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Chapter (Lesson) 4. A Water Story: life and reciprocity, part 2

Lesson Four Intentions:

- Students identify ways a story can move us, and the role clarity of message plays in storytelling.
- Students consider their relationship to clean water, and the history, present and future of water.
- Students examine their own water use, and consider clean water as a necessity and human right.
- Students discuss the differential impact of pollution and a changing climate on water safety and water access.

Lesson Four Overview:

Inspired by activists and communities working to uphold clean water as a human right, and to protect and restore the world's rivers, lakes, streams, watersheds, and waterways, this lesson further explores what it is to be an "environmentalist." It invites students to explore how they get their water, what is happening to freshwater systems and clean water access and protection around the world, which communities are being most impacted, and what **solutions-driven research** means and can accomplish. If we all looked more deeply and widely, thought as the rivers and streams (land, mountains, trees, oceans), and/or as caretakers of the Earth, how might we act and what might we experience? How do we **pay attention and ask questions** in ways that give rise to solutions and repair; and if we have an inspiration or idea, how can we put it into action? What stories move us?

Key Themes:

- Curiosity and observation
- Human impact on the natural world
- Clean water as human necessity and human right
- Freshwater loss/pollution, causes and impacts
- What we can do to help protect/repair freshwater ecosystems and water access

Duration: This lesson is designed for 30 mins., but can be done in 15-20, or expanded to 45-80 mins.

Lesson Components:

- Slides (in Google slides format; adaptable for educator needs/preferences)
- VIDEO: "Earthrise"; "Home is Where the Water Runs Clean"; "Ice Stoppas of Ladakh"
- WRITING/REFLECTION: "Earthrise"; connection with place
- Resources and extension ideas (see end of lesson)

Materials:

- Educators: Lesson PDF, access to online media (for video viewing), slide deck (customizable)
- Students: pencil/pen and paper

Connections (see extensions/resources and standards below; full standards for this project [here](#)):

Justice, Environment
Film, Reading/Writing; History; STEM
Mini-challenge (can be used as a way of assignment/assessment)
Further Reading; Watching; Exercises

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An Initial Reflection

Slide 3

(starting with our own experience; **student writing**)

“I’m writing my story so that others might see fragments of themselves.”

– Lena Waithe

Read the above quote aloud, and then ask students to reflect on the following question:

What stories do you remember the most?

Give students a few minutes to write their reflections. Encourage them to explore, and especially to see if they can keep with this reflection even **beyond the first few thoughts, memories, or impressions** that come to them.

You might also ask things like:

- Are there stories you remember hearing when you were very young? What were some of them?
 - Do you think of anyone in your family, or in your life, as a “storyteller”?
- Are there stories you’ve read that are the most memorable for you?
 - Books you’ve read more than one time?
 - What appealed to you about these particular stories?
- Are there stories you’ve listened to or watched that you remember particularly well?
- What qualities in the storyteller/story have you want to listen?

When the right amount of time for you and your class has passed, you might invite students who would like to do so to share. They could read what they wrote, or share a portion, or talk generally about the direction it took them.

Slide 4

“Earthrise”

a spoken word poem (possible video)

Here is an example of a story told through a spoken word poem. This poem is called “Earthrise,” and is by Amanda Gorman, the first Youth Poet Laureate of the United States.

Show the [“Earthrise”](#) video of Amanda Gorman (also linked in the slide).

- Reflections on this video? What was it like to watch it; what stood out to you?
- What qualities would you say Amanda Gorman brings to the way she spoke this poem?
 - How does she create a positive feeling about a serious/stressful topic?
- What message(s) are you left with?
- Do you feel like Amanda Gorman makes a call to action in this video?

Slide 4

Further Considering Our Relationship to Water

As we think about new stories to be told, and about the Earth some 50 years after the Earthrise photo, what shared resources and aspects of our living continue to need our attention, voices and visions? Sandra Postel has worked on

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“I firmly believe that our human story over the next several decades will be to no small degree a **water story**. But the conclusion of that water story is not a foregone one; we’re still creating that narrative, and we’re making that narrative every day by the choices we make about how we use, manage, value, and even think about, fresh water.”

– Sandra Postel, National Geographic Fellow, Global Water Policy Project

- Reflections on this quote?
 - Why might the human story be “to no small degree a water story”?
 - Who is telling the “stories of water”?
 - What do you think this means?
 - What stories need to be told?
 - What differences do you think exist in people’s “water story”?
 - Water access?
 - Water use?
 - Quality of available water?
 - Other considerations?



