UNIT B: LESSON 8

LEARNING TARGETS

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.

<table>
<thead>
<tr>
<th>Learning Target:</th>
<th>evaluate – judge</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can evaluate the development of the argument in “Wringing Dry.”</td>
<td>development – growth; when something becomes more complete</td>
</tr>
</tbody>
</table>

| Learning Target: | argument – writing for or against something |
|------------------|explain – talk about what something means |
| I can explain how the different aspects of “Wringing Dry” contribute to my understanding of water sustainability. | aspect – part |
|                  | contribute – add |

ACQUIRING AND USING VOCABULARY

INSTRUCTIONS FOR STUDENTS:
Your teacher will pre-teach several key words. 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 and word banks can be found in the glossary. The glossary is located in the Appendix at the end of the lesson.
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: What is the assessment of the World Water Forum about water? What are recommendations of experts to solve the world water shortage?

"Wringing Dry"

Ready to give up long showers, water parks, and unlimited water gushing out of your faucets? Well, you don't have to just yet, unless world leaders can't resolve the world’s worsening water shortage. The oceans are full, of course. But the liquid most important to human life—fresh, clean water for drinking and watering crops—is in short supply in many parts of the world. Rivers are running low, lakes are shrinking, streams have stopped flowing, and groundwater is being pumped dry.

Drought conditions are spreading in Africa, causing crop failures, malnutrition, and starvation.

Millions of people in Africa and Asia have turned to drinking and washing with contaminated water, leading to the spread of diseases. Infectious water-borne diseases, such as typhus and cholera, are now responsible for 80 percent of illnesses and deaths in poor countries. Many of those affected are children. If the trends continue, one-third of the world population will face a severe water shortage by 2025.

WORD BANK:

<table>
<thead>
<tr>
<th>2025</th>
<th>eighty</th>
<th>poor</th>
<th>shortage</th>
</tr>
</thead>
<tbody>
<tr>
<td>crops</td>
<td>flowing</td>
<td>pumped</td>
<td>shrinking</td>
</tr>
<tr>
<td>diseases</td>
<td>malnutrition</td>
<td>resolve</td>
<td>starvation</td>
</tr>
<tr>
<td>dry</td>
<td>one-third</td>
<td>severe</td>
<td></td>
</tr>
</tbody>
</table>

SUPPLEMENTARY QUESTIONS:

1. Why might you have to give up using lots of water?
You will have to give up using lots of water if world leaders can’t ___________ the global water ___________.

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2. What is the evidence listed in this text for the short supply of clean water for drinking and 
watering crops?
The evidence includes:
   A. rivers becoming __________
   B. lakes __________ (getting smaller)
   C. streams not __________ anymore
   D. groundwater __________ dry.

3. What are the consequences, or results of drought named in this text?
The consequences of drought named in this text include:
   A. failure of __________ to grow
   B. __________ (not having enough food)
   C. __________ (dying of hunger).

4. What is the consequence of drinking and washing with contaminated, or dirty, water?
The spread of __________ is the consequence of drinking and washing with 
contaminated water. These __________ are the cause of __________ percent of the 
sickness and death in __________ countries.

5. What will happen if water shortage trends continue?
If water shortage trends continue, __________ of people on earth will face 
__________ water shortage by __________.

World Water Forum

That's part of a sobering assessment by the World Water Forum, which meets every 
three years. This year, 25,000 delegates from 100 countries convened in Istanbul, 
Turkey, to figure out a solution to solve the world’s water crisis.

"There are several rivers that don’t reach the sea anymore," Mark Smith, head of the 
water program for the International Union for the Conservation of Nature, told the 
BBC. "The Yellow River [Huang River in China] is one, the Murray-Darling [river 
system in Australia] is nearly another—they have to dredge the mouth of the river 
every year to make sure it doesn't dry up. The Aral Sea [in west-central Asia] and 
Lake Chad [in Africa] have shrunk because the rivers that feed them have been 
largely dried out."
Smith says small streams and rivers, especially in Africa, are drying up for at least part of the year, leading to even less usable water for small communities.

