



Lesson 7

Using Water



Learning Standards & Assessment



Time



Resources



Curricular Integration



Handouts

CRD

every drop counts



Science

Big Ideas

- ▶ Water is essential to all living things, and it cycles through the environment.
- ▶ Living things have life cycles adapted to their environment.

Content

- ▶ Water sources including local watersheds
- ▶ Water conservation
- ▶ Metamorphic and non-metamorphic life cycles of different organisms
- ▶ Similarities and differences between offspring and parent

English Language Arts

Big Ideas

- ▶ Stories and other texts connect us to ourselves, our families, and our communities
- ▶ Through listening and speaking, we connect with others and share our world

Content

- ▶ Strategies and processes
 - oral language strategies
- ▶ Language features, structures, and conventions
 - Word patterns, word families
 - Letter formation



45-60 minutes

Lesson 7a:

Using Water - Who and How

Purpose

This is the first of the Using Water lessons. This brief lesson introduces students to the topic. The subsequent lessons are:

- 7b: How Animals Use Fresh Water
- 7c: How Plants Use Fresh Water
- 7d: How We Use Fresh Water
- 7e: Using Water - Who and How - Conclusion

Using a gallery walk approach, this lesson focusses on how animals (terrestrial and aquatic), plants and humans use water.

Preparation

1. Photocopy (one/student) "How Animals, Plants and People Use Water"
2. Set up a gallery walk of images depicting various ways in which water is used by animals.
3. Print images of animals using water (possible source www.crd.bc.ca/teacher)
4. Place each image on a large piece of paper, or on the board, so that there is room for notes on each side.



Optional- Set up criteria based on BC Ministry of Education Writing Standards- "Writing to Communicate Information" page 53
www.bced.gov.bc.ca/perf_stands/writing_g2.pdf.



Educator's Kits, including hardcopy lesson plans and support materials, are available for loan through the CRD. For pickup locations, print-friendly materials and multimedia tools see www.crd.bc.ca/teacher or contact the CRD at 250.360.3133.



Teacher Resources

- ▶ Assessment Tool: "Plant and People" performance grid template

Student Resources

- ▶ Activity Sheet: "How Animals Plants and People Use Water"
- ▶ Assessment Tool: Self/Peer Performance grid template
- ▶ Water Portfolio

Lesson Resources

- ▶ Images of animals using water www.crd.bc.ca/teacher
- ▶ Tape or sticky tack
- ▶ Poster markers
- ▶ Poster paper (or space on board to post images)
- ▶ Optional- computer and projector

Procedure

Warm-Up Activity

Allow students three minutes to write or draw as many water users as they can think of on the back of their handout. Have students share words with the class. For added scanning and reading- have students cross off any words that they have in common with classmates. Which were the least common answers? Can the answers be categorized plants, animals, people, living things?

Gallery Walk

1. Set up the gallery walk.
2. As a class examine an image to demonstrate activity requirements, then have students work in groups to examine the images in the gallery walk that depict animals, plants and humans using water.
3. At each station, have students record what they see on the sheet of paper provided. For added focus, define types of information or words to be written above, below and to each side of the images- e.g. words that "describe", words that are "things", and "action" words. These notes can be used to write sentences to summarize how animals use water, or to compare how plants and people use water.
4. Encourage subsequent groups to build on the previous groups' comments.
5. Once rotation is complete, review the comments aloud. Have students underline the words or sentences related to "how water is used". Can they be organized it into categories?

Discussion – Survival

1. Review the gallery walk categories as a class.
2. Lead a discussion to identify and reason which water uses are necessary for survival, e.g.:
 - **Drinking** - Plants, humans and most animals need fresh water (some salt water animals and plants do not need fresh water such as ocean fish and seaweed)
 - **Eating** - Animals can sometimes get all the water they need for several days just from the foods they eat. Herbivores eat grass and other juicy plants for water. Carnivores can get water from the blood of the prey they eat.
 - **Breathing** - aquatic animals such as fish use water in a special way: they use it to breathe. They have special lungs called gills that let them breathe oxygen right from the water they swim in.

