

## UNIT B: LESSON 5

### LEARNING TARGETS

#### INSTRUCTIONS FOR TEACHERS:

- Refer students to the standards and objectives.
- Review the standards and objectives with students one at a time.
- At the end of the lesson, ask students what they did in class to meet the standards.

#### INSTRUCTIONS FOR STUDENTS:

Listen as your teacher reviews the standards and objectives. Your teacher will call on an individual or pair to explain what they mean.

#### Learning Target:

I can **evaluate** an **argument**'s use of **evidence** and **reasoning** in "Beyond Thirst: The Global Water Crisis."

#### Learning Target:

I can **analyze** the **impact** of word choice on meaning.

*evaluate* – judge

*argument* – writing for or against something

*evidence* – facts; proof

*reasoning* – using facts to decide something

*analyze* – study something and explain it

*impact* – effect or influence

## ACQUIRING AND USING VOCABULARY

### INSTRUCTIONS FOR TEACHERS:

- Review student instructions.
- Familiarize students with their glossary. It is located in Appendix A (Glossary; labeled “Appendix: Glossary” in the student version). Tell students to use the glossary throughout the lesson.

### INSTRUCTIONS FOR STUDENTS:

Use your glossary for the rest of the lesson to find meanings for words you don't know. Words that are **bolded** in the text can be found in the glossary. The glossary is located in the Appendix at the end of the lesson.

## THINKING LOG

### INSTRUCTIONS FOR TEACHERS:

- Read the guiding question and text aloud to students, modeling appropriate pace and intonation.
- During the read-aloud, define words and phrases in context that students are unlikely to know, drawing definitions from the glossary when you can. Translations, examples, gestures, and visuals also help.
- Ask students to read the text on their own and work with a partner to answer supplementary questions.
- Ask students to use their glossary to help them with word meanings.
- Call on pairs to answer the supplementary questions.
- Discuss the guiding question(s) as a group and then have students write the answer in their student chart.

### INSTRUCTIONS FOR STUDENTS:

Your teacher will ask you a guiding question that you will think about as your teacher reads the text aloud to you. As your teacher reads the text aloud, listen and follow along in your text. After the text has been read aloud, work with a partner to reread the text and answer the supplementary questions. Use your glossary to help you. Your teacher will review the answers with the class. You will then discuss the guiding question(s) with your teacher and the class. Finally, you will complete a written response to the guiding question(s).

**GUIDING QUESTION:** *How bad is the water crisis? Is there anything people can do to solve the water crisis? Is there anything I can do to help solve the problem?*

### Beyond Thirst: The **Global Water Crisis**

By Kathiann M. Kowalski

Most of us think nothing about grabbing a cold glass of water. In 2008, though, flooding caused a drinking water **shortage** in Cedar Rapids, Iowa. Meanwhile, North Carolina, Georgia, and California suffered serious **droughts**. Yet these problems seem small compared to the world's water **crisis**.

Every day, 1.2 billion people don't get **enough** safe drinking water for their **basic** needs. That's nearly one-sixth of the world's people. More than a third—roughly 2.6 billion people—lack safe sanitation.

Left unchecked, the **crisis** will only **worsen**.

### A Scarce **Resource**

While water covers 70 percent of Earth's surface, 97 percent is undrinkable seawater. With two-thirds of all fresh water locked in polar ice caps, only 1 percent of the world's water is **potentially available** for people.

"Water is a precious, vital resource," **stresses** Meena Palaniappan at the Pacific Institute in California. When poor sanitation and other practices **pollute** water, less is **available** for basic needs.

"Climate change is going to have a **dramatic impact** on water resources," adds Palaniappan. For many areas, rainfall will **occur** in a shorter **period** of time. Meanwhile, drought **periods** will lengthen.

**Population** growth will further **stress** water resources.

The World Health Organization (WHO) says each person needs at least 20 liters (a little more than 5 gallons) per day. But not everyone has equal **access**, especially in **developing countries**. When well-to-do people have water pumped into their homes, they get water at low per-unit costs. However, poor people in the same cities may pay up to 10 times as much per liter for water from tank trucks. Rural people may have to **fetch** water themselves. "It's a huge **inequity**," says Palaniappan.

