



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



45-60 minutes



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.

Lesson 7b:

Using Water – Animals

Purpose

This is the second lesson of the Using Water lessons. Students will discover facts about local animals, their lifecycles, explore different ways these animals use and rely on fresh, clean water.

Note- second activity will require extra time for research in a computer lab or library. Alternately, it may be completed with pre-knowledge.

Preparation

1. Print "Guess Who- Game Cards, Game Board" and Answer Key (1/group)
2. Print "Guess Who- My Research" (1-4/student)
3. Print "Guess Who- My Cards", "Guess Who- My Answer Key" (0.25-1/student)
4. Book time in the library or computer lab for research about local animals and water use.

Procedure



Warm up - Animals using water

1. Show one or more video clips of animals using water, such as the following.

Beavers 00:00-03:08

Learn how beavers use water for transportation, refrigeration and more...

Animal Planet TV

www.youtube.com/watch?v=Na2HYq11yuM

Note: Beavers can be an issue for water quality in a drinking-water watershed. However, this video demonstrates the many possible uses of fresh water by animals.

Teacher Resources

- ▶ Assessment Tool: "What Can I Do?: Keeping Water Clean and Safe"

Student Resources

- ▶ Handout and Self- Assessment Tool: "Guess Who- My Research and Criteria"
- ▶ Handout: "Guess Who- My Cards"
- ▶ Water Portfolio

Lesson Resources

- ▶ "Guess Who" (one/group) cut into game cards
- ▶ Optional computer, projector and internet

River Otters 00:00- 02:02

Learn how North American river otters play, hunt and hold their breath in water.

The Wild Centre

www.youtube.com/watch?v=0jyyfIT_bI4

Bears 00:00- 01:26

See bears use a river to catch salmon.

BBC

www.youtube.com/watch?v=0Ncj_63z-mA

Raccoons 01:40- 02:12

Watch a raccoon wet its paws before eating. Studies suggest raccoons wet their paws and food to create a stronger tactile sense of what they are about to eat.

Lewis C. Wilson

www.youtube.com/watch?v=R0hnqsuch-c

Note- remind class that they should not feed wildlife, as depicted in this video.

Penguins, Pigs and more 00:00 – 01:18

See how animals at the London Zoo cool down on a hot day.

London Zoo

www.youtube.com/watch?v=CqXh2FVAIqk

Red-legged frog eggs 01:50 – 2:40

How do red-legged frogs use water? See what a dedicated group of people are doing to help.

Golden Gate National Park Conservancy

www.youtube.com/watch?v=9ohavg0HNIU

2. Ask students all the ways they saw animals using water.



Mix and Match- How animals use fresh water

1. Have students form groups of 4 players
2. Explain that students will receive cards with details about different local animals, their home, their food, their status and how they use water. Using their powers of deduction they will match the cards to the animal they describe.
3. Give each group a set of game cards.
4. Have students divide cards evenly.
5. Each student reads their card(s) and works with the group to match it to the animal.
6. Post or distribute the answer key.

Discussion

Ask students if any answers surprised them? What clues helped? What threatens these animals? What can we do to keep fresh water clean? (see teacher resource “What Can I Do”) (Note: Often humans impact shelter and fresh water quality through development and pollution.)

My Mix and Match

1. Distribute the “Guess Who - My Research” handout.
2. Take students to the library or computer lab for research or have them complete the handout with previously studied information.
3. Set up “My Research Performance Grid Criteria” and have students complete the worksheet with research or known information.



Assessment Opportunity

Collect the “My Research” sheets and review for accuracy and demonstrated learning outcomes.

Have students correct any mistakes and use to complete “Guess Who - My Cards” and handout. First photocopy each sheet to be an answer key. Then have students cut out the cards.

Note: These cards can be used to play the game again with classmates or at home.



Curricular Competencies

Look for evidence that students are able to:

Science

- ▶ Questioning and predicting
 - Observe objects and events in familiar context
 - Ask questions about familiar objects and events
 - Make simple predictions about familiar objects and events
- ▶ 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



Extensions and Adaptations

- ▶ Modify difficulty and demonstrated skills and strategies through manipulation of the game cards and board (e.g. number of animals to research, type information to research, and method of representation) and through performance criteria.
- ▶ 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>
 - **Eco Learning Hive**- local organizations offering environmental programs ecolearninghive.org/



