

Watershed CPR

Connect. Protect. Restore.

Additional Resource Guide

Watershed CPR Education Program | **Salmon Fry**



Rivershed
Society of BC

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Watershed CPR Education: Additional Resources Guide | Salmon Fry

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Nature Journaling

Observing, recording, and reflecting



Photo: Leo Hoho (Upsplash)

Nature journaling will help budding Watershed Defenders notice what is happening in their local watershed, and appreciate all it has to offer.

Activity Description

Nature journaling encourages students to pay closer attention to the surrounding environment, and fosters creativity, personal connections and mindfulness. Being more aware of what the environment is like and how it is changing is an important part of connecting with the local watershed, as well as inspiring ways to protect it.

For this activity, students will need:

- Blank notebook (unlined)
- Pencil, eraser, crayons

As a fairly open-ended activity, nature journaling can be incorporated into your class's daily or weekly routine. It can be helpful to have a designated time every day or week to go outside and experience nature. The process of nature journaling is simple – students can choose what they record, and how they record it. Some students may want to draw or paint what they see; others may want to write down what they see and feel. Whatever route they choose, encourage students to pay attention to their senses (*what do you see/smell/hear/feel/notice?*), make personal connections (*what does this remind you of?*), and ask questions (*what does this make you wonder?*). Whenever possible, provide find the answers to students' questions after returning to the classroom. For questions without a clear, immediate answer, use this as an opportunity to practice research skills and talk about how science is an ever-evolving field with new questions posed and answers uncovered each day!



Connections to Watershed CPR

Connect

Students are encouraged to go out, explore, and take notice of their local watershed.

Nature Journaling

Dive Deeper

Prompts for your classroom's Nature Journaling experience:

- Use a crayon or coloured pencil, make a leaf or tree rubbing. Remind students to 'Leave No Trace' - only use leaves that you find on the ground, and after you do the leaf rubbing, put the leaf back where you found it).
- Create measurements or charts (e.g. how tall is this plant? How much does it grow each day? How many bugs can you find under this log each day?).
- Look for [visual patterns](#) and draw them. Remember, patterns have a part that is repeated!
- Write poetry inspired by nature.
- List or draw birds, insects, leaves, or flowers observed. If students don't know the name of the creature or plant they are observing, they can draw or write a detailed description and research what it is.
- Sit in the same spot at least once during each season. Record what stayed the same, and what changed.
- Observe and document plant growth over time.
- Record animal tracks – ask questions like: where are they going?; Who do they belong to?
- Record the seasons of a tree – photograph or draw a tree once each season to observe how it changes.
- Close looking – use a magnifying glass, and take a closer look at something – a log, a flower, a seed – and write or draw a detailed description.
- Be a detective – is there anything that looks like it doesn't belong? Draw it and record your thoughts. What do you think it is? How do you think it got there?

BC Curriculum Connections

Grades 1-2 Science

Observe objects and events in familiar contexts

Make and record observations

Experience and interpret the local environment

Identify simple patterns and connections

Grade 3 Science

Observe objects and events in familiar contexts

Make observations about living and non-living things in the local environment

Experience and interpret the local environment

Grades 1-3 Art

Experience, document and share creative works in a variety of ways

Canadian Geography Learning Framework Connections

Interpret and analyze, reflect and respond, scale

Exploring Perspectives

Community Connections to the Fraser

Students conduct an interview with an older family member or member of their community to gain a different perspective on the environment and learn how the natural world has changed over time.

Activity Description

Talking to people older than you can be a great way to see things in new ways. It can also help you understand how parts of the world, like nature and the environment, have changed over time.

Set up a time to talk with an older member of your family or community, such as a grandparent, aunt, uncle, or neighbor, and interview them about their experiences with nature using the questions below. You can always add in your own questions, as well!

Use the Exploring Perspectives interview question worksheets on the following two pages to guide conversations.

Dive Deeper

Questions for classroom discussion, following interviews:

- What answer surprised you the most during your interview?
- Do you and the person you interviewed share any memories or ideas about nature? Are there any things they said that are very different from what you think?
- Have you noticed any changes to the environment near you?
- How do you think the Fraser River and Watershed will change in the next 50 years of your life?



Connections to Watershed CPR

Connect

Students gain a better understanding of their watershed through the personal reflections of their interviewee.

