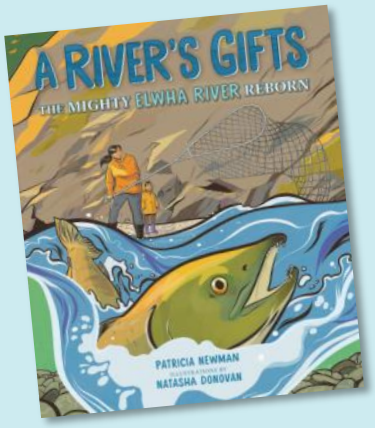

A standards-aligned curriculum guide for grades 3 – 6

A RIVER'S GIFTS
THE MIGHTY ELWHA RIVER REBORN

About the book

Age Range: 8 - 12 years
Grade Level: Grades 4 - 6
Publisher: Millbrook Press
ISBN: 978-1541581210

A mighty river. A long history.

For thousands of years, the Elwha river flowed north to the sea. The river churned with salmon, which helped feed bears, otters, and eagles. The Lower Elwha Klallam Tribe, known as the Strong People located in the Pacific Northwest, were grateful for the river's abundance. All that changed in the 1790s when strangers came who did not understand the river's gifts. The strangers built dams, and the environmental consequences were disastrous.

Sibert honoree Patricia Newman and AIYLA honor illustrator Natasha Donovan join forces to tell the story of the Elwha, chronicling how the Strong People successfully fought to restore the river and their way of life.

About the author and illustrator

Patricia Newman's books inspire young readers to seek connections to the real world. Her titles encourage readers to use their imaginations to solve real world problems and act on behalf of their communities. In addition to *A River's Gifts,* her books include Sibert Honor title *Sea Otter Heroes: The Predators That Saved an Ecosystem*; Orbis Pictus Award Recommended *Planet Ocean;* Outstanding Science Trade Book *Eavesdropping on Elephants*; Bank Street College Best Book *Zoo Scientists to the Recue*; Booklist Editor's Choice *Ebola: Fears and Facts*; and Green Earth Book Award winner *Plastic, Ahoy! Investigating the Great Pacific Garbage Patch*. Patricia frequently speaks at schools and conferences to share how children of any age can affect change. Visit her at patriciamnewman.com.

Natasha Donovan is the illustrator of the award-winning Mothers of Xsan series (written by Brett Huson). She also illustrated the graphic novel *Surviving the City* (written by Tasha Spillett), which won a Manitoba Book Award and received an American Indian Youth Literature Award (AIYLA) honor. Natasha is Métis, and spent her early life in Vancouver, British Columbia. She lives in Bellingham, Washington. natashadonovan.com

Curriculum guide objectives

- To engage readers with phenomena-based questions about our connection to rivers
- To help students understand our how our habits affect our watershed's health
- To use one book to integrate science, social studies, and language arts lessons in the classroom
- To encourage and empower students to become a voice for nature in their homes, schools, and communities

Contents of this curriculum guide

All lessons in this guide integrate science, social studies and language arts.

Common Core State Standards

Reading: Anchor standards R.1 through R.10
Language: Anchor standards L.2 and L.4 through L.6
Speaking/Listening: Anchor standards SL.1 through SL.4
Writing: Anchor standards W.1 through W.8

Next Generation Science Standards

Ecosystems: Interactions, Energy, and Dynamics

- LS2A: Interdependent relationships in ecosystems
- LS2B: Cycles of matter and energy transfer in ecosystems
- LS2C: Ecosystems dynamics, functioning, and resilience
- LS4D: Biodiversity and humans

Earth and Human Activity

- ESS2C: The role of water in Earth's surface processes
- ESS3C: Human impacts on Earth Systems

United Nations Foundation Sustainable Development Goals

The Sustainable Development Goals (SDGs) are the world's shared plan to end extreme poverty, reduce inequality, and protect the planet by 2030.

