# UNIT B: LESSON 2

## 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:<br>I can **determine** the **main** ideas and **supporting details** in the **article** "Water Is Life."<br><br>Learning Target:<br>I can **determine** the meaning of **figurative** and **technical** language in "Water Is Life." | ***determine*** – decide<br>***main*** – central or most important<br>***supporting details*** – helping ideas<br>***article*** – a short text in a newspaper or magazine<br>***figurative*** – not exact; imaginative<br>***technical*** – having to do with specific subjects |

## 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 and word banks 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 defintions 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:** *What does Barbara Kingsolver believe about climate change and water on Earth?*

Water is Life
By Barbara Kingsolver

1
We keep an eye out for **wonders**, my daughter and I, every morning as we walk down our farm lane to meet the school bus. And wherever we find them, they reflect the **magic** of water: a spider web drooping with dew like a rhinestone necklace. A rain-colored heron rising from the creek bank. One **astonishing** morning, we had a visitation of frogs. Dozens of them hurtled up from the grass ahead of our feet, launching themselves, white-bellied, in bouncing arcs, as if we'd been caught in a downpour of amphibians. It seemed to mark the dawning of some new aqueous age. On another day we met a snapping turtle in his primordial olive drab armor. **Normally** this is a pond-locked creature, but some murky ambition had moved him onto our gravel lane, using the rainy week as a passport from our farm to somewhere else.

**WORD BANK:**

| | | |
|---|---|---|
| Barbara Kingsolver | frogs | spider web |
| daughter | heron | water |
| farm | snapping turtle | **wonders** |

**SUPPLEMENTARY QUESTIONS:**

*1. Who is the narrator and author of the text?*
The narrator and author of the text is Barbara Kingsolver.

*2. Who does Barbara walk with every morning?*
Barbara walks with her daughter every morning.

*3. Where do Barbara and her daughter live?*
Barbara and her daughter live on a farm.

*4. What do Barbara and her daughter look for every morning?*
They look for wonders (amazing things).

*5. What do the wonders always reflect, or show?*
The wonders always reflect the magic of water.

*6. What four wonders have Barbara and her daughter seen on their walk?*
They have seen a spider web with water on it, and water animals like a heron, frogs, and a snapping turtle.

2

The little, nameless creek tumbling through our hollow holds us in thrall. Before we came to southern Appalachia, we lived for years in Arizona, where a permanent **runnel** of that size would merit a nature preserve. In the Grand Canyon State, every license plate (on cars) reminded us that water changes the face of the land, splitting open rock in the desert like a peach, leaving mile-deep gashes of infinite hue. Cities there **function** like space stations, **importing** every ounce of fresh water from **distant** rivers or fossil **aquifers**. But such is the human **inclination** to take water as a birthright that public **fountains** still may bubble in Arizona's town squares and farmers there raise thirsty **crops**. Retirees from rainier climes **irrigate** green lawns that **impersonate** the grasslands they left behind. The truth **encroaches** on all the fantasies, though, when desert residents wait months between rains, watching cacti tighten their belts and roadrunners skirmish over precious beads from a dripping garden faucet. Water is life. It's the briny broth of our origins, the pounding circulatory system of the world, a precarious molecular edge on which we **survive.** It

makes up two-thirds of our bodies, just like the map of the world; our vital fluids are **saline**, like the ocean. The apple doesn't fall far from the tree.

**WORD BANK:**

| | | |
|---|---|---|
| **distant** | lawns | **survive** |
| dry | rain | thirsty |
| **fountains** | **saline** | two-thirds |
| | | water |

**SUPPLEMENTARY QUESTIONS:**

*7. Barbara and her daughter are held in thrall (are captivated) by the little creek (a small steam). Why do they find the little creek so amazing?*

Barbara and her daughter find the little creek so amazing because they used to live in Arizona. Arizona is a very dry state where there is not a lot of water.

*8. Why does Barbara say the cities in Arizona function like space stations?*

Cities in Arizona get all of their fresh water from distant (far-away) rivers or aquifers, just like space stations get their water from far away.