BC Curriculum Connections

Grades 2 Science:

Demonstrate curiosity and sense of wonder about the world

Experience and interpret the local environment

Express and reflect on personal experiences of place

Grade 2 Social Studies

Relationships between people and the environment in different communities

Canadian Geography Learning Framework Connections

Communicate, perspectives, patterns and trends

Exploring Perspectives

Interviewer Name: _____

Date: _____

Interviewee Name: _____

How long have you lived in the Fraser Watershed?

When you were my age, what did you like about nature?

What is your favorite memory about spending time outside?

When you were younger, what did you like to do outside? Do you still like to do those things today, or are there new things you like to do?

What do you think about when you think of the Fraser River?

Exploring Perspectives

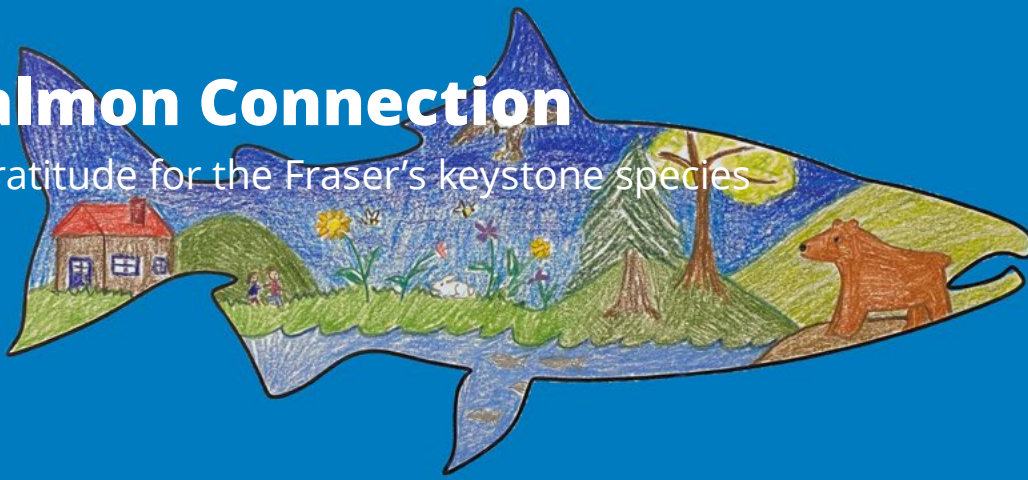
How has the environment changed during your life?

Do you think the Fraser River is important? Why or why not?

What do you think needs to happen to create a healthier environment?

The Salmon Connection

Showing gratitude for the Fraser's keystone species



In this activity, students will share their knowledge of salmon's role in an ecosystem through art.

Activity Description

Without salmon, the Fraser Watershed would look very different from the way it is now. There might be fewer types of plants and animals living in the area. Our lives would be different too, because not only would we not have delicious salmon to eat, we also wouldn't be able to enjoy all that the beauty that the Fraser River has to offer.

As Watershed Defenders, your class knows why salmon are important – but others may not! Through this activity, students will create a school of salmon to tell others why salmon are so important. On each salmon, students will draw things that salmon do for the Fraser Watershed and for us! This could include pictures of animals or plants that are connected with salmon, or what an environment looks like when salmon populations are healthy.

For this activity, students will need:

- Salmon template. (<https://patternuniverse.com/files/downloads/salmon-pattern.pdf>)
- Drawing materials, such as pencils, pencil crayons, pastels, felt markers, crayons, etc.
- Fine marker for outlining.

Use a pencil to plan out what you'd like to draw inside and outline your drawings with a fine liner. Then, colour in your pictures, and cut out your salmon.

After students have created their salmon, encourage them to share their artwork with the class. If space permits, hang up this new school of salmon artwork on a bulletin board or wall within the classroom.



Connections to Watershed CPR

Connect

Students will share with others what they learned about salmon's role in the ecosystem.

The Salmon Connection

Dive Deeper

Questions for discussion, before or after students create their salmon:

What do you think about when you think of salmon?

Why are salmon so important in an ecosystem? (They provide food for other animals such as bears, other fish, otters, etc; They help trees to grow; they provide us with food!)

What do you think would happen if salmon disappeared?

