in Lesson 1 and again in Lesson 5, and that this will also be part of the mid-unit assessment in the next lesson. Emphasize that research often requires working with two sources that need to be understood and sometimes compared to see which to use. • Ask students to refer to the Domain-Specific Vocabulary anchor chart to find the four types of evidence they added in Lesson 1. Remind them that in order to compare and contrast how authors use different evidence, they must identify first what kind of evidence the author uses. Tell students that they can use their Four Types of Evidence note-catcher from Lesson 1 to compare how authors use evidence. Distribute the Authors’ Use of Evidence about Water Management in Agriculture handout • Ask students to read the first article in the handout and mark (either highlight or underline) the evidence the author uses to support the claim of the article: Agriculture should reduce the amount of water it uses. Note that this is an argumentative text, not just informative. Give students a few minutes to read and mark, then ask them to turn and talk to a partner about what they marked and what type of evidence they think the author used. Ask students to share with partners, then ask them to repeat the process for the next article. 	



Work Time	Meeting Students' Needs
<p>A. Internet Research (20 minutes)</p> <ul style="list-style-type: none"> • Tell students that they will have the next 20 minutes to find an article that answers their research question, to read the article, and to add information to their researcher's notebook. • Remind them that they should paraphrase their reading and keep all the information about their source in their researcher's notebook so they can properly cite it later using the MLA format. 	<ul style="list-style-type: none"> • During this time, consider working with a small group whose work on previous research days suggests they may need extra support with this skill.
Closing and Assessment	Meeting Students' Needs
<p>A. Read-aloud of Pages 203–205 of <i>The Big Thirst</i> (10 minutes)</p> <ul style="list-style-type: none"> • Ask students to turn to page 203 in <i>The Big Thirst</i> and invite them to read along in their books while you read aloud. • Begin reading at “The politics of water was never far from the surface in Perth” (203) and continue until “... but that building it would increase greenhouse gas emissions and so ultimately make worse the very problem it was supposedly solving” (205). Do not pause or answer questions as you read. • Point out the word <i>desalination</i>, which is first used on page 204. Ask students to raise their hand if they have inferred the definition of <i>desalination</i> from the reading. Call on one student. Listen for: “Desalination means taking salt out of water to make it freshwater.” Add this word to the Domain-Specific Vocabulary anchor chart. • Ask students to turn and talk to a partner about the gist of the excerpt. Cold call pairs to share. Listen for: “The city of Perth needs more water. Officials are considering using desalination, but there could be negative consequences if they do.” • Distribute Reader's Notes for pages 203–205 of <i>The Big Thirst</i>. Let students know that their homework is to reread pages 203–205 and answer the text-dependent questions. Remind them that the Mid-Unit 2 Assessment is part of the next lesson, and the more carefully they do their homework, the better prepared they will be for the assessment. (Teacher's Guide is provided for teacher's use). 	<ul style="list-style-type: none"> • Note students who self-assess low and consider giving suggestions for how each of them might feel more confident by Lesson 10.
Homework	Meeting Students' Needs
<ul style="list-style-type: none"> • Read pages 203–205 of <i>The Big Thirst</i> and complete the Reader's Notes. 	



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Supporting Materials



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Authors' Use of Evidence
About Water Management in Agriculture

Name:

Date:

In the excerpts below, all authors have the same claim, that agriculture should reduce the amount of water it uses. As you read, mark (underline or highlight) the evidence the authors use to support their claim and decide what kind of evidence it is.

Article 1: Tapped Out: How Will Cities Secure Their Water Future?

Posted by Brian Richter of the Nature Conservancy and University of Virginia in Water Currents on May 8, 2013

Today, global demands for food, energy, and shelter are putting unprecedented pressure on the resources of the planet. Water is at the heart of this crisis.

In fact, more than half of the world's cities are already experiencing water shortages on a recurring basis—based on findings from a study that I published, along with 13 of my colleagues, this week in the *Water Policy* journal. It was not difficult to see why so many cities got into trouble with water.

The water sources they depend upon—rivers, lakes, and aquifers—have for decades been heavily used for irrigated agriculture. Since 1950, the consumption of water globally for irrigation has tripled in volume, a trend that played a large role in enabling food production to more than double over the same period.

The result: Water-stressed cities are trying to expand in places where most of the water is already being consumed by irrigated agriculture. In fact, more than 90% of the water being consumed from those shared water sources is going to growing crops.

Promising opportunities exist to free up the water presently used in agriculture through techniques such as reducing unproductive water consumption (e.g., stopping canal leakage, reducing soil and reservoir evaporation), changing crop types, introducing rotational fallowing, temporary fallowing during droughts, or the elimination of low-value farming.