**WORD BANK:**

97	fresh	<b>population</b>
climate change	ice caps	<b>potentially</b>
<b>fetch</b>	<b>pollute</b>	seawater

**SUPPLEMENTARY QUESTIONS:**

1. *What percent of Earth's water is undrinkable?*

Humans cannot drink 97 percent of the Earth's water because it is salty seawater.

2. *Why is only one percent of the world's water potentially (possibly) available for people?*

Only one percent of the world's water is potentially available for people because two-thirds of all fresh (not salty) water is in the ice caps at the north and south poles.

3. *What is the cause for even less fresh water being available to us?*

Even less fresh water is available to us when we pollute the water.

4. *What two other challenges will dramatically impact water resources?*

Two other challenges are climate change and population growth.

5. What is the evidence for the inequity between well-to-do (rich) people and poor people in regard to water?

Well-to-do people get water pumped into their homes and the cost is low (low/high). Poor people in the same cities have to pay high (low/high) costs for water because it comes from tank trucks. Some rural, poor people have to fetch (get) water themselves.

### Disease, Poverty, and Other Problems

Lack of safe water and sanitation is deadly. **Contaminated** water kills 1.8 million children every year with diarrhea. Parasites, bacteria, and viruses cause many other illnesses. At any moment, nearly half the people in **developing countries** suffer from some water-related sickness.

"These people have no choice," notes Sally Edwards at the Pan American Health Organization/World Health Organization. "They know it leads to disease, but there is no other water."

Girls and women **suffer** most. "Many girls who would otherwise be in school are spending hours each day walking to distant **sources** to collect water," notes Nicole Wickenhauser at WaterPartners International in Missouri.

Girls who do attend school often drop out as teens if schools lack separate toilets. Outside school, girls and women may risk attack just by going to the bathroom.

Adults can't earn as much when they spend hours **fetching** water of questionable quality. Water- **related** sickness makes them miss more work. As a result, families can't escape a cycle of disease and poverty.

Water **shortages affect** food supplies, too. According to WHO, growing one day's food for a family of four can take as much water as an Olympic-sized swimming pool. **Insecurity** about water can also cause **political** and economic conflicts—both within countries and internationally.

In short, addressing the water **crisis** won't just improve health. It will let people build better, more **secure** lives.

**WORD BANK:**

<b>developing countries</b>	food	kill	sickness
distances	girls	<b>political</b>	Women
economic	half	school	work
<b>fetch</b>	health	<b>secure</b>	

**SUPPLEMENTARY QUESTIONS:**

6. What does "lack of safe water and sanitation is deadly" mean?

"Lack of safe water and sanitation is deadly" means that not having safe water and sanitation can kill people.

7. At any moment in time, how many people in developing countries (countries that are not yet highly industrialized) are sick because of unclean water?

Nearly half the people in developing countries suffer from some water-related sickness.

8. Who suffers most in countries with water shortages?

Women and girls suffer most in countries that do not have enough water.

9. Why do the women and girls suffer the most?

The women and girls suffer the most because they have to walk long distances to fetch water instead of being in school or at work.

10. What else is affected by having too little clean water?

Lack of water affects food supplies and can cause political and economic conflicts (strong disagreements).

11. Why is it important to address the water crisis?

Addressing the water crisis will improve people's health and help people have better, more secure (safer) lives.

Addressing the Crisis

In 2000, the United Nations announced a Millennium Development **Goal** (MDG) of halving the **proportion** of people without safe drinking water by 2015. While we are still far from that **goal**, progress is **occurring**.

"The **technology** exists to provide water and sanitation to all," **stresses** Edwards. The most successful water and sanitation **projects involve communities in decision**

making. They also teach people about hygiene and system upkeep, so safe water supplies are sustainable.

Technologies **vary** based on geography, but they don't need to be **elaborate**. One area might use a rainwater harvesting system. Another **community** might **benefit** from a deep borehole well.

"All of our projects use as simple a **technology** as possible, and we use local materials," says Wickenhauser. "It's easier to operate and maintain."

Solving the **global** water **crisis** will cost billions of dollars. Yet WHO says meeting its MDG for safe water would cost less than five days' worth of **global military** spending. On a smaller scale, WaterPartners International says \$25 can bring safe water to someone for life. Just \$150 can meet a whole family's water needs.

**WORD BANK:**

billions	<b>decisions</b>	harvesting	safe
borehole	five	progress	sustainable

**SUPPLEMENTARY QUESTIONS:**

12. *Have we met the United Nations goal of providing more people with safe drinking water?*  
No, we have not (Yes, we have/No, we have not). We are making progress but we are far from the goal.