*9. A birthright is something you get no matter what. What evidence does Barbara provide about the "human inclination (tendency) to take water as a birthright?"*

Evidence of humans in Arizona taking water as a birthright is found in the following three examples:

A. Water fountains in town squares
B. Raising crops that are thirsty (plants that need a lot of water)
C. Irrigated green lawns

*10. What makes the desert residents (people who live in the desert) realize the truth about water?*

Desert residents need to wait months before rain comes.

*11. Why does Barbara say "water is life"?*

She says "water is life" because we humans need water to survive.

*12. What does Barbara write is the similarity between our bodies and a map of the world?*

Our bodies are similar to a map of the world because our bodies and the earth are made up of two-thirds water. The fluids in our bodies, like blood, are saline (salty) just like the ocean.

3

Even while we take Mother Water **for granted,** humans understand in our bones that she is the boss. We stake our civilizations on the coasts and mighty rivers. Our deepest **dread** is the **threat** of having too little **moisture**—or too much. We've lately raised the Earth's average temperature by .74˚C (1.3˚F), a number that sounds inconsequential. But these words do not: **flood**, **drought**, hurricane, rising sea levels, bursting levees. Water is the **visible** face of climate and, therefore, **climate change**. **Shifting** rain patterns **flood** some **regions** and dry up others as nature **demonstrates** or shows a **grave** physics lesson: Hot air holds more water molecules than cold.

**WORD BANK**

| | | | |
|---|---|---|---|
| bad | **flood** | hurricanes | too little |
| cold | Hot | power | too much |
| **drought** | hotter | rain | water |

**SUPPLEMENTARY QUESTIONS:**

*13. What does Barbara mean when she says that humans understand that Mother Water is the boss?*

Barbara means that humans understand the power of water.

*14. What does, "our deepest dread is the threat of having too little moisture (wetness)—or too much" mean?*

This means that humans are afraid of having too little or too much water.

*15. What does Barbara list as the consequences of raising the Earth's average temperature?*

The consequences Barbara lists include flood, drought, and hurricanes.

*16. What does Barbara say is the visible face (what we can see) of climate change?*

Barbara says the visible face of climate change is water.

*17. What physics lesson is demonstrated, or shown, by shifting rain patterns? Why would this matter?*

The physics lesson is that hot air holds more water than cold air. As the air gets hotter, we will have more bad weather from too much rain.

4

The results are in plain sight along pummeled coasts from Louisiana to the Philippines as super-warmed air above the ocean brews superstorms, the likes of which we have never known. In **arid** places the same physics amplify **evaporation** and **drought**, **visible** in the dust-dry farms of the Murray-Darling River Basin in Australia. On top of the Himalaya, **glaciers** whose meltwater **sustains** vast

populations are dwindling. The snapping turtle I met on my lane may have been looking for higher ground. Last summer brought us a string of **floods** that left tomatoes blighted on the vine and our farmers needing disaster relief for the third **consecutive** year. The past **decade** has brought us more **extreme** storms than ever before, of the kind that dump many inches in a day, laying down **crops** and utility poles and great sodden oaks whose roots cannot find **purchase** in the **saturated** ground. The word "disaster" seems to mock us.
After enough **repetitions** of shocking weather, we can't remain indefinitely shocked.

**WORD BANK:**

| | | |
|---|---|---|
| **drought** | **glaciers** | superstorms |

**SUPPLEMENTARY QUESTIONS:**

*18. List four examples of the results of the extreme (very great) shifting patterns of rain.*
Three examples include:

A. Superwarmed air above the ocean that causes superstorms
B. arid (very dry) places that have drought (no rain)
C. glaciers (frozen rivers of water in the high mountains) that are melting

5

How can the world **shift** beneath our feet? All we know is **founded** on its **rhythms**: Water will flow from the snowcapped mountains, rain and sun will arrive in their proper seasons. Humans first formed our tongues around language, surely, for the purpose of explaining these constants to our children. What should we tell them now? That "**reliable**" has been rained out, or died of thirst? When the Earth seems to raise its own voice to the pitch of a **gale**, have we the ears to listen?