BC Curriculum Connections

Grades 1-3 Art

Connect knowledge and skills from other areas of learning in planning, creating, and interpreting works for art

Express feelings, ideas, stories, observations, and experiences through creative works

Canadian Geography Learning Framework Connections

Reflect and respond, recognize that all living things depend on healthy ecosystems, communicate

Watershed Scavenger Hunt

Where does the water go?



In this activity, students will explore the interconnectivity between different components of a watershed.

It is recommended to do this activity while it is drizzling/raining outside, or just after it has rained and the ground is still wet.

Activity Description

For this activity, students will need:

- Scavenger hunt chart (included below)
- Pencil

Begin this activity by reviewing student knowledge about watersheds. Ask students to think back to the Watershed CPR program and reflect on what they remember about watersheds. Map responses through a 'web' brainstorm on the board.

Review: a watershed is an area of land where any drop of water that enters the environment eventually ends up in the same body of water.

It doesn't always seem like we live near a river, lake, or ocean. Does that mean we still live in a watershed? Yes! Wherever water enters the environment – like in the form of rain, or when we use a hose to wash our cars – the water that lands on the ground can eventually flow into a body of water. Every bit of land on Earth is part of a watershed.



Connections to Watershed CPR

Connect

Students will explore in depth what a watershed is and what our roles are in it.

Restore

Students will consider how our actions can positive or negatively affect our watershed.

Watershed Scavenger Hunt

Today, we are going outside to be ‘water scientists’ as we explore and examine our part of the watershed. Using the scavenger hunt chart provided, look for different things that can be found within the watershed. When you find one, draw a picture of it in the box. Recording observations is a very important part of being a scientist, so when you are drawing what you find, make sure you add lots of details, and draw exactly what you see!

When finished, share your findings with your class as a group. What are some similarities and difference in what we noticed, as water scientists? Use the “Dive Deeper” prompts below to facilitate further discussion.

There are many parts to a watershed. We have learned that every place in a watershed can affect its health – not just the places close to a river, lake, or ocean. When water runs off of impervious surfaces, it can carry pollutants and garbage down into our storm drains, and into our lakes, rivers, and oceans. That is why it’s so important to take care of our watersheds and be a Friend to the Fraser, no matter where we live!

Dive Deeper

What did you notice about water that landed on an impervious surface, like the sidewalk or the parking lot? (Water stays on the ground; does not get absorbed; forms puddles; flows away.)

What did you notice about water that landed on a pervious surface, such as the grassy areas or plant beds? (Water is absorbed into the ground; the plants ‘drink up’ the water; water goes into the dirt.)

What did you notice happens around drains? (Water that isn’t absorbed into the ground flows into the drains.) Did you notice anything other than water going into the drains? (E.g. leaves, garbage, debris, pollutants.)

Pervious surfaces, where water can be absorbed into the ground, help to filter and catch things like garbage and pollutants. By absorbing water, pervious surfaces also help to store water, keep the area cooler, and reduce chances of flooding and erosion!

How do you think people are affecting the watershed? (Changing habitat and introducing new things into the ecosystem like litter, but also helping to heal and protect the watershed.)