13. *The author (writer) stresses that technology exists to provide water and sanitation to all people in the world. What makes water and sanitation projects successful?*

Water and sanitation projects are successful when communities help make the decisions and when water supplies are sustainable.

14. *What are two examples of sustainable technologies?*

Sustainable technologies include harvesting (collecting) rainwater. Another is building deep borehole wells (wells drilled by machines).

15. *Will solving the global water crisis be expensive?*

Yes, it will be expensive (Yes, it will be expensive/No, it will not be expensive). It will cost billions of dollars.

16. *How much will solving the water crisis cost compared with global military spending?*

The World Health Organization (WHO) believes that paying for safe water would cost less than what is spent in five days on the military.

### What Can You Do?

Start by saving water at home and elsewhere. Ask others to protect this precious resource, too. Recent water **shortages** in the United States show that we shouldn't waste water. Conservation can also help the **environment**.

Beyond this, spread the word about the world's water **crisis**. Some schools have fundraisers to educate people and raise money for water **projects**. Speak out to elected officials, too. Tell them you want the world to have safe drinking water and sanitation for everyone.

"We know how to bring people safe water," **stresses** Wickenhauser. "It's a problem we can solve together."

### WORD BANK:

elected officials  
home

others  
**projects**

saving  
water **crisis**

### SUPPLEMENTARY QUESTIONS:

17. *What can you do? List five suggestions you find in the text.*

I can

- start by saving water myself at home and in other places;
- ask others to save water;
- tell other people about the world's water crisis;
- raise (collect) money for water projects;
- speak out (say something) to elected officials in government.

### RESPONSE TO GUIDING QUESTION(S):

*How bad is the water crisis? Is there anything people can do to solve the water crisis? Is there anything I can do to help solve the problem?*

*Suggested response:* The water crisis is a grave, global problem. It impacts many people around the world. It especially impacts poor people in developing countries.

Technology exists that can provide clean water and sanitation to all people. I can help to solve the water crisis by saving water and telling others to save water. I can tell other people about the water crisis. I can speak out to my elected officials, and I can raise money for water projects.



## WATER NOTE-CATCHER: TRACING AN ARGUMENT

### INSTRUCTIONS FOR TEACHERS:

- Review student instructions.

### INSTRUCTIONS FOR STUDENTS:

Work with a partner. Use your water note-catcher to write down key, or important, evidence from the text.

- First, you will write the author's claim, or what they are trying to show.
- Then, you will write at least three pieces of supporting evidence, or proof, for the author's claim.
- Finally, you will say why the evidence is relevant, or important.

You can use information from your Thinking Log to help you.

### WORD BANK:

access, available, bad, climate change, crisis, droughts, enough, floods, global, health, less, limited, one, one-sixth, pollution (pollute), safe, water, worse

### Claim:

We do not have enough safe drinking water. This is a global crisis, and it is getting worse.

### Supporting Evidence:

Only one percent of the world's water is available for people to use.

### Why it is relevant or important:

There is limited water for people to drink.

### Supporting Evidence:

Every day, one-sixth of the world's people do not have enough water.

### Why it is relevant:

Many, many people do not have enough water all over the world. That makes this a global crisis.

### Supporting Evidence:

Poor people do not have access to safe water.

### Why it is relevant:

Not having safe water is bad for people's health.

### Supporting Evidence:

Climate change and pollution reduce, or lower, the amount of water that is available for people to use.

### Why it is relevant:

They make the problem worse.

## MINI-LESSON: WORDS WITH MULTIPLE MEANINGS

### INSTRUCTIONS FOR TEACHERS:

- Use the activity to explain that some words have multiple meanings. In this activity students learn about words that look and sound the same but have different meanings. Even though the meanings are different they are similar in some ways. Be sure that students are not confusing this with words that look and sound the same but the meanings are totally different. Have students fill out the chart with a partner or with the whole class.