**WORD BANK:**

| | | | |
|---|---|---|---|
| ears | mountains | **reliable** | seasons |
| listen | raising its own voice | **rhythms** | |

**SUPPLEMENTARY QUESTIONS:**

*19. What does Barbara mean when she asks, "how can the world shift beneath our feet?"*
Barbara is telling us that climate change is affecting the rhythms (cycles) of nature.

*20. What is an example of a rhythm of nature?*
Water flows from the mountains and rain and sun come during the expected seasons.

*21. Does Barbara believe these rhythms will remain constant?*
No, she does not (Yes, she does/No, she does not).

*22. What does Barbara believe?*
She believes that the Earth is raising its own voice (the Earth is warning us).

*23. What question does Barbara ask?*
Barbara asks whether we will "have the ears to listen."

*24. What does this mean?*
Barbara is unsure whether humans will notice that the weather is no longer reliable.

**RESPONSE TO GUIDING QUESTION(S):**
*What does Barbara Kingsolver believe about climate change and water on Earth?*
*Suggested Response:* Barbara Kingsolver believes that humans are responsible for climate change and water is the visible face of climate. The extreme changes in rain patterns are a result of climate change. Barbara believes that humans take water for granted. She believes that humans may not understand how grave climate change is.

## WATER NOTE-CATCHER

INSTRUCTIONS FOR TEACHERS:

- Review student instructions.

INSTRUCTIONS FOR STUDENTS:

Work with a partner. Use your water note-catcher to write down key, or important, information from the text. You will write down main ideas and some details, or specific information, about each main idea. You can use information from your Thinking Log. Some information is already filled in for you.

**WORD BANK:**

**aquifers,** Arizona, changed, changes, **crops**, dry, **flood**, **for granted**, **fountains, import**, **indicates**, lawns, **magic**, rivers, storms, **sustainable**, temperature, weather, **wonders**

**Introduction**:

The author likes to look for wonders in nature. She often sees the magic of water.

**Brief background:**

The author does not take water for granted. This is because she used to live in Arizona, where it is very dry.

| **Main idea**: | **Supporting details**: |
|---|---|
| Cities import water from distant or far-away rivers and aquifers. | People in dry areas use water for fountains, crops, and lawns. But the truth is that this is not sustainable. |
| **Main idea**: | **Supporting details**: |
| Humans have changed the earth's temperature and therefore the weather. | Water indicates, or shows, the changes in the weather. Some regions flood and others are too dry. We are experiencing extreme, or very great, storms. |

**Conclusion:**

People need to start paying attention to the changes in our world.

# MINI-LESSON: FIGURATIVE LANGUAGE—SIMILE

INSTRUCTIONS FOR TEACHERS:

- Use the activity to explain figurative language and similes.
- Have students fill out the chart with a partner.

INSTRUCTIONS FOR STUDENTS:

Authors, or writers, use *figurative language* to help readers imagine, or have a picture in their mind of what authors mean. Here is an example:

*Juan walked quietly, like a cat.*

Can you imagine, or think, about how quiet a cat is when it walks? The author wants you to think about how quiet a cat is when you think about Juan. The author is helping you imagine how Juan walked.

The example above is a type of figurative language called *simile*. Simile is when an author compares two things that are similar, or alike. She compares the way Juan walks to the way a cat walks.

In "Water is Life," the author uses many similes.