Adopted by 193 countries in 2015, the SDGs emerged from the most inclusive and comprehensive negotiations in UN history and have inspired people from across sectors, geographies, and cultures. Achieving the goals by 2030 will require heroic and imaginative effort, determination to learn about what works, and agility to adapt to new information and changing trends.

The UN Foundation focuses on ideas and initiatives that generate larger impact, advance the SDG imperative to "leave no one behind," and are backed by evidence, practical commitments, and action.

Individuals, innovations, and actions are helping the planet realize the potential and promise of the SDGs.

(excerpted from the United Nations Foundation)

What is a watershed and how does it work?

(adapted from Expedition Northwest - https://omsi.edu/sites/all/FTP/files/expeditionnw/4.E.1.Crumple.pdf)

We all live in a river basin, an area of land drained by a river and its tributaries. This activity will show students how a watershed works.

MATERIALS

- Student notebook
- One 8.5" x 11" sheet of paper per student, preferably graph paper]
- One sheet of cardboard or tag board approximately 8.5" x 11" (You do not have to be precise.)
- Several different colors of water-soluble, non-permanent, felt markers (e.g. Crayola). The best colors are dark colors, such as black, brown, purple, blue and green. It is best for each student to have at least one blue marker.
- Clean spray bottles (You may want to have only one available.)
- Scotch tape, one roll for every two students (can be shared).
- Plastic relief map (if available) or a shaded, paper relief map — preferably of your area
- We Speak Like Scientists chart (next page)

VOCABULARY: watershed, mountain pass, divide, saddle, basin, valley, canyon

ACTIVITY: Crumple a watershed

- Take a sheet of paper and crumple it up into a wad. The looser the wad, the better.
- Uncrumple the paper and set it on a sheet of cardboard. Tape the edges of the paper onto the cardboard based leaving at least 1" of cardboard exposed around the perimeter. (You many want to create a model for students to follow.)
- Ask the students if they can imagine being in an airplane above this landscape. Can they find the tallest mountain or the deepest canyon? Have them inspect their landscape from above and show them an example of a true plastic relief map or a shaded relief map.
- Have them look at their landscape from the side as if they were on a nearby plain looking up at the mountains. There are many geographical or landform terms that can be introduced or reviewed as appropriate to students' grade level.
- Have the students select a dark-colored felt marker, other than blue, and gently shade the tops of the "mountain" ridges and divides. This may take a while.
    - Encourage the students to carefully follow ridges as far as they go, all the way to the edge of the tape if necessary. Take the time to explain that ridges define the boundaries of watersheds. Also have them look at their landscape from above and notice that some watersheds are entirely encircled by ridges, "closed watersheds," and some are open to the edge of the paper, "open watersheds." Careful observation will also show that big watersheds are made up of smaller watersheds.
- Have the students select the blue marker and carefully draw where they think the rivers and lakes would be in their valleys.
    - This can be tricky for younger students if their crumple patterns are too complicated or too narrow for the felt markers to fit into. Tell them that this requires some imagination and careful observation of the folds and elevation changes of the paper. For rivers, it is easiest to start at the bottom of a valley and follow it uphill or start from the side of a mountain and pretend to be a drop of water slowly moving down hill.
    - At many points there will be valleys where they cannot go "down" any farther. That may be a place to draw a lake. Lakes can be drawn in little bowls on hillsides or at the bottom of long valleys with ridges at both ends. You can have them simulate a mountainous island by having them color the tape and cardboard blue as well. Ask students to find where waterfalls might occur or where the rivers are so flat that swamps might occur. Tell them that, even though watersheds are defined by the ridges, they are named by the rivers and streams. Make sure they write their names on the bottom of the cardboard before the next step.