“How Animals, Plants and People Use Water”

1. Present prepared criteria or set up criteria as a class (electronic, projected or copied onto the board)
 - What information should be included? (e.g. Animal’s name, how it uses water, something that surprised you, one thing we can do to help keep the water clean)
 - Which standards of language should be checked? BC Ministry of Education Writing Standards- “Writing to Communicate Information” page 53
www.bced.gov.bc.ca/perf_stands/writing_g2.pdf
 - Other - image to support information
2. Demonstrate how to complete the student handout, “How Animals, Plants and People Use Water”. Possible methods include referencing gallery walk notes, examining a new image, using pre-knowledge.
3. Distribute the student activity sheet, “How Animals, Plants and People Use Water” and remind students to refer to the established performance criteria.

Assessment Opportunity

Have students complete the performance grid as a self, or peer assessment. Students may add the completed activity sheet to their Water Portfolio. Use the assessment tool, “How Is Water Used?” to record student achievement.

Curricular Competencies

Observe students as they complete the tasks, looking for evidence that they are able to:

English Language Arts

- ▶ Comprehend and connect (reading, listening, viewing)
 - Use sources of information and prior knowledge to make meaning
 - Use developmentally appropriate reading, listening and viewing strategies to make meaning
 - Engage actively as listeners, viewers, and readers, as appropriate, to develop understanding of self, identity, and community
 - use personal experience and knowledge to connect to stories and other texts to make meaning
- ▶ Create and communicate (writing, speaking, representing)
 - Exchange ideas and perspectives to build shared understanding

Science

- ▶ Questioning and predicting
 - Observe objects and events in familiar context
- ▶ Planning and conducting
 - make and record observations
- ▶ Processing and Analyzing
 - Identify simple patterns and connections
- ▶ Evaluating
 - Compare observations with those of others
 - Consider some environmental consequences of their actions
- ▶ Communicating
 - Communicate observations and ideas using oral or written language, drawing, or role-play

Curricular Integration

Science: discuss juvenile vs. adult adaptations and life cycles using animals that lay eggs in water but adults are more terrestrial (frogs, salamanders, mosquitoes, dragonflies etc.)

Drama: Could have students express the ideas and feelings of an animal while in character.

Extensions and Adaptations

- ▶ As an alternative to the gallery walk approach, have students find pictures (from books, magazines, the Internet, etc.) of animals using water, then share them in small groups or as a class.
- ▶ **Water and life cycles** - include photographs of animals using water at different points in their life cycles (frogs, salamanders, mosquitos, dragonflies - lay eggs in water, juveniles live in water, adults are more terrestrial; turtles - adults live in water but lay eggs on land; marine mammals - give birth and live entirely in water)
- ▶ **Living with little water** - Extend the lesson by providing opportunities for students to learn more about some of the animals and plants that have adapted to living in habitats with very little water (e.g., camel, elephant, cactus, succulents).
- ▶ **Scavenger Hunt** - Go for a walk around the community or to a local park/stream. Have students look for signs of how wildlife, people and plants use water (drinking, playing, cleaning, shelter). Refer to “Who Uses Water and How” for scavenger hunt ideas. Use the “Scavenger Hunt” handout.

Field Trips and programs

- ▶ **CRD Parks Nature Program** - register your class for a program
<https://www.crd.bc.ca/education/school-programs/for-k12-teachers/field-trips/park-interpretive-programs>
- ▶ **CRD Parks Event** - Participate or encourage your students’ families to participate (free of charge)
<https://www.crd.bc.ca/parks-recreation-culture/parks-trails/crd-regional-parks/events>
- ▶ **The Eco Learning Hive** - local organizations offering environmental education and programs and field trips
www.ecolearninghive.org/eco-programs

Watershed Protection

- ▶ Meet Ollie the Otter, our local Watershed Warden who will take you on a learning adventure right in the middle of a watershed! Take students to the computer lab to explore the online watershed adventure (or in class, explore as a group).
<https://www.crd.bc.ca/education/school-programs/for-k12-teachers/educator-guides-resources/watersheds>
- ▶ Print and distribute the related watershed coloring poster and activity sheet.
<https://www.crd.bc.ca/education/school-programs/for-k12-teachers/educator-guides-resources/watersheds>
- ▶ For other watershed protection ideas, visit:
<https://www.crd.bc.ca/education/our-environment/watersheds/integrated-watershed-management>