Home is Where the Water
Runs Clean (video)

Slides 6, 7, 8

While the composition of our own bodies is largely salt water, to survive, we need to consume fresh water. What other human activities require clean water?

Have students generate a list of activities.

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This [video](#) made by a Challenge participant last year is an example of one that provides a brief overview of the role water plays in life and society.

- Anything in particular that stood out to you in this video?
- What were the issues that you noted?
- What message(s) are you left with?
- What do you notice about your own daily use of and access to water?

You might include/explore...

food production, cooking, bathing, sanitation, power generation, manufacturing, watering lawns
washing dishes, brushing teeth

Did You Know? Slides 9 & 10

This can also be done as a Kahoot quiz [HERE](#). You can also have students do this in groups of 3-4 as a collective exercise.

- There is the same amount of water on Earth today as there was when _____ roamed.
- Just less than _____ percent of the planet's water is available to meet daily drinking water, sanitation and food needs of over 7.8 billion people and millions of other species.
- More than 97% of the world's water is too _____ to drink.
- Another 2% is not available to drink because it is locked up in _____ caps and _____.
- Access to clean water is a local issue and a _____ issue.
- All of us live in the _____ sphere.
- To support the average American lifestyle today requires _____ times the global average for water use.
- Agriculture (farming) accounts for _____ percent of global water withdrawal.
- As the human population continues to rise, so does the number of people experiencing water _____ (meaning a water shortage).
- It is estimated that 2.2 _____ people in the world lack access to safely managed drinking water services.
- The United Nations estimates that 3 billion people worldwide lack basic _____ facilities at home.

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Answers:

- the dinosaurs
- one percent
- salty
- ice caps and glaciers
- global
- Hydrosphere
- 2 times
- 70 percent
- scarcity (sometimes also said as “water stress”)
- billion
- handwashing (hugely impactful in the time of Covid)

Source: [National Geographic](#).
[United Nations](#)

Source:



Ice Stupas of Ladakh

(video)

Slide 11

Thinking about water as a fundamental human right, in 2003 the UN Committee on Economic, Social and Cultural Rights [stated](#): “The human right to water is indispensable for leading a life of human dignity....It is a prerequisite for the realization of other human rights.”

- Thoughts on what this means?
 - Why/how is water a “prerequisite” to “the realization of other rights”?
 - Who has access to clean water, and which communities have little or no access?

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Show [Ice Stupas of Ladakh](#) - Watch from 3:25-6:25.

You might explore questions like:

- One word that captures a feeling or sense you have after watching this video?
 - What most stood out to you?
 - Whose points of view do we experience in this story? (Narrators, locals, etc)
 - What awareness/action might this video inspire?
 - What's the tone of the video and the narrator? What roles do images and sounds play?
-

Water Use

Slide 12

How much do we know about water use, and what it takes to create things we may not associate with water at all? For example, on average, how many gallons of water does it take to make a cotton t-shirt? (Around 700 gallons of water; most is consumed growing the cotton in the field). Sandra Postel invites, **“Think about all of the water we’re wearing!”** (even just right now).

And what about a hamburger (634 gallons of water); or a cup of coffee (34 gallons of water).

What other examples can you find? How can this be calculated? (Who works on this? With what tools?) And what changes can be made?

Clean Water and Environmental Justice and Protection

Slide 13

As many as 63 million Americans (nearly 1/5 of the United States) were exposed to unsafe drinking water between 2007 and 2017.

Unclean water can cause serious health issues, yet in many communities polluted waters are not being addressed. Many local water plants, especially in small, lower income and minority communities, cannot afford or access equipment needed to filter contaminants out of water, or to replace old pipes that leave people susceptible to lead contamination, leaks and broken water lines.

Further, studies have found that poor and minority communities across the U.S. are [disproportionately affected](#) by polluted waters (see linked *Washington Post* article).

In addition, water is being polluted by industrial dumping, farm pollution, and oil spills as oil pipelines are built through communities. **What more can we learn about water supplies, and what can do to increase knowledge, awareness and action?**

Slide 14

★ Challenge Prep 4: Your Water Story

Research and write a short personal narrative about your water story.