- Now tell the students that it is time to test how good they were at predicting the paths of the rivers.
  - Take the spray bottle and simulate rain by misting the paper watershed while it is flat on a counter. Have them observe the water seep downhill through the paper. You can make different effects by how wet you make the paper. If you spray the paper heavily, actual drops will run down the sides of the paper and pool into "lakes." This can be fun especially for younger grades.
  - Have the students take turns spraying their own watersheds or take turns bringing them to you to spray. It is best to have one table or counter set aside for this.
  - While the models are drying, the paper will become even more colorful as the dark inks slowly separate into a rainbow of colors.
- Once they are dry, let the students take their watersheds back to their desks. Ask them if they correctly predicted where the water would flow into rivers and lakes. Finish by asking them again to define what a watershed is and, with a felt marker, have them outline one entire watershed.
- Depending on the ages of your students, ask them to research the river basin/watershed for your school. Maps of your area are helpful. Try Googling, "What watershed is [my city] in?"

- **Discussion**: As students respond to the following questions, ask them to "speak like a scientist." The chart below has some suggestions for how to begin.
  - What do you know about our watershed?
  - What questions do you have about it?
  - When it rains in our city/town, where does the water flow?
  - How does our watershed store our drinking water?
  - How can we enjoy the various rivers and lakes in our watershed?
  - What can we do to keep our watershed clean?

We Speak Like Scientists!

Scientists share their own thinking	Scientists agree and build on each other's ideas.	Scientists respectfully challenge each other's ideas.
I observed _____.	I agree with _____ and can add that _____.	I would argue that _____.
Based on my observations, I think _____ because _____.	I want to build on your idea about _____ : _____.	My data suggests something else: _____.
For example, _____.	What _____ said about _____ makes me wonder _____.	Could you elaborate on why you think _____?

How does a river form?

(adapted from "Stream Table" on Science Friday - https://www.sciencefriday.com/educational-resources/stream-table/)

Ask students to name any rivers that they know in the United States or elsewhere in the world. Write the names of the rivers on the board. What are some similarities or differences between these rivers? For example, do they all flow from north to south? Display topographical images of these rivers and have students discuss how each one is similar or different. Next students will create their own small-scale rivers using a stream table.

MATERIALS FOR EACH GROUP OF STUDENTS

- Student notebooks
- 3 disposable rectangular aluminum trays, such as turkey roaster pans
- Scissors
- Coffee filter
- Duct tape
- Drinking straw
- Hole punch
- Nail
- 32-quart rectangular plastic storage bins or another aluminum pan
- Bag of sand, enough to fill each aluminum pan halfway
- Spray bottle
- Wooden blocks, 4 – 6
- Water

VOCABULARY: headwaters, mouth, upstream, downstream, tributary, meander, channel, riverbank, erosion, deposition

MAKING THE STREAM TABLE—Stream Table Construction video

- Use scissors or a nail to poke holes at one end of one aluminum pan. This will be the "mouth" of your river where the water drains into another aluminum pan or the plastic storage bin. Tape a coffee filter over the holes (but don't cover the holes with tape) so you don't lose sand as the water drains off.
- Hand out one aluminum tray, one plastic storage bin, and a few wooden blocks per student or group. Tell students that each aluminum tray will be their stream table. The wooden blocks will be used to prop the stream table up to form an incline, and the plastic storage bin will be placed under the hole in the aluminum tray to catch any runoff water.
    - OPTION: Try connecting up to 4 aluminum trays together with duct tape. You'll need to cut the short end and fold it out of the way to slide the trays together.
- Have students pour sand evenly into each tray until it is filled halfway. Spray the sand with water and stir the sand around until it is evenly moistened. This will help hold the sand inside the aluminum tray when it is propped on an incline.
- To make your water source:
    - Ask students to fill their 2L bottle with water.
    - Cut about 1.5" to 2" off the straw. Take a 2" piece of duct tape, and using the hold punch, punch two holes opposite each other. Place the tape over the mouth of the bottle to the two hole are within the area of the opening.
    - Insert the straw piece in one hole. The other hole allows air to enter the bottle for easy pouring.

The stream table from Stream Table Construction video

https://youtu.be/X0xTSNASGv8

- Students may have to prop the water jug on blocks as well, in order to make sure the spigot reaches the inside of the aluminum tray.