BC Curriculum Connections

Grades 1-2 Science

Observe objects and events in familiar contexts

Make and record observations

Experience and interpret the local environment

Identify simple patterns and connections

Grade 3 Science

Observe objects and events in familiar contexts

Make observations about living and non-living things in the local environment

Experience and interpret the local environment

Canadian Geography Learning Framework Connections

Observe, collect data, reflect and respond, interrelationships

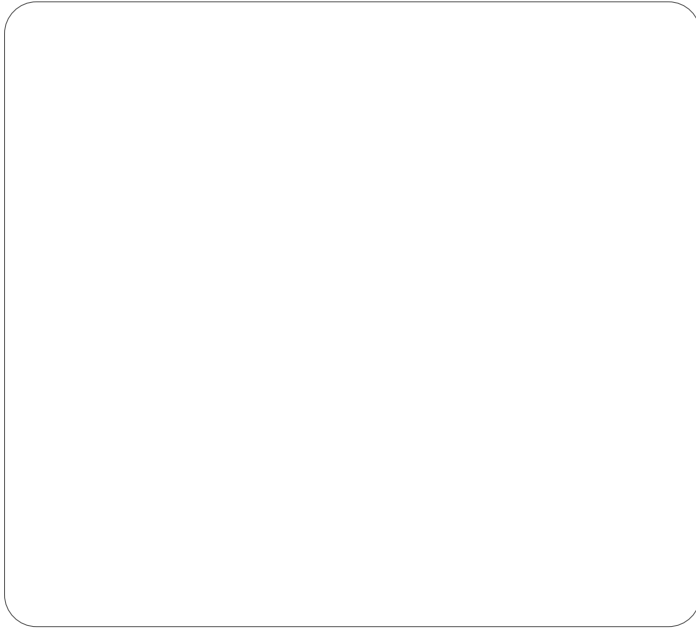
Watershed Scavenger Hunt

Name: _____

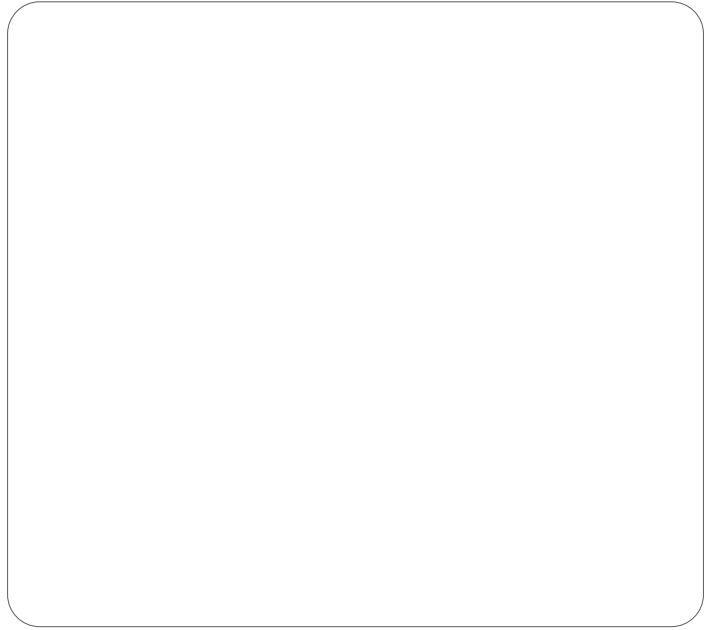
Date: _____

Find and draw...