Who Uses Water and How

a. Animals use water:

- i. for drinking
- ii. for food (e.g. a bear catches fish from river, ducks eat plants from a pond)
- iii. to keep clean (e.g. mammals take mud baths. Shaking the mud off removes insects and dead skin.)
- iv. for a home (e.g., fish)
- v. to cool off from the heat
- vi. for transportation (e.g. to swim)
- vii. for reproduction (e.g. frogs, salamanders, insects lay eggs in water)
- viii. for safety (e.g. beavers build their lodges on water for protection)

b. Plants use water:

- i. for food. Water is essential in creating sugar to feed the plant (photosynthesis)
- ii. for transporting, within the plant - sugars and minerals absorbed from the soil
- iii. for support. Water plumps up the plant, giving it structure.
- iv. for growth and reproduction (fruit, seeds, flowers, roots)
- v. to store energy. Water transports sugars to be stored (in bulbs or tubers).
- vi. to keep cool. (transpiration) Water vapour evaporates through holes in plant leaves. Also creates tension which allows water to flow up into the plant against gravity.

c. Humans use water:

- i. for drinking
- ii. for food (growing plants and keeping livestock)
- iii. for cooking and preparing food
- iv. for shelter
- v. for cleaning
- vi. to keep cool
- vii. for transportation
- viii. for energy
- ix. for relaxation and fun (e.g. swimming, boating)
- x. for ceremonies (e.g. baptism, therapy)
- xi. to make things



How Animals, Plants and People Use Water

Name: _____ Date: _____

Select one animal you have learned about.
Draw how this animal uses water.

***All living things
need water to survive.***

This is a picture of

_____ ***using water.***
(name of animal, plant, person)

Name: _____

Date: _____



How Animals, Plants and People Use Water

Name: _____ Date: _____

Select one animal you have learned about.
Write about how this animal uses water.

***All living things
need water to survive.***

***One way _____
(name of animal, plant, person)
uses water is....***

Name: _____

Date: _____



Performance Grid: _____

Name: _____ Date: _____

CRITERIA	I am working on this	I show this in my work	I am good at this



CRITERIA	I am working on this	I show this in my work	I am good at this

Performance Grid: _____

Name: _____ Date: _____

CRITERIA	I show this in my work when...



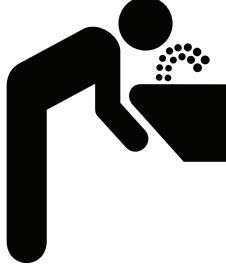
CRITERIA	I show this in my work when...



Water Use Scavenger Hunt

Name: _____ Date: _____

1. Who uses water in our community?




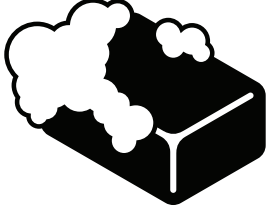


	
<p>My neighbour _____ (who)</p> <p>uses water _____ to drink _____ (to/for)</p>	<p>_____ (who)</p> <p>uses water _____ (to/for)</p>
<p>_____ (who)</p> <p>uses water _____ (to/for)</p>	<p>_____ (who)</p> <p>uses water _____ (to/for)</p>
<p>_____ (who)</p> <p>uses water _____ (to/for)</p>	<p>_____ (who)</p> <p>uses water _____ (to/for)</p>



Water Use Scavenger Hunt

Name: _____ Date: _____

1. Who uses water in our community?

	
<p>_____</p> <p>(who) uses water to drink.</p>	<p>_____</p> <p>(who) uses water for food.</p>
	
<p>_____</p> <p>(who) uses water to play.</p>	<p>_____</p> <p>(who) uses water to clean.</p>
	
<p>_____</p> <p>(who) uses water to breathe.</p>	<p>_____</p> <p>(who) uses water for shelter.</p>