ACTIVITY #1:

- Ask students to predict what will happen when the water is turned on. Have students turn on the water so that it pours in a steady, moderate stream.
- Have students record their observations in 10-minute intervals for about 20 – 30 minutes. Students should include sketches at each interval.
- Turn the water off after 20 to 30 minutes. Have students discuss the similarities or differences between each of their models. What were their observations? Did each model have the same result? How did the landscape influence the course of the river?
- Have students empty the water from the plastic bin and refill the water jug to prepare for the next experiment.

ACTIVITY #2:

- Have students remold the sand in the tray to create a surface with several hills and valleys.
- Ask students to predict what they think will happen in this scenario. Will the same river formation happen? Have students turn on the water so that it pours in a steady, moderate stream.
- Have students record their observations in 10-minute intervals for about 20 to 30 minutes. Students should include sketches at each interval.
- Turn the water off after 20 to 30 minutes. Have students discuss the similarities or differences between each of their models. Did each model have the same result? How did each landscape influence the course of the river? How were the results different or the same, compared to the flat and inclined model?

EXTENSIONS

Change some of the variables to observe how they affects the river's path and speed, or the erosion and deposition of sand. Students can create their own variables to test or try one of the following:

- Place other objects in the sand, such as small pebbles, stones or small plastic houses or trees.
- Build a dam in the middle the river.
- Place two or three water jugs next to each other and turn all spigots on at the same time.
- Mold the sand into a valley. Compare the differences when the water flows directly down the middle, to what happens when the water flows from the inclined section of the valley (the long side of the tray).

How does a river habitat work?

(adapted from Olympic National Park's Freeing the Elwha: Science Unit Lesson 13: Salmon Nutrient Cycling or https://home.nps.gov/olym/learn/education/science-unit-2.htm)

MATERIALS

- Student notebooks
- Tally sheet on next page
- Organism cards—cougar, racoon, mink, mouse, and sunflower (pages 10 and 11, copy and cut apart)
- Beads or beans for each player to represent energy points
- Small dixie cups for the beads/beans

FOOD WEB LAB

- In this lab, we will be imitating a small terrestrial riparian food chain in which sunflowers represent the lowest trophic level (the producers), mice represent the primary consumers, mink represent the secondary consumers, and cougars represent tertiary consumers. The raccoon is an omnivore that can feed at multiple trophic levels.
- The game has 4 rounds. At the end of each round, students tally up the energy points they earned/lost and record them in their notebook using the chart on the next page.
- Students draw an Organism Card from a hat to determine which organism they are on the food chain. Their organism is assigned a certain quantity of energy points symbolized by beads. If the student is eaten by an organism higher in the foot chain, they give up points to what ate them. If a student eats another organism, they receive points from that prey item.
- If students encounter something they cannot eat, they will lose points from the energy required to fight with or deal with that organism.
- At the beginning of each round, sunflowers will acquire 1 energy unit each from photosynthesis.
- Once students know which organism they are, **DO NOT tell anyone**. Simply wander around until the teacher says **FEED!**
- If Student A is an animal, at that moment, s/he approaches a nearby classmate (Student B) and say "I am a _____, can I eat you?" If Student B reveals that s/he is a prey item, Student A takes the appropriate number of energy points from Student B. If Student B is one of Student A's predators, Student A gives Student B the points and sits down for the remainder of the round.
- If a student is a sunflower, s/he doesn't say anything. Sunflowers let other students approach them.
- At the end of each **round** (3 to 5 minutes per round), students record their starting and ending energy points in their notebooks.
- After 4 rounds, the teacher tallies the results for all organisms, then:
    - Gives each sunflower in each round 1 extra energy point for photosynthesis
    - Subtracts energy points lost to the environment as heat — 3 points/sunflower; 8 points/other organism.

DISCUSSION

- Which organisms had an overall increase in energy points?
- Which organisms had the biggest decrease in energy points?
- Why did we have more sunflowers than mice and more mice than mink?
- Do you think this was a realistic exercise in how a food chain operates? Why or why not?
- How would you change the game to be more realistic?
    - Would you change the number of organisms in each category or add more categories?
    - Would you change the number of energy points each organism starts with or how many they get for feeding?
    - Any other ideas?