When streams and lakes dry up, people look underground. In parts of Africa and Asia, deep tube wells have replaced streams and rivers for farm irrigation and for drinking water. But because of the need to produce more and more crops, even the deepest wells are going dry. In rural western India, says Fred Pearce, author of When the Rivers Run Dry, "half the traditional wells and millions of tube wells have dried up."

"For nearly 3 billion people, access to a [water and] sanitation system comparable to that of ancient Rome would be a significant improvement," scientist Peter Gleick told Public Works magazine.

In 2008, lack of water led China to try to lease or purchase (buy) land in southern Africa to grow crops to help feed China's population. South Korea, which is experiencing its own drought, is looking to lease land in Madagascar, an island nation off eastern Africa, to grow food. Other countries in Asia, including Saudi Arabia, are considering similar moves.

"In general, we see drying...from southern Europe across to Kazakhstan and from north Africa to Iran," Martin Parry, of the Intergovernmental Panel on Climate Change, told the BBC. "And the drying extends westward into Central America [as well as into southern Africa and Australia]." Since 2002, Australia has been in the grip of its worst drought in history.

The United States also has been hit hard. In 2007, Lake Superior, one of the world’s largest freshwater lakes, dropped to its lowest level in 80 years. California has a 20-year supply of freshwater left. New Mexico has 10 years' worth. Since 2000, the Colorado River, which provides water for seven U.S. states, has carried less water than at any time in its known history. Experts say those problems represent more than a temporary drought. In fact, the Environmental Protection Agency warns that if current water use continues unchecked, 36 states will suffer water shortages within the next five years.
WORD BANK:

2025  communities  part of  thousands of years ago
Africa  drying up  populations  usable
America Europe  purchase  water
Antarctica hard  sanitation  wells
Asia  lease  sea
Australia one-third  severe

SUPPLEMENTARY QUESTIONS:

6. What is the assessment of 25,000 delegates from 100 countries who belong to the World Water Forum?
Their assessment is that ___________ of people on earth will face ___________ water shortage by ___________.

7. What is happening to rivers all over the world?
Rivers are ___________ so badly that the river waters no long reach the ___________.

8. What is happening in some small rivers and streams in Africa?
Some small rivers and streams in Africa are ___________ for ___________ the year.
This means that there is even less ___________ water for small ___________.

9. What happens when streams and lakes become dry?
When streams and lakes become dry, communities dig ___________, but the wells are also ___________.

10. What does the scientist, Peter Gleick, infer, or conclude, when he says, “For nearly 3 billion people, access to a [water and] sanitation system comparable to that of ancient Rome would be a significant improvement?”
The scientist is inferring that even people who lived ___________ (the time of Ancient Rome) had better ___________ and ___________ systems than many people living today.

11. What are some countries doing to grow crops when they do not have enough water?
Countries that do not have enough water to grow crops have begun to ___________ (rent) or ___________ (buy) land in other countries to help feed their ___________.

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12. List the continents where drying is happening.
Continents were drying is happening include:
   A. __________
   B. __________
   C. __________
   D. __________
   E. South __________
   F. North __________

13. What is the one continent that has not been affected by water shortage?
The one continent not affected is __________.

14. Has the United States escaped, or avoided, having water shortages?
   ________ (Yes/No). There ________ (are/are not) water shortages in the United States. The United States has been hit ________.

**Causes and Solutions**

What is causing the crisis? **Experts** say it is a **complex combination** of climate change and rapid **population** growth. **Areas** that once received a lot of rain now get less rain; **areas** that got little rain now get more rain. When **areas** experience less or no rain, and rivers, streams, and lakes dry up, crops fail and hunger increases. According to the Intergovernmental **Panel** on Climate Change, the **area** of Earth's land that is classified as "very dry" has doubled since 1970, and the **trend** is expected to grow.

The world **population** today is about 6.7 billion people, and it is expected to grow to more than 9 billion by 2050, according to United Nations **projections**. Much of the growth is expected to take place in countries that are already water poor, putting further **stress** on a **dwindling** water supply.