- Track your actions for one week in a journal:
 - Note every time you and your family use clean water for drinking, showering, cooking, cleaning, laundry, watering plants, etc.
- Research the following:
 - Where does your water come from?
 - Do you have a local water agency? If so, who is it?
 - Are there drought restrictions where you live?

Extension/Extras

How has human development changed the natural flow of water? What can we learn from the example of the Colorado River? You might show the eight minute extended trailer from [Watershed](#).

Executive produced and narrated by Robert Redford and directed by award-winning filmmaker Mark Decena, *Watershed* tells the story of the threats to the once-mighty Colorado River, and offers solutions for the future of the American West. As the most dammed, diked, and diverted river in the world struggles to support 40 million people and the peace-keeping agreement known as the Colorado River Compact reaches its limits, *Watershed* introduces hope.

Watershed moves between Jeff Ehlert, a fly-fishing guide in Rocky Mountain National Park; Colorado rancher Dan James; delta restoration worker Edith Santiago; Navajo council member Glojean Todacheene; Rifle, Colorado, mayor Keith Lambert; Los Angeles native Jimmy Lizama, and a group of Outward Bound teens rafting down the Colorado River as they all reflect a compelling **new water ethic**—one that illuminates how letting go of the ways of old can lead to a path of coexisting with enough for all.

- **How does each person included reflect on their own experience, and how does this film draw out the relationship between human beings and the place in which they live?**

Also see [Raise the River](#)

Raise the River is a unique partnership of six U.S. and Mexican non-governmental organizations committed to restoring the Colorado River Delta.

Raise the River's primary goal is to bring water and life back to the Colorado River Delta, and in doing so, create a model for future trans-national river restoration efforts throughout the world. In meeting our goal, we will rebuild the habitats that support local communities and wildlife.

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Suggested Standards: Language Arts and History/Social Studies

This lesson gives students multiple opportunities to engage with **language, images and text**, with particular focus on how point of view impacts the story one tells. Students also have a chance to reflect on their own experience and point of view in **conversation and writing**.

CCSS.ELA-LITERACY.CCRA.R.7

Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

CCSS.ELA-LITERACY.CCRA.SL.2

Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.CCRA.L.3

Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

CCSS.ELA-LITERACY.CCRA.W.6

Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

CCSS.ELA-LITERACY.CCRA.W.7

Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.CCRA.W.9

Draw evidence from literary or informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.CCRA.SL.1

Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

CCSS.ELA-LITERACY.CCRA.SL.2

Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.CCRA.SL.4

Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

Suggested Standards: STEM (Science, Technology, Engineering, Math)

Throughout this lesson students are encouraged to understand the primacy of **observation**, and the need to attend closely to **patterns and relationships**, and to be able to envision **the impact of actions**.

- Patterns and relationships
- Precision and depth in observation
- Inference and probability
- Ratios and proportional relationships

Suggested Connections: NGSS/Environment

Students are encouraged to make connections between the health of natural systems and the health of human beings and human communities. In addition, phenomena and change may be observable at one scale and not another, or may require a different way of inquiry and attention to detect and understand.

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- Health of human lives and health of natural systems
- Flow of energy and matter at the scale of the entire planet
- Exchange of matter between natural systems and human societies affects long-term functioning of both
- Phenomena that can be observed at one scale may not be noticed/observable at another scale
- Systems interact with other systems
- Stability might be disturbed either by sudden events or gradual changes that accumulate over time

Suggested Connections: Social Justice

The integration of perspectives and voices in this lesson is intended to encourage greater appreciation for the depth of **one's own identity**, and **respectful curiosity about others' lived experience**.

Diversity. Students will respectfully express curiosity about the history and lived experiences of others and will exchange ideas and beliefs in an open-minded way.

Action. Students will recognize their own responsibility to stand up to... injustice.

Suggested Connections: Social Emotional Learning Competencies

Components of this lesson are meant to support students' sense of **confidence and agency**, as well as their social-awareness and sense for relationships; as well as how much relationships need tending, both with **respect** to our relationship with the natural world and each other.

- Self-awareness (confidence, self-efficacy)
- Social-awareness (perspective-taking, appreciating diversity, respect for others)
- Social skills (communication, relationship building)
- Responsible decision-making (evaluating, reflecting)

Suggested Connections: UN Sustainability Goals

(*Click the images to go to pages on the UN's website that detail the goals and intentions behind each.)