Organisms	Starting Energy Points	Round 1 Ending Energy Points	Round 2 Ending Energy Points	Round 3 Ending Energy Points	Round 4 Ending Energy Points
Cougar					
Racoon					
Mink 1					
Mink 2					
Mink 3					
Mouse 1					
Mouse 2					
Mouse 3					
Mouse 4					
Mouse 5					
Sunflower 1					
Sunflower 2					
Sunflower 3					
Sunflower 4					
Sunflower 5					
Sunflower 6					
Sunflower 7					
Sunflower 8					
Sunflower 9					
Sunflower 10					
SUBTOTALS					
Plus Energy Points from Photosynthesis					
Minus Energy Points lost to environment as heat					
TOTALS					

				
Cougar	**Raccoon**	**Mink**	**Mink**	**Mink**
<u>*You can not be eaten*</u>	You can be eaten by a Cougar, but not a snake.	You have 24 energy points.	You have 24 energy points.	You have 24 energy points.
You start with 44 energy points	You have 30 energy points	You can be eaten by a cougar, but not a raccoon.	You can be eaten by a cougar, but not a raccoon.	You can be eaten by a cougar, but not a raccoon.
If you eat a Raccoon you **gain** 10 energy points.	If you are eaten by a Cougar you **lose** 10 energy points.	If you are eaten by a Cougar you **lose** 10 energy points.	If you are eaten by a Cougar you **lose** 10 energy points.	If you are eaten by a Cougar you **lose** 10 energy points.
If you eat a mink you **gain** 8 energy points.	If you eat mice you **gain** 4 energy points.	If you eat mice, you **gain** 4 energy points.	If you eat mice, you **gain** 4 energy points.	If you eat mice, you **gain** 4 energy points.
If you eat mice, you **gain** 4 energy points.	If you eat a sunflower you **gain** 2 energy points.	If you fight a raccoon you **lose** 5 energy points in the fight.	If you fight a raccoon you **lose** 5 energy points in the fight.	If you fight a raccoon you **lose** 5 energy points in the fight.
If you try to eat sunflower, you **lose** 8 energy points.	If you fight a mink, you **lose** 5 energy points.	If you try to eat a sunflower, you **lose** 2 energy points.	If you try to eat a sunflower, you **lose** 2 energy points.	If you try to eat a sunflower, you **lose** 2 energy points.
				
Mouse	**Mouse**	**Mouse**	**Mouse**	**Mouse**
You have 16 energy points	You have 16 energy points	You have 16 energy points	You have 16 energy points	You have 16 energy points
You can be eaten by Cougars, mink, and raccoons.	You can be eaten by Cougars, mink, and raccoons.	You can be eaten by Cougars, mink, and raccoons.	You can be eaten by Cougars, mink, and raccoons.	You can be eaten by Cougars, mink, and raccoons.
If you are eaten you **lose** 4 energy points.	If you are eaten you **lose** 4 energy points.	If you are eaten you **lose** 4 energy points.	If you are eaten you **lose** 4 energy points.	If you are eaten you **lose** 4 energy points.
If you eat a sunflower you **gain** 2 energy points.	If you eat a sunflower you **gain** 2 energy points.	If you eat a sunflower you **gain** 2 energy points.	If you eat a sunflower you **gain** 2 energy points.	If you eat a sunflower you **gain** 2 energy points.
If you encounter another mouse you lose 1 point.	If you encounter another mouse you lose 1 point.	If you encounter another mouse you lose 1 point.	If you encounter another mouse you lose 1 point.	If you encounter another mouse you lose 1 point.