One partial answer to the world water shortage, at least for countries near the sea, is to build more desalination plants that **convert** seawater to freshwater. (Desalination plants take the salt out of sea water.) A new desalination plant has been built in drought-stricken Australia, and several are planned for California. Another suggested solution is for water- rich countries, such as Canada, to sell water to water-poor countries. A third suggestion is for countries to adopt ways of increasing the freshwater supply, such as teaching farmers in Africa **methods** of **capturing** clean rainwater.
Delegates to last month’s Istanbul conference discussed those and other ways to help solve the water crisis. Nearly everyone agreed that the amount of water on our planet can’t be changed, but the way we use it can be if more people realized the problem.

"We’re waking up," Gleick told Time magazine about the growing awareness of the world water shortage. "But not fast enough."

**WORD BANK:**
- awareness
- desalination
- population
- stress
- capture
- dwindling
- problem
- water-poor
- changed
- Earth
- rainwater
- water-rich
- climate change
- experts
- realize
- complex
- fast
- shortage
- countries
- freshwater
- shortages

**SUPPLEMENTARY QUESTIONS:**

15. According to this text, what is causing the water crisis?

The problem is __________. __________ believe the problem is a combination of __________ and __________ growth.

16. The world population is expected to grow even more by the year 2050. Where is the world population expected to grow the most? Why will this be a challenge?

The world population is expected to grow the most in __________ that have water __________ now. This will __________ the already __________ (decreasing) water supply.

17. What are some ways to address these challenges that are suggested in the text?

The text suggests:
- A. building __________ plants
- B. having __________ countries sell water to __________ countries
- C. having countries increase __________ supplies, for example, by teaching farmers how to __________ (collect) clean __________.

18. What was agreed upon at the conference?

Almost everyone at the conference agreed that the way we use water can be __________. More people must __________ (completely understand) the __________.

19. Does the article end positively or negatively?
The article ends __________________(positively/negatively/both positively and negatively). The final quote says that people are gaining an __________ of the world water __________, but it is not happening __________ enough.

20. Look back at the title of the article, “Wringing Dry.” To “wring” means to twist and squeeze tightly. We might wring out a bathing suit to make it dry after swimming. What does the title mean for this article?

For this article, the title “Wringing Dry” means that humans are wringing __________ dry as a result of __________and __________ growth.

RESPONSE TO GUIDING QUESTION(S):
What is the assessment of the World Water Forum about water? What are some of the answers of experts to solve the world water shortage?
Response:
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________. 
**WATER NOTE-CATCHER: TRACING AN ARGUMENT**

**INSTRUCTIONS FOR STUDENTS:**
Work with a partner. Use your water note-catcher to write down key, or important, evidence from the video.
- 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. Write why the evidence is relevant, or important.
Finally, you will write whether you think the evidence is good. Why or why not?

**WORD BANK:**
2025, access, Asia, droughts, five, fresh, growing, lakes, need, one-third, people, population, run out, shortage, shortages, trends, United States, water, wells, world

<table>
<thead>
<tr>
<th>Claim:</th>
<th>People all over the ________ will _________ of fresh _________ unless we do something about it.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting Evidence:</td>
<td>If the ________continue, _________ of the world population will face a severe water _________ by _________.</td>
</tr>
<tr>
<td>Supporting Evidence:</td>
<td>Rivers and _________ in Africa and _________ are drying up. _________ are also going dry. And the world _________ is _________.</td>
</tr>
<tr>
<td>Supporting Evidence:</td>
<td>Many states are experiencing _________. 36 states will have water _________ within the next _________ years.</td>
</tr>
</tbody>
</table>

Write whether the speaker provided strong/weak or poor evidence. Why or why not?
I think the speakers evidence is (strong/weak) _________ because
__________________________________________________________________________
__________________________________________________________________________

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**FUNCTIONAL ANALYSIS**

**INSTRUCTIONS FOR STUDENTS:**
Work with your class to analyze an important sentence(s) from the text.
- Every sentence has someone or something that *does* something. First you determine this *who* or *what*.
- Every sentence has something that they *did* or *are*. Figure that part out next.
- Now you have the most important parts of the sentence in place.
- Then you will figure out what they *are*.
- Finally, you will write the descriptive details.
- Write your answers in the spaces below.
- When you are done, write the sentence again in your own words.
You may want to use definitions from the glossed text in the sections above.