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Authors' Use of Evidence
About Water Management in Agriculture

Article 2: Another View: When Every Drop Counts: The Need for Conservation and Improved Water Management in Agriculture

Oct 18, 2012

Written by Danielle Nierenberg and Sophie Wenzlau

The 2012 drought has been the worst Iowa has experienced since 1936....

Fresh water is the planet's most essential and scarce resource. Although 75 percent of the Earth's surface is covered in water, we must rely on as little as 0.5 percent of the total water supply to meet all agricultural, industrial, domestic and ecological needs.

Water scarcity makes it painfully clear that farmers, businesses and consumers need to take concrete steps to conserve water and improve its productive use in our agricultural sector.

Let's reconsider the way we irrigate crops. Most Iowa farmers depend on Mother Nature to supply the water needed to grow their crops. And in times of drought, as Iowa farmers are well aware, crops dependent on rain will often fail.

Thankfully, there are a variety of promising techniques and technologies—such as drip irrigation—that could both conserve and increase the productive use of water in our agricultural sector while rendering Iowa's farms more resilient to the future uncertainty of our climate.

Drip irrigation is the precise application of water to plant roots via tiny holes in pipes that allow a controlled amount of water to drip onto the ground. This precise application avoids water loss due to evaporation, enables plants to absorb water at their roots (where they need it most), and allows farmers to water only those rows or crops they want to, in lieu of an entire field.



Authors' Use of Evidence
About Water Management in Agriculture

Over the course of a season, drip irrigation enhances plant growth, boosts crop yield and improves plant nutritional quality. Although not a “one-size-fits-all” solution to water challenges (it is expensive, high maintenance and does not work well in sandy soil), drip irrigation is a low-waste irrigation method capable of significantly boosting crop yields when applied appropriately, is well-suited to row crops like corn and soybeans, and, with drip tape’s lifetime of 5 to 7 years, especially when laid below the surface, can be a wise long-term investment that is significantly more reliable than rain-fed agriculture in times of drought.

Nierenberg, Danielle, and Sophie Wenzlau. "Another View: When Every Drop Counts: The Need for Conservation and Improved Water Management in Agriculture." The Des Moines Register, Web. <http://blogs.worldwatch.org/nourishingtheplanet/wp-content/uploads/2012/10/Another-View_When-Every-Drop-Counts_Des_Moines_Register.pdf>



Authors' Use of Evidence
About Water Management in Agriculture

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Name:

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Date:

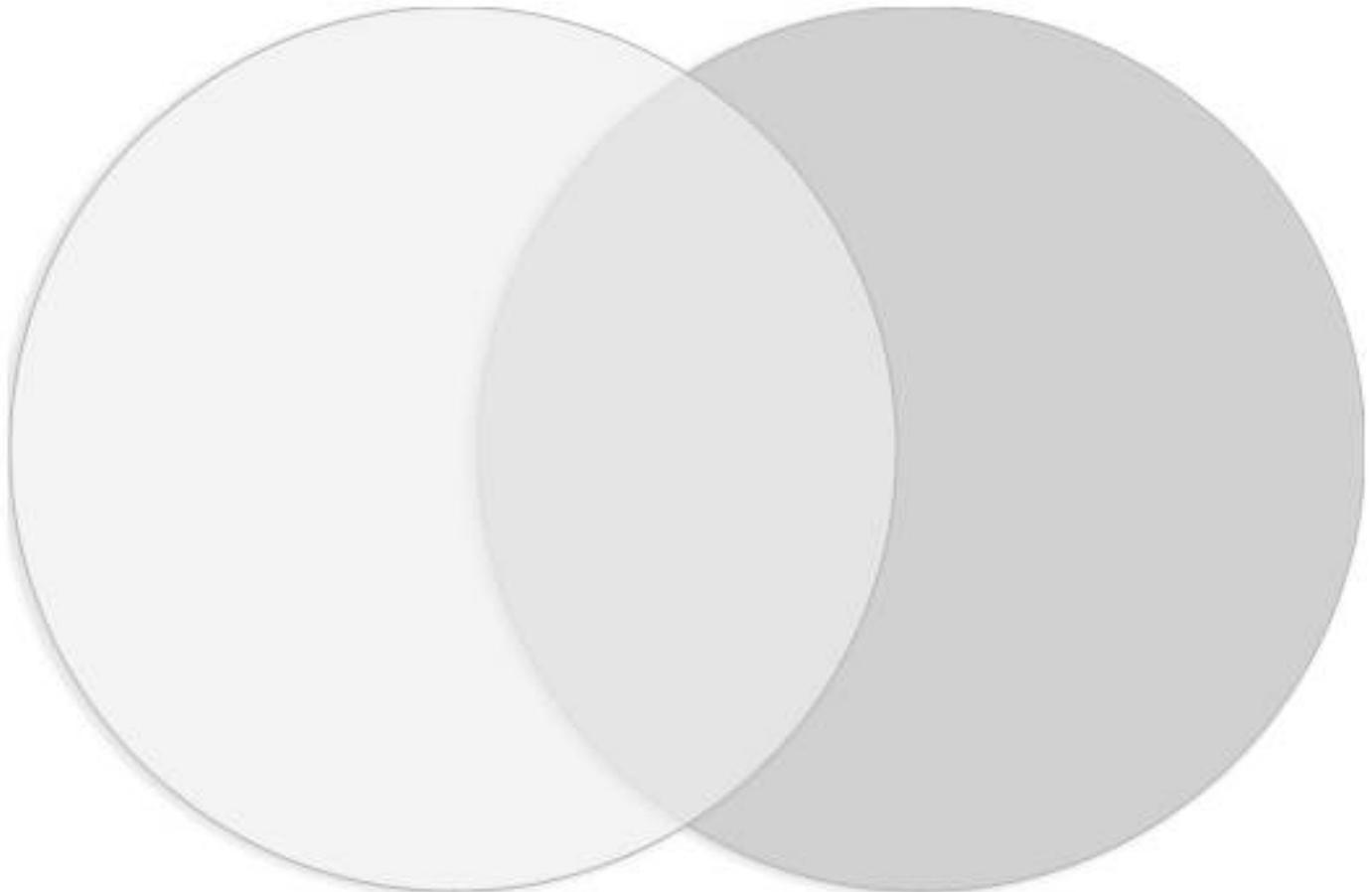
Venn Diagram

Common Claim:

Evidence ONLY from Excerpt 1

Evidence in BOTH

Evidence ONLY from Excerpt 2





Reader's Notes for Pages 203–205
of *The Big Thirst*

Name: _____

Date: _____

Questions	Notes
<ol style="list-style-type: none">1. Reread the paragraph that begins with “Environmentalists were equally opposed ...” on page 204. What is <i>brine</i>?2. What does <i>diluted</i> mean?3. What is the problem with desalination that Fishman describes in this paragraph?4. Reread the paragraph that begins with “The site of Perth’s proposed desalination plant ...” on page 205. What is a <i>bay</i>?	



Reader's Notes for Pages 203–205
of *The Big Thirst*

Question:	Teacher Guide:
<p>5. Fishman uses the term “desal plant” as a shorter form of “desalination plant.” According to Fishman, where would the brine from the desal plant go? Why is that a problem?</p> <p>6. Reread the paragraph that begins with “Desal faced opposition for another reason ...” on page 205. What do residents of Perth believe is the cause of their water shortage?</p> <p>7. According to Fishman, why might building a desal plant make this problem worse?</p>	



Reader's Notes for Pages 203–205
of *The Big Thirst*

Name: _____

Date: _____

Questions	Notes
<ol style="list-style-type: none"> 1. Reread the paragraph that begins with “Environmentalists were equally opposed ...” on page 204. What is <i>brine</i>? 2. What does <i>diluted</i> mean? 3. What is the problem with desalination that Fishman describes in this paragraph? 4. Reread the paragraph that begins with “The site of Perth’s proposed desalination plant ...” on page 205. What is a <i>bay</i>? 5. Fishman uses the term “desal plant” as a shorter form of “desalination plant.” According to Fishman, where would the brine from the desal plant go? Why is that a problem? 	<ol style="list-style-type: none"> 1. <i>Brine</i> is salty water. 2. <i>Diluted</i> means to mix with other water to make it less salty. 3. The problem is that when you desalinate water, the water that is left over still has all the original salt, so it is extremely salty. Releasing that very salty water back into the ocean has a negative effect on the environment. 4. A <i>bay</i> is a partially enclosed part of the ocean. 5. According to Fishman, the brine would go into Cockburn Sound, a bay. That’s a problem because the amount of salt in the brine could kill all the natural life in the bay.



Reader's Notes for Pages 203–205
of *The Big Thirst*

Question:	Teacher Guide:
<p>6. Reread the paragraph that begins with “Desal faced opposition for another reason ...” on page 205. What do residents of Perth believe is the cause of their water shortage?</p> <p>7. According to Fishman, why might building a desal plant make this problem worse?</p>	<p>6. The cause of the water shortage is the lack of rainfall due to climate change.</p> <p>7. A desal plant uses lots of electricity, so it would emit lots of greenhouse gases, contributing to climate change.</p>