				
Sunflower	**Sunflower**	**Sunflower**	**Sunflower**	**Sunflower**
You have 10 energy points	You have 10 energy points	You have 10 energy points	You have 10 energy points	You have 10 energy points
You can be eaten by mice and raccoons	You can be eaten by mice and raccoons	You can be eaten by mice and raccoons	You can be eaten by mice and raccoons	You can be eaten by mice and raccoons
If you are eaten you lose 2 energy points.	If you are eaten you lose 2 energy points.	If you are eaten you lose 2 energy points.	If you are eaten you lose 2 energy points.	If you are eaten you lose 2 energy points.
Every round you gain 1 energy point from the sun through photosynthesis.	Every round you gain 1 energy point from the sun through photosynthesis.	Every round you gain 1 energy point from the sun through photosynthesis.	Every round you gain 1 energy point from the sun through photosynthesis.	Every round you gain 1 energy point from the sun through photosynthesis.
				
Sunflower	**Sunflower**	**Sunflower**	**Sunflower**	**Sunflower**
You have 10 energy points	You have 10 energy points	You have 10 energy points	You have 10 energy points	You have 10 energy points
You can only be eaten by mice and raccoons	You can only be eaten by mice and raccoons	You can only be eaten by mice and raccoons	You can only be eaten by mice and raccoons	You can only be eaten by mice and raccoons
If you are eaten you lose 2 energy points.	If you are eaten you lose 2 energy points.	If you are eaten you lose 2 energy points.	If you are eaten you lose 2 energy points.	If you are eaten you lose 2 energy points.
Every round you gain 1 energy point from the sun through photosynthesis.	Every round you gain 1 energy point from the sun through photosynthesis.	Every round you gain 1 energy point from the sun through photosynthesis.	Every round you gain 1 energy point from the sun through photosynthesis.	Every round you gain 1 energy point from the sun through photosynthesis.

Calling the salmon back

(adapted from Olympic National Park's Creative Response Lesson 2: Calling the Salmon Back to the Elwha and the Salmon Homecoming Alliance Student Workbook or https://home.nps.gov/olym/learn/education/creative-response-lesson-plans.htm and https://www.k12.wa.us/student-success/resources-subject-area/time-immemorial-tribal-sovereignty-washington-state)

Students will look at the world using "Salmon Eyes" and write a persuasive conversation-style poem to convince salmon to return to the Elwha River.

MATERIALS

- Student notebooks
- Pencil/pen

PROCEDURE

- Ask students to read *A River's Gifts* independently or read it aloud to the class.
- Then watch the video, Through Salmon Eyes to get a salmon's perspective of the river (https://vimeo.com/3584149). Although the video is not specific to the Elwha River, it's good practice to look at the river from the salmon's perspective.
- Discuss:
    - What combination of factors, both natural and manmade, is necessary for healthy river restoration?
    - How does this enhance the sustainability of natural and human communities?
- Complete Only the Strong Survive (next page) to calculate how many salmon will return from the ocean to their natal stream.
- Ask students to write a poem structured like a conversation in which one speaker asks a question and another speaker responds.
    - Within the question and answer structure the poem can rhyme, or it can be sad or silly, but it needs to include onomatopoeia. Students should choose their words carefully to make their poems strong, concise and musical. Think of this as a song to the salmon.
    - In the poem one speaker must be a salmon. The other speaker can be the student, someone else, or another salmon.
- The main objective of the poem is that the dams on the Elwha have come down and the River is once again accessible to wild salmon.
    - Ask the salmon to return with questions about their whereabouts, what they are doing, who they are with when they will be back, etc.
    - Tell the salmon about the beautiful river waiting for their return.
    - The salmon should reply as honestly as possible. They may have questions of their own. The responder may become the questioner.
- To brainstorm ideas for their poems, students can brainstorm in their notebooks with a table like the one below:
- Now identify the ideas from their notebook that they like best by circling them.

Who is your questioner?	**Who is your responder?**
Possible questions	**Possible responses**

- Instruct students to use the circled ideas to craft a poem in their notebook.
  - Ask students to listen to their words. Do they have music?
  - Do they create images in the our imaginations?
  - Can they use better words or a different arrangement of words?
- Ask students to arrange their poems into at least six stanzas. Remember a stanza in poetry is a series of lines arranged together into a pattern. Students read their poems aloud to the class.