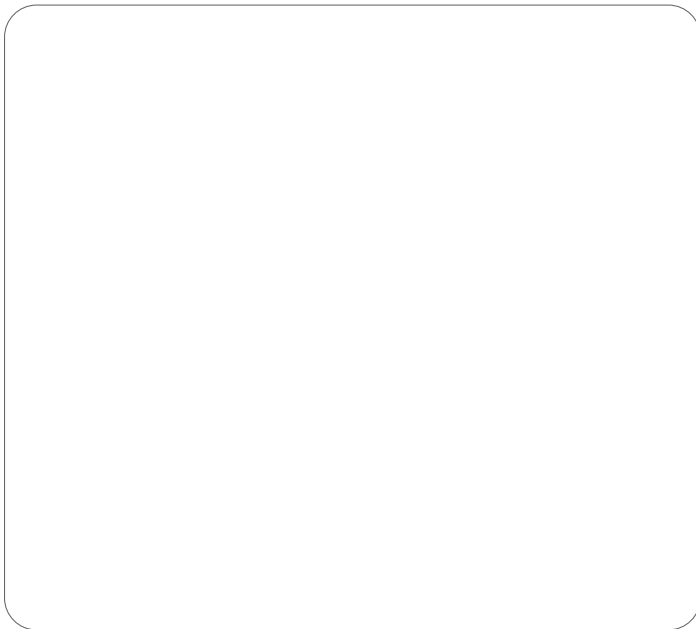
A storm drain



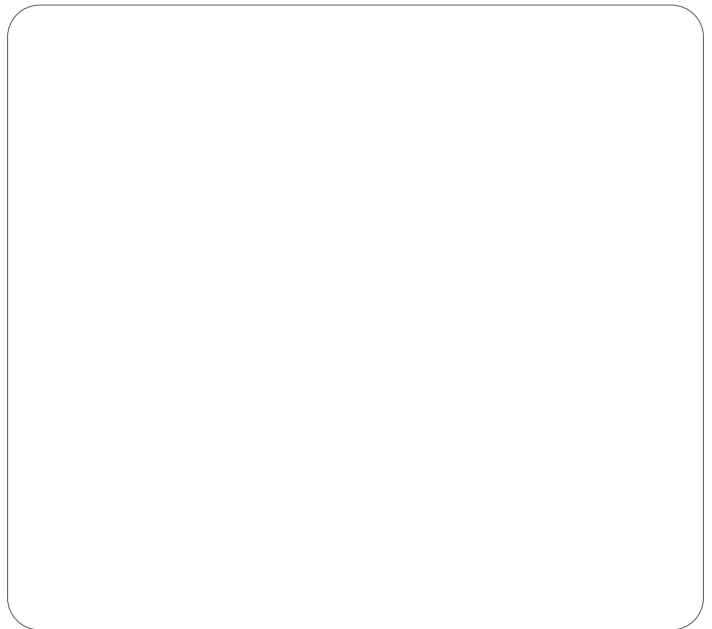
Somewhere where water is flowing



A pervious surface (somewhere where water is absorbed or passed through)



An impervious surface (somewhere where water runs off, or is not passed through)



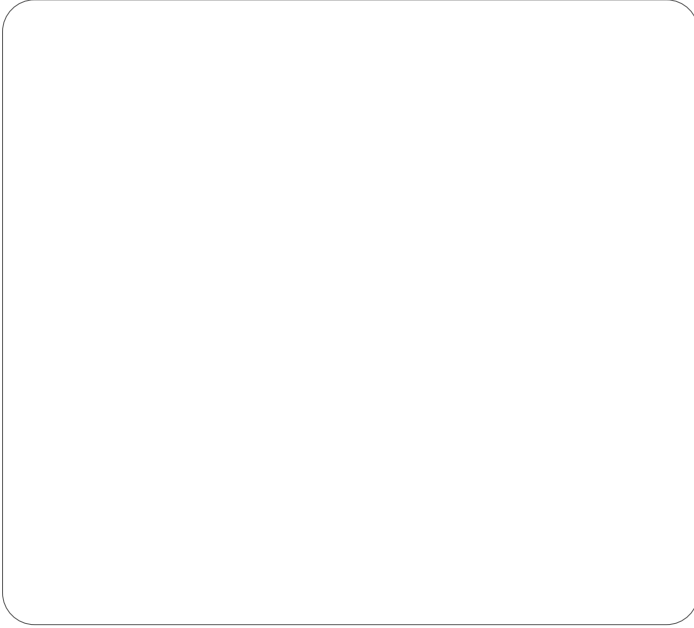
Watershed Scavenger Hunt

Name: _____

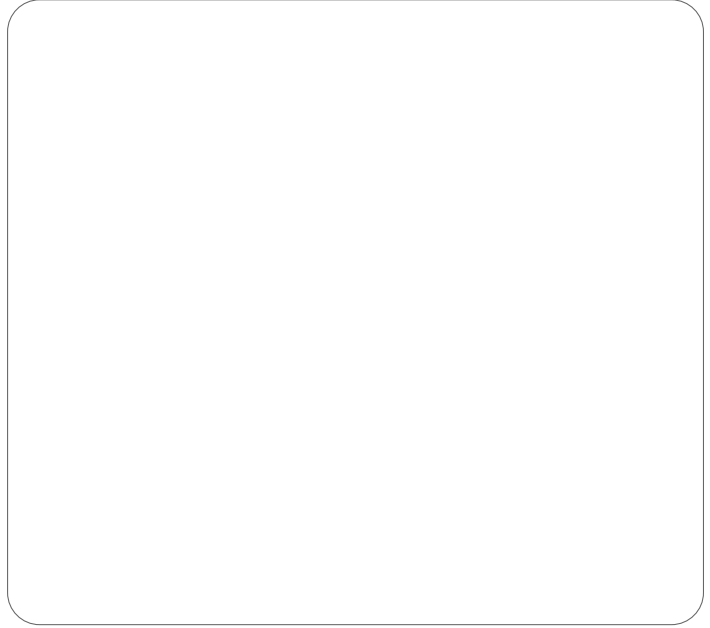
Date: _____

Find and draw...