### INSTRUCTIONS FOR STUDENTS:

Some words look and sound the same. They have similar meanings, but not exactly the same meaning. Here is an example from the readings:

1. Population growth stresses water resources.
2. "Water is a precious resource," stresses Meena Palaniappan.

In both sentences, *stresses* is about something forceful, or strong. It has a similar meaning in both sentences. But it does not mean exactly the same thing. Here are the definitions, or meanings:

1. Population growth stresses water resources.  
*stress: put strong pressure or strain on something*
2. "Water is a precious resource," stresses Meena Palaniappan.  
*stress: say words in a strong or forceful way*

How can you find the different meanings for words that look and sound the same but have different meanings? Look in your dictionary for different meanings. Then try to find the meaning that makes the most sense for how your word is being used. Be careful—the meanings might be very similar. Use the example sentences in the dictionary to help you match meanings.

Now you will try.

- First, read each pair of words and the example sentences provided.
- Then work with a partner to look up the words in your dictionary and find the closest meanings.
- Write down the most accurate, or correct, meaning for each word. (The first one is done for you.)
- Then write your own example sentence.
- Finally, share your results with your class.

<b>Word:</b>	<i>source</i>	
<b>Example sentence:</b>	1. The <u>sources</u> of the droughts were complex, but they were likely caused by climate change.	2. Many girls are spending hours each day walking to distant <u>sources</u> to collect water.
<b>Definition:</b>	<i>the cause or start of something</i>	<i>the place where a stream or a river begins</i>
<b>Your example sentence:</b>		
<b>Word:</b>	<i>purchase</i>	
<b>Example sentence:</b>	1. Lack of water led China to <u>purchase</u> land in southern Africa to grow crops.	2. Oak trees fall because their roots cannot find <u>purchase</u> in the wet dirt.
<b>Definition:</b>	<i>[hint: look at the Lesson 2 glossary]</i> <u>a secure grip or hold</u>	<u>buy something</u>
<b>Your example sentence:</b>		
<b>Word:</b>	<i>notes</i>	
<b>Example sentence:</b>	1. Nicole <u>notes</u> her observations about water sustainability in her online blog.	2. "Many girls walk hours each day to collect water," <u>notes</u> Nicole Wickenhauser.
<b>Definition:</b>	<i>[hint: she is writing]</i> <u>make a written record of something</u>	<i>[hint: she is speaking]</i> <u>mention or make a comment about something</u>
<b>Your example sentence:</b>		
<b>Word:</b>	<i>acknowledge</i>	
<b>Example sentence:</b>	1. We would like to <u>acknowledge</u> all of the hard work students have done to preserve water.	2. The U.S. legal system is beginning to <u>acknowledge</u> nature's rights.
<b>Definition:</b>	<u>show thanks for something</u>	<u>admit or recognize the validity, or truth, of something</u>
<b>Your example sentence:</b>		

## EXIT TICKET

### INSTRUCTIONS FOR TEACHERS:

- Review student instructions with the whole class.

### INSTRUCTIONS FOR STUDENTS:

This graphic organizer will help you keep track of information about water for all of the readings. In today's reading, we learned four important lessons about water.

- First, describe, or write about, how much water is available for humans to use.
- Next, describe people's access to, or their ability to get, water.
- Then, describe the problems, or challenges, that we have to make sure there is safe drinking water.
- Finally, write down the *so what*: what we must do to make sure we have safe drinking water?

Availability of water	Access to water	Water challenges	So what?
Only _____ of all water on earth is available for use.	_____ of the world's people do not have enough _____ .	There may be less safe water because of _____ and _____.	<i>[Write what we must do to have safe drinking water:]</i>

## Appendix A: Glossary

Word	Definition	Example
access	ability to get or use something	But not everyone has equal <b>access</b> , especially in developing countries.
<i>affect</i>	causes change in something	Water shortages <b>affect</b> food supplies, too.
<i>available</i>	possible to get something	Only 1 percent of the world's water is potentially <b>available</b> for people.
basic	simple; only the necessary things	Every day, 1.2 billion people don't get enough safe drinking water for their <b>basic</b> needs.
<i>benefit</i>	receive an advantage	Another community might <b>benefit</b> from a deep borehole well.
<i>community</i>	a group of people	Another <b>community</b> might benefit from a deep borehole well.
contaminated	dirty or harmful	<b>Contaminated</b> water kills 1.8 million children every year with diarrhea.
crisis	a situation that is difficult to deal with	Yet these problems seem small compared to the world's water <b>crisis</b> .
decision	choice; something you come to after much thought	The most successful water and sanitation projects involve communities in <b>decision</b> making.
developing country	a poor agricultural country that is seeking to become more advanced economically and socially	Not everyone has equal access to water, especially in <b>developing countries</b> .
<i>dramatic</i>	sudden and striking	"Climate change is going to have a <b>dramatic</b> impact on water resources," adds Palaniappan.