Read each of the similes below and work with a partner to do the following:

- Use your own words to write what the author is describing in the first column.
- Then use your own words to write what she is comparing it to.
- Describe or draw what the author wants you to understand in the third column, or find an image online.
- Finally, share your ideas with your partner or the whole class.

| **Simile** | **What The Author is Describing** | **Comparison** | **Sketch, Image, or Description** |
|---|---|---|---|
| A spider web drooped with dew like a rhinestone necklace. | A spider web with dew on it | A fancy necklace |  |

| | | | |
|---|---|---|---|
| Water splits open rock in the desert like a peach. | | A peach that is so ripe it splits open |  |
| Cities function, or act like, space stations. | | | |
| Water makes up two-thirds of our bodies, like a map of the world. | | | |
| Our vital, or body, fluids are saline, like the ocean. | | | |

## EXIT TICKET

| INSTRUCTIONS FOR TEACHERS:<br>• Review student instructions with the whole class. | |
|---|---|
| INSTRUCTIONS FOR STUDENTS:<br>This graphic organizer will help you keep track of information about water for all of the readings. Each day you will write down new information from each reading.<br>• First, think about what the author said about the "magic of water." Write something you have seen that shows the "magic of water."<br>• Next, write what else you have learned about water sustainability. | |
| **Describe (write about) something you have seen that shows the "magic of water."** | I have seen something that shows the "magic of water." It was _____ _____ _____ _____ _____ |
| **Think about what we have learned so far. Why are we running out of water?** | Cities_____ _____. People use water for _____ in desert climates. |

# Appendix A: Glossary

| Word | Definition | Example |
|---|---|---|
| aquifer* | a layer of rock, sand, or gravel that contains water we can take for drinking | Cities there function like space stations, importing every ounce of fresh water from distant rivers or fossil **aquifers.** |
| arid* | extremely dry | In **arid** places the same physics amplify evaporation and drought. |
| astonishing | extremely surprising; amazing | One **astonishing** morning, we had a visitation of frogs. |
| climate change | a long-term change in the earth's climate | Water is the visible face of climate and, therefore, **climate change**. |
| consecutive | following one after another without a break | Last summer brought us a string of floods that left tomatoes blighted on the vine and our farmers needing disaster relief for the third **consecutive** year. |
| crops | plants grown on a farm | But such is the human inclination to take water as a birthright that public fountains still may bubble in Arizona's town squares and farmers there raise thirsty **crops**. |
| distant | far away | Cities there function like space stations, importing every ounce of fresh water from **distant** rivers or fossil aquifers. |
| demonstrates | shows | Shifting rain patterns **demonstrates** or shows that hot air holds more water molecules than cold. |
| decade | 10 years | The past **decade** has brought us more extreme storms than ever before, |

| Word | Definition | Example |
|---|---|---|
| dread | fear | Our deepest **dread** is the threat of having too little moisture—or too much. |
| drought | a long period with little or no rain | In arid places the same physics amplify evaporation and **drought**, visible in the dust-dry farms of the Murray-Darling River Basin in Australia. |
| encroach | invade | The truth **encroaches** on all the fantasies, though, when desert residents wait months between rains. |
| evaporation | the process of turning liquid into vapor | In arid places the same physics amplify **evaporation** and drought, visible in the dust-dry farms of the Murray-Darling River Basin in Australia. |
| extreme | very great; far beyond what is usual or reasonable | The past decade has brought us more **extreme** storms than ever before. |
| flood | a sudden, strong flow of water onto land that should not be under water | Shifting rain patterns **flood** some regions and dry up others as nature demonstrates a grave physics lesson: Hot air holds more water molecules than cold. |
| for granted | assume, or think, that something will always be there without any effort or work | Even while we take Mother Water **for granted**, humans understand in our bones that she is the boss. |
| *founded* | created; originated | All we know is **founded** on its rhythms: Water will flow from the snowcapped mountains, rain and sun will arrive in their proper seasons. |