**Functional Analysis:**

The liquid most important to human life—fresh, clean water for drinking and watering crops—is in short supply in many parts of the world

<table>
<thead>
<tr>
<th>WHAT (Actor): fresh, clean</th>
<th>for</th>
<th>and</th>
<th>Descriptor (Detail): The</th>
<th>most important to</th>
<th>________</th>
<th>________</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT HAPPENED (Action): is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHAT: in</td>
<td>________</td>
<td>________</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descriptor (Where): in</td>
<td>____________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**What the sentence says:**

| The liquid most important to human life |
|_______________________________________|
| fresh, clean water for drinking and watering crops |
|_______________________________________|
| is |
| is |
| in short supply |
| in many parts of the world |

**My own words:**

Write the sentence in your own words and then explain it to your partner.

*Water is ________________________________.*

*Water is the most important ________________________________.*
EXIT TICKET

INSTRUCTIONS FOR STUDENTS:
This graphic organizer will help you keep track of information about the brain for all of the readings. Each day you will write down new information from each reading.
- First, write what you learned about water in other parts of the world
- Next, provide, or write, information about water in the United States.
As you write, think about today’s reading. Also think about everything else you have learned about water sustainability.

<table>
<thead>
<tr>
<th>Information about Water in Other Parts of the World</th>
<th>Information about Water in the United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>__________________________________________________</td>
<td>__________________________________________________</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
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<tr>
<td>__________________________________________________</td>
<td>__________________________________________________</td>
</tr>
</tbody>
</table>
## Appendix: Glossary