Word	Definition	Example
droughts	long periods of time with little or no rain	Meanwhile, North Carolina, Georgia, and California suffered serious <b>droughts</b> .
elaborate	detailed and complicated	Technologies vary based on geography, but they don't need to be <b>elaborate</b> .
enough	as much as you need	Every day, 1.2 billion people don't get <b>enough</b> safe drinking water for their basic needs.
<i>environment</i>	what surrounds us and affects our health; the natural world	Conservation can also help the <b>environment</b> .
fetch	go and get something	Rural people may have to <b>fetch</b> water themselves (instead of getting water from a tap).
Floods (flooding)	sudden, strong flows of water onto land	In 2008, though, <b>flooding</b> caused a drinking water shortage in Cedar Rapids, Iowa.
global	worldwide	Solving the <b>global</b> water crisis will cost billions of dollars.
<i>goal</i>	a result, or end, that a person wants and works for; aim or purpose	In 2000, the United Nations announced a Millennium Development <b>Goal</b> (MDG) of halving the proportion of people without safe drinking water by 2015.
<i>impact</i>	a strong and powerful effect	Climate change is going to have a dramatic <b>impact</b> on water resources.
inequity	not fair; injustice	How water is distributed is a huge <b>inequity</b> .
<i>insecurity</i>	not stable; not feeling safe	<b>Insecurity</b> about water can also cause political and economic conflicts—both within countries and internationally.
<i>involve</i>	bring someone into an activity or situation	The most successful water and sanitation projects <b>involve</b> communities in decision making.

<b>Word</b>	<b>Definition</b>	<b>Example</b>
limited	not endless	There is <b>limited</b> water for people to drink
<i>military</i>	armed forces of a country	Yet WHO says meeting its MDG for safe water would cost less than five days' worth of global <b>military</b> spending.
<i>occur</i>	take place; happen	For many areas, rainfall will <b>occur</b> in a shorter period of time.
<i>period</i>	portion of time	For many areas, rainfall will occur in a shorter <b>period</b> of time.
political	having to do with politics, politicians, or government	Insecurity about water can also cause <b>political</b> and economic conflicts—both within countries and internationally.
Pollute (pollution)	make something dirty or harmful to health by adding waste material	When poor sanitation and other practices <b>pollute</b> water, less is available for basic needs.
population	the total number of people living in a country, city, or other area	<b>Population</b> growth will further stress water resources.
<i>potentially</i>	possibly	With two-thirds of all fresh water locked in polar ice caps, only 1 percent of the world's water is <b>potentially</b> available for people.
<i>project</i>	activity that is carefully planned	All of our <b>projects</b> use as simple a technology as possible.
<i>proportion</i>	a part or fraction	In 2000, the United Nations announced a Millennium Development Goal (MDG) of halving the <b>proportion</b> of people without safe drinking water by 2015.
related	have a connection with something	Water- <b>related</b> sickness makes them miss more work.
resources	materials that occur in nature like water.	Climate change is going to have a dramatic impact on water resources.

<b>Word</b>	<b>Definition</b>	<b>Example</b>
<i>secure</i>	remaining safe and unharmed	It will let people build better, more <b>secure</b> lives.
<i>shortage</i>	an amount that is less than is needed; lack	In 2008, though, flooding caused a drinking water <b>shortage</b> in Cedar Rapids, Iowa.
<i>source</i>	place where a stream or river begins	Many girls who would otherwise be in school are spending hours each day walking to distant <b>sources</b> to collect water.
<i>stress</i>	a) say words in a strong or forceful way  b) put strong pressure or strain on something	a) "Water is a precious, vital resource," <b>stresses</b> Meena Palaniappan.  b) Population growth will further <b>stress</b> water resources.
<i>suffer</i>	experience something bad	Girls and women <b>suffer</b> most.
<i>technology</i>	products or methods that are developed using knowledge from science	The <b>technology</b> exists to provide water and sanitation to all.
<i>vary</i>	to be different	Technologies <b>vary</b> based on geography, but they don't need to be elaborate.
<i>worse</i>	more harmful than something else	Left unchecked, the crisis will only <b>worsen</b> .

*Italicized words are from the Academic Word List.*