Guess Who

www.crd.bc.ca/education/our-environment/wildlife-plants

<i>Red-Legged Frog</i>	<i>Painted Turtle</i>	<i>River Otter</i>	<i>Pacific Salmon</i>
<p>🏠 My Home I live near ponds or streams in cool wet forests. My family can be found hopping anywhere from the Fraser Valley and Vancouver Island in BC to California in the USA.</p>	<p>🏠 My Home I am native to BC, but humans brought me to Vancouver Island. I live in ponds, streams and ditches with muddy bottoms.</p>	<p>🏠 My Home I live in dens next to rivers, streams, ponds, lakes or beaches.</p>	<p>🏠 My Home Most of my life is spent in the salty sea, but some of my life is in fresh water.</p>
<p>🔄 My Lifecycle I lay my eggs in a shallow pond or stream. We are tadpoles first then I grow into 7-10 cm long frogs.</p>	<p>🔄 My Lifecycle You can see me in Esquimalt. I lay my eggs in a shallow hole in the ground near ponds, streams and ditches. I can live 20 to 30 years.</p>	<p>🔄 My Lifecycle I am born underground in a den. When I am young I am called a kit. I will live up to 12 years old.</p>	<p>🔄 My Lifecycle I am born in fresh water, but spend my adult life in the salty sea. When it is time to breed, I return to fresh water.</p>
<p>🍷 My Food As a tadpole, I eat algae. When I am grown up, I eat insects.</p>	<p>🍷 My Food I eat small animals, like crayfish, and water plants.</p>	<p>🍷 My Food I eat fish, shellfish, birds and small mammals. I catch food by feeling it with my whiskers.</p>	<p>🍷 My Food I eat plankton (tiny shellfish and fish worms) as I swim through the salty sea.</p>
<p>! My Status Oh oh, there are less of us frogs. Humans changed the areas where we live by cutting down trees and built farms and cities where we live. Now, I am protected in BC.</p>	<p>! My Status I am protected in BC because there are not many of us left. My shell doesn't protect me from cars running over me or from humans taking me home to be a pet.</p>	<p>✓ My Status Great. There are lots of us running and swimming around rivers, streams, ponds, lakes and beaches in Canada.</p>	<p>✓ My Status OK, but in some parts of the Pacific Ocean there are less of us. Plants help keep the fresh water clean and cool, but humans replaced the plants with buildings and roads.</p>
<p>💧 My Water Use I use water to stay cool, keep my red legs and skin wet, and to keep my eggs safe.</p>	<p>💧 My Water Use I use water to help me swallow my food, to keep me safe and to hibernate in my shell.</p>	<p>💧 My Water Use I use water to hunt food and for transportation like when I swim up and down rivers.</p>	<p>💧 My Water Use I use water to breathe through my gills, to hunt, for transportation and as my home.</p>





Guess Who - My Cards

Name: _____ Date: _____

Guess Who... <i>Make your own "Guess Who" game cards with your research information.</i>	🏠 My Home
🔄 My Lifecycle	🍌 My Food
! My Status	💧 My Water Use



Guess Who - My Research

Name: _____ Date: _____

Write 1-2 sentences for each point below about an animal you know, researched or learned about in class.

My Lifecycle

My Home

My Food

My Water Use

My Status

How can you help keep water clean and safe for these animals?

CRITERIA	I show this in my work



What Can I Do? Keeping Water Clean and Safe

All living things need water to survive. Help protect local animals in the following ways:

- ▶ Protect plants near waterways. They help keep the water clean (prevent erosion) and the temperature cool. They provide nutrients to animals and other plants too.
- ▶ When in parks and natural areas
 - keep dogs on leashes
 - walk on paths
 - watch wildlife from a distance
 - be careful where you step
 - leave animals in their natural habitats
- ▶ Don't let garbage go down the drain. Anything that goes down an indoor drain can end up in the ocean (sanitary sewer) or our groundwater (septic system). Anything that goes down an outdoor drain (storm drain) can end up in our streams, creeks and ocean.
- ▶ Recycle, compost and use garbage bins.
- ▶ Make homemade cleaners.
https://www.crd.bc.ca/docs/default-source/source-control-pdf/2017recipe-card_forweb.pdf?sfvrsn=669d0aca_2
- ▶ Coordinate a community clean up.
<https://www.crd.bc.ca/service/community-clean-up-assistance-program>
- ▶ Adopt a stream
- ▶ Be curious. Learn from others.
- ▶ Learn more about these and other local animals.
- ▶ Ask friends and family about their water wise habits.
- ▶ Spread the word. Let your friends and family know what you are doing to help. They can learn from your good habits.