Only the Strong Survive

A single female chinook lays about 5000 eggs in a series of nests called a redd, but the salmon life cycle is full of threats and perils. Use the numbers below to figure out how many spawners will make it back.

Use this space to do the math

1. A salmon deposited her **5,000** eggs in a redd. _____
2. Five hundred **(500)** eggs were not fertilized. _____
3. Sixty **(60)** were washed out of the gravel when a 3-wheeler crossed the stream. _____
4. Mud from a construction site washed into the stream and suffocated **1,000** eggs. _____
5. Three hundred **300** alevin died because they were very weak. _____
6. After the alevin developed into fry, **500** were eaten by other fish in the stream. _____
7. Forty-one **(41)** were eaten by birds. _____
8. As they neared the ocean, **260** smolts died while resting in a pool where the discharge from a power plant had made the water too warm. _____
9. In the ocean, **1,500** were eaten by bigger fish. _____
10. Orcas ate **95** salmon. _____
11. Fisherman caught **556** adult salmon. _____
12. As the salmon returned to their spawning stream, bears ate **180** of them. _____
13. Three **(3)** were dashed against the rocks trying to jump a waterfall. _____
14. The rest of the salmon spawned. _____
15. **HOW MANY SALMON WERE LEFT TO SPAWN?** _____

Adapted from Alaska Fisheries Science Center

What makes a story?

In the back matter of *A River's Gifts,* the Lower Elwha Klallam Tribe gave permission to reproduce Roger Fernandes's painting of the Lady of the Mountain breaking the dam. According to Roger, "Storytelling is the most powerful way of sharing, teaching, and communicating...Our ancestors carried hundreds of stories in their hearts."

PREPARATION

- Listen to Roger Fernandes talk about the importance of stories in this video (https://vimeo.com/214766563). And then listen to several of the stories he tells:
  - Huckleberry Medicine Story
  - Coming of Camas Story
  - Gossiping Clams Story
  - Grandmother Cedar Story
  - Raven and the Headman Story: Water Gives Life
  - Teachings of the Basket Story
- Choose one of the stories and discuss with the class.
  - Ask the students what the story meant to them? Why are stories important?
  - What are some of the strategies Roger uses to make his stories interesting? Some possible replies might include repetition, words that make pictures in our minds, and changes in his tone of voice.

MATERIALS

- Student notebooks
- Copy of *A River's Gifts*

PROCEDURE

- After reading *A River's Gifts,* make a list of what salmon mean to The Strong People. You might use the list in the box (inset) to generate questions and prompts for the students.
- Examine the "Safe Place for Salmon" graphic on the third spread of the story. Discuss with students each stage of the salmon life cycle and the importance of habitat to the success of each stage.
- Now, ask students to write a short story about salmon in the Elwha River.
- Help students polish this story so it's as perfect as possible, stressing peer critique groups, reading aloud for rhythm of words, and clarity.
- Once the students' stories are in final form, ask them to "memorize" their story — not necessarily word for word, but they need to know their story well enough to share it aloud without reading it.
- Ask students to sit in a circle and share their stories orally using one of the same strategies Roger Fernandes uses to tell a good story.
- Discuss what the stories mean to the audience.

What Salmon Mean to Native Americans

(from the Salmon Homecoming Activity Book on the Since Time Immemorial: Tribal Sovereignty in Washington State page of the Washington Office of Superintendent of Public Instruction website - https://www.k12.wa.us/student-success/resources-subject-area/time-immemorial-tribal-sovereignty-washington-state)

- Salmon are part of our spiritual and cultural identity.
- Over a dozen longhouses and churches on the reservations and ceded areas rely on salmon for their religious services.
- The annual salmon return and its celebration by our people assure the renewal and continuation of human and all other life.
- Historically, we were wealthy people because of a flourishing trade economy based on salmon.
- Salmon and the rivers they use are part of our sense of place. The Creator put us here where the salmon return.
- We are obliged to remain and protect this place.
- Salmon are indicator species: as water becomes degraded and fish populations decline, so too will the elk, deer, roots, berries, and medicines that will sustain us.
- As our primary food source for thousands of years, salmon continue to be an essential aspect of our nutritional health.
- The annual return of the salmon allows the transfer of traditional values from generation to generation.
- Without salmon returning to our rivers and streams, we would cease to be Indian people.