| Word | Definition | Example |
|---|---|---|
| fountain | a spray of water made by a machine | But such is the human inclination to take water as a birthright that public **fountains** still may bubble in Arizona's town squares and farmers there raise thirsty crops. |
| *function* | operate or act | Cities there **function** like space stations, importing every ounce of fresh water from distant rivers or fossil aquifers. |
| gale* | a strong wind (like in a storm) | When the Earth seems to raise its own voice to the pitch of a **gale**, have we the ears to listen? |
| glacier | a large mass of ice formed in cold regions from compacted snow and very slowly moving down a slope or across land | On top of the Himalaya, **glaciers** whose meltwater sustains vast populations are dwindling. |
| grave* | very serious | Shifting rain patterns flood some regions and dry up others as nature demonstrates a **grave** physics lesson: Hot air holds more water molecules than cold. |
| hold in thrall* | hold someone's attention; fascinate | The little, nameless creek tumbling through our hollow holds us in **thrall**. |
| impersonate | copy the appearance of someone or something | Retirees from rainier climes irrigate green lawns that **impersonate** the grasslands they left behind. |
| import | buy something from another country | Cities there function like space stations, **importing** every ounce of fresh water from distant rivers or fossil aquifers. |
| *inclination* | a natural tendency towards doing something | It is the human **inclination** to take water as a birthright. |

| Word | Definition | Example |
|---|---|---|
| inconsequential | not important | We've lately raised the Earth's average temperature by .74°C (1.3°F), a number that sounds **inconsequential**. |
| indicates | shows or signals | Water **indicates**, or shows, the changes in the weather. |
| irrigate* | bring in water for grass or food crops | Retirees from rainier climes **irrigate** green lawns. |
| magic | mysterious quality; charm | Wonders reflect the **magic** of water, for example a spider web drooping with dew like a rhinestone necklace. |
| moisture | small amount of liquid in the air | Our deepest dread is the threat of having too little **moisture**—or too much. |
| *purchase** | a) a secure grip or hold<br><br>b) buy something | a) The past decade has brought us more extreme storms than ever before, of the kind that lay down great sodden oaks whose roots cannot find **purchase** in the saturated ground.<br><br>b) *From Lesson 8:* In 2008, lack of water led China to try to lease or **purchase** land in southern Africa. |
| realize | understand in a clear way; suddenly understand | We need to **realize** the truth about water. |
| *region* | an area of the world | Shifting rain patterns flood some **regions** and dry up others. |
| *reliable* | consistently good in quality | Should we tell the children that "**reliable**" has been rained out, or died of thirst? |
| repetition | happening many times in the same way | After enough **repetitions** of shocking weather, we can't remain indefinitely shocked. |

| Word | Definition | Example |
|---|---|---|
| residents | People or animals that live in a place | Snakes are desert **residents**. People who live in the desert are also desert **residents**. |
| rhythm | repeated pattern | All we know is founded on its **rhythms**: Water will flow from the snowcapped mountains, rain and sun will arrive in their proper seasons. |
| runnel* | a small stream of water | Before we came to southern Appalachia, we lived for years in Arizona, where a permanent **runnel** of that size would merit a nature preserve. |
| saline* | containing salt | Water makes up two-thirds of our bodies, just like the map of the world; our vital fluids are **saline**, like the ocean. |
| saturated | filled or soaked completely | The past decade has brought us more extreme storms than ever before, of the kind that dump many inches in a day, laying down crops and utility poles and great sodden oaks whose roots cannot find purchase in the **saturated** ground. |
| *shift* | move or change position | How can the world **shift** beneath our feet? |
| survive | continue to live | It's the briny broth of our origins, the pounding circulatory system of the world, a precarious molecular edge on which we **survive.** |
| sustainable | using a resource without using it all up | In ecology, **sustainable** means that a biological system does not use up its resources like water. |

| Word | Definition | Example |
|---|---|---|
| sustains | supports | On top of the Himalaya, glaciers whose meltwater **sustains** vast populations are dwindling. |
| threat | danger | Our deepest dread is the **threat** of having too little moisture—or too much. |
| *visible* | able to be seen or noticed easily | Water is the **visible** face of climate and, therefore, climate change. |
| wonders | amazing things | We keep an eye out for **wonders**, my daughter and I, every morning as we walk down our farm lane to meet the school bus. |

**Vocabulary from the Expeditionary Learning lessons.*
*Italicized words are from the Academic Word List.*