<table>
<thead>
<tr>
<th>Word</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>access</td>
<td>ability to get or use something</td>
<td>&quot;For nearly 3 billion people, access to a [water and] sanitation system comparable to that of ancient Rome would be a significant improvement,&quot; scientist Peter Gleick told Public Works magazine.</td>
</tr>
<tr>
<td>area</td>
<td>a place or region</td>
<td>Areas that once received a lot of rain now get less rain; areas that got little rain now get more rain.</td>
</tr>
<tr>
<td>assessment</td>
<td>evaluation or judgment</td>
<td>That’s part of a sobering assessment by the World Water Forum, which meets every three years.</td>
</tr>
<tr>
<td>aware</td>
<td>notice and understand something</td>
<td>&quot;We're waking up,&quot; Gleick told Time magazine about the growing awareness of the world water shortage.</td>
</tr>
<tr>
<td>capture</td>
<td>collect or take</td>
<td>We can adopt ways of increasing the freshwater supply, such as teaching farmers in Africa methods of capturing clean rainwater.</td>
</tr>
<tr>
<td>combination</td>
<td>when things are joined or mixed</td>
<td>Experts say it is a complex combination of climate change and rapid population growth.</td>
</tr>
<tr>
<td>complex</td>
<td>something that has many parts</td>
<td>Experts say it is a complex combination of climate change and rapid population growth.</td>
</tr>
<tr>
<td>convene</td>
<td>bring together a group of people</td>
<td>This year, 25,000 delegates from 100 countries convened in Istanbul, Turkey, to figure out a solution to solve the world’s water crisis.</td>
</tr>
<tr>
<td>Word</td>
<td>Definition</td>
<td>Example</td>
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</tr>
<tr>
<td>convert</td>
<td>change</td>
<td>One partial answer to the world water shortage is to build more desalination plants that convert seawater to freshwater.</td>
</tr>
<tr>
<td>droughts</td>
<td>long periods of time with little or no rain</td>
<td>Many states are experiencing droughts.</td>
</tr>
<tr>
<td>discuss</td>
<td>talk about something</td>
<td>Delegates to last month’s Istanbul conference discussed ways to help solve the water crisis.</td>
</tr>
<tr>
<td>dwindling</td>
<td>decreasing or shrinking</td>
<td>Much of the population growth is expected to take place in countries that are already water poor, putting further stress on a dwindling water supply.</td>
</tr>
<tr>
<td>expert</td>
<td>someone who knows a lot about a particular thing</td>
<td>Experts say those problems represent more than a temporary drought.</td>
</tr>
<tr>
<td>infectious</td>
<td>easily spread to other people, especially diseases</td>
<td>Infectious diseases, such as typhus and cholera, are now responsible for 80 percent of illnesses and deaths in poor countries.</td>
</tr>
<tr>
<td>malnutrition</td>
<td>not having enough food for good health</td>
<td>Drought conditions are spreading in Africa, causing crop failures, malnutrition, and starvation.</td>
</tr>
<tr>
<td>method</td>
<td>a way of doing something</td>
<td>We can adopt ways of increasing the freshwater supply, such as teaching farmers in Africa methods of capturing clean rainwater.</td>
</tr>
<tr>
<td>panel</td>
<td>a group of persons gathered to discuss, or talk about, a specific topic</td>
<td>Martin Parry, of the Intergovernmental Panel on Climate Change, spoke about the water shortage problem.</td>
</tr>
<tr>
<td>Word</td>
<td>Definition</td>
<td>Example</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>population</td>
<td>the number of people living in a place</td>
<td>Many of those affected are children. If the trends continue, one-third of the world population will face a severe water shortage by 2025.</td>
</tr>
<tr>
<td>produce</td>
<td>grow or bring into being</td>
<td>But because of the need to produce more and more crops, even the deepest wells are going dry.</td>
</tr>
<tr>
<td>projection</td>
<td>a guess about the future based on what is happening now</td>
<td>The world population today is about 6.7 billion people, and it is expected to grow to more than 9 billion by 2050, according to United Nations projections.</td>
</tr>
<tr>
<td>resolve</td>
<td>decide on a solution to fix a problem</td>
<td>You don't have to change yet, unless world leaders can't resolve the world's worsening water shortage.</td>
</tr>
<tr>
<td>severe</td>
<td>very strong or intense; very bad</td>
<td>One-third of the world population will face a severe water shortage by 2025.</td>
</tr>
<tr>
<td>significant</td>
<td>major or important; consequential</td>
<td>A water and sanitation system comparable to that of ancient Rome would be a significant improvement.</td>
</tr>
<tr>
<td>starvation</td>
<td>dying of hunger</td>
<td>Drought conditions are spreading in Africa, causing crop failures, malnutrition, and starvation.</td>
</tr>
<tr>
<td>stress</td>
<td>strain</td>
<td>Much of the growth is expected to take place in countries that are already water poor, putting further stress on a dwindling water supply.</td>
</tr>
<tr>
<td>traditional</td>
<td>something that is passed down from generation to generation (from parents to children)</td>
<td>In rural western India half the traditional wells and millions of tube wells have dried up.</td>
</tr>
<tr>
<td>Word</td>
<td>Definition</td>
<td>Example</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>trend</td>
<td>something that is happening more and more</td>
<td>The area of Earth's land that is classified as &quot;very dry&quot; has doubled since 1970, and the trend is expected to grow.</td>
</tr>
<tr>
<td>unchecked</td>
<td>not held back</td>
<td>If current water use continues unchecked, 36 states will suffer water shortages within the next five years.</td>
</tr>
<tr>
<td>unlimited</td>
<td>having no end or restrictions</td>
<td>Ready to give up unlimited water gushing out of your faucets?</td>
</tr>
<tr>
<td>wells</td>
<td>deep holes dug in the ground to get water</td>
<td>In parts of Africa and Asia, deep tube wells have replaced streams and rivers for farm irrigation and for drinking water.</td>
</tr>
</tbody>
</table>