Identifying problems and solutions

Saving the environment is all about identifying specific problems and implementing solutions.

MATERIALS

- Student notebooks
- Copy of *A River's Gifts*

PROCEDURE

- Reread *A River's Gifts,* but this time ask students to listen for problems that The Strong People, scientists, and volunteers faced, and how they solved those problems.
- Ask the students to complete a T-Chart in their notebooks to record the problems they find in the text
- Take the Salmon Pledge below.

Sample T-Chart

Problems	Solutions
Bears no longer hunt on the banks of the river.	Bring salmon back, because bears eat salmon.
The lakes have tons of sediment built up that will all flow down-river when the dams are removed.	Release rocks with radio transmitters in them to measure the flow of the river to determine how fast to release the sediment.
Until the salmon return, The Strong People need to be	Start a fish hatchery until enough salmon return from the

(from the Salmon Homecoming Activity Book on the Since Time Immemorial: Tribal Sovereignty in Washington State page of the Washington Office of Superintendent of Public Instruction website - https://www.k12.wa.us/student-success/resources-subject-area/time-immemorial-tribal-sovereignty-washington-state)

Who lives in our local river habitat?

(adapted from Education World's Local River Life lesson or https://www.educationworld.com/a_lesson/01-1/lp239_03.shtml)

Students will identify rivers in their state, county, or province; research the various kinds of animals and plants living in or near the rivers; write short summaries about the animal and plant life in or near the rivers; draw pictures of the animal and plant life in or near the rivers; and compile the information and present in book format.

MATERIALS

- Student notebook
- teacher-selected and/or student-researched books, newspapers, and online sources about local rivers
- local map
- construction paper of various colors or tag board
- drawing paper
- scissors
- glue or paste
- hole punch and binder rings or clear plastic report covers and report clamps
- computer(s) with Internet access and/or word processing program and printer (optional)

VOCABULARY: animal, aquatic, book, plant, river

PROCEDURE:

- Identify some rivers in your area. Depending on your location, you may decide to identify rivers by city, town, county, province, or state.
- Choose one or two rivers. Organize students into small groups. Tell students that half the groups will research information about animal life in or near the river(s); the other half will research information about plant life in or near the river(s). Tell students that they will use the information they find to create a class book about the animal and plant life in or near the river(s).
- Have the class use school, library, or online sources to research the information. If images of animal and plant life are not available, students might draw pictures.
- Have students write one-page summaries about each type of plant and animal life they study. Let students draw the pictures on drawing paper.
- Have students cut and paste pictures and summaries onto construction paper. Compile the pages into book format. Hold the pages together, using a hole punch and binder rings or clear plastic report covers and report clamps. Keep the book in your classroom library.
- Variations:
    - Idea 1: For younger students: Have students create a picture book about the animal and plant life in or near local rivers.
    - Idea 2: Have students create the summaries using a word processing program and print the pages on a printer.
    - Idea 3: Have students create the pictures with KidPix or another drawing program.

Additional Resources

- Amplify Our Ancestors: How to Decolonize Your Classroom, a Teacher-to-Teacher keynote presented by Shana Brown, 2021. Download the presentation slides.
  - https://youtu.be/5HFl38p5Ul0
  - https://www.k12.wa.us/sites/default/files/public/indianed/curriculum/TeachertoTeacher/T2TShanaBrownKeynote%20Fall2020.pdf
- The full curriculum for Since Time Immemorial: Tribal Sovereignty in Washington State
  - https://www.k12.wa.us/student-success/resources-subject-area/time-immemorial-tribal-sovereignty-washington-state
- More about the Lower Elwha Klallam People (The Strong People)
  - https://www.elwha.org/
- The full Freeing the Elwha Curriculum
  - https://www.nps.gov/olym/learn/education/freeing-the-elwha.htm

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