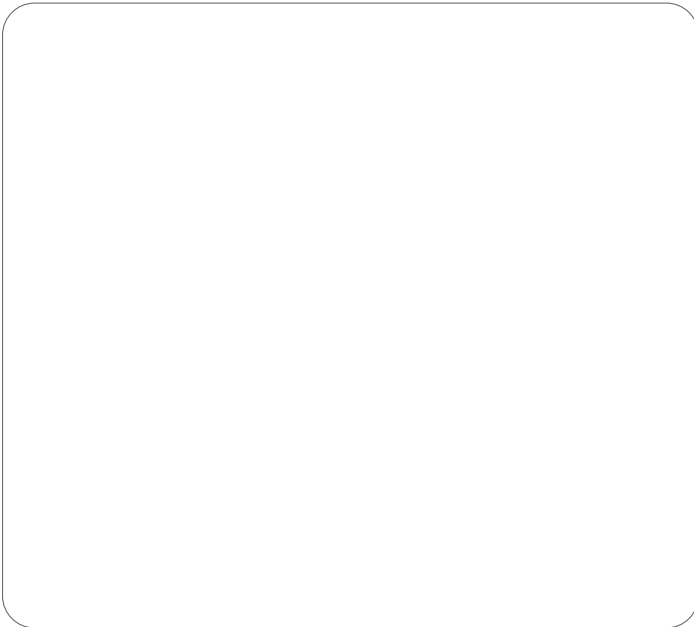
Something that might harm the watershed



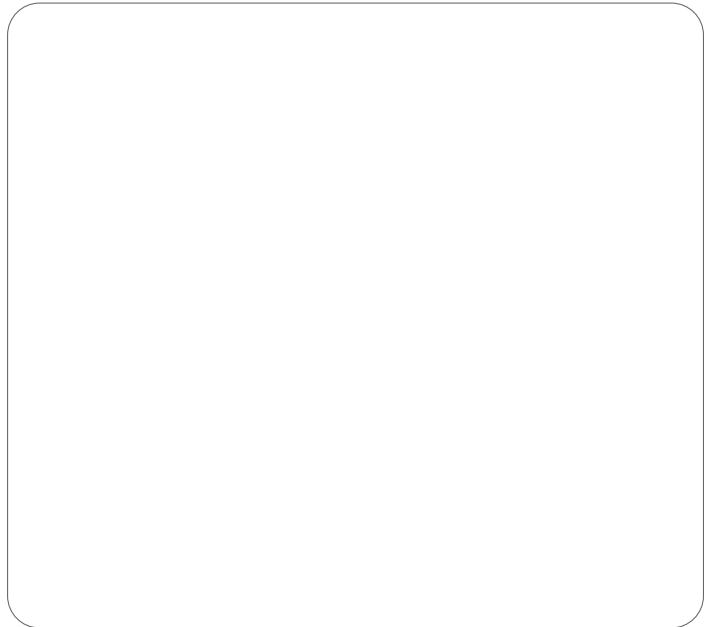
A plant living in the watershed



An animal living in the watershed



Evidence of people living in the watershed



DIY Reusable Tote Bags

A fun upcycling craft that can help our watershed!

Photo: Kirstin Hill

This activity provides an easy way for students “upcycle” an old t-shirt, transforming it into a new, reusable tote bag.

Activity Description

Reducing waste is something we can all do to help the Fraser Watershed! In this activity, students will transform a t-shirt into a reusable tote bag, using only a pair of scissors and knots.

Note: adult supervision is recommended, when handling scissors

For this activity, students will need:

- Pair of sharp scissors
- Old t-shirt

Begin by laying the t-shirt on a flat surface and cut off the sleeves.

Cut the neckline of the t-shirt so it makes a U. The thickness of the fabric remaining on the shoulders will be the thickness of your handles. A good rule of thumb is to make sure your handles are at least as wide as your hand.

Create “fringe” by cutting 6-8 cm long slits on the bottom of your shirt. The slits should be about 4 cm apart. For best results, make sure the front and back layers are cut at the same time.

Decide if you want your bag to have fringe on the outside. If yes, continue to the next step. If not, flip your t-shirt inside out and then continue to the next step.

Tie each front and back fringe pieces together using a square knot. To do this, start with your first pair of fringe and cross right over left, then knot together. Then, cross left over right and knot together. Continue this process until all pieces of fringe are knotted together and your bag is complete!



Connections to Watershed CPR

Restore

Learn how to reuse old materials and reduce waste to help the Fraser.

DIY Reusable Tote Bags

Dive Deeper

This craft shows us how we can “upcycle” something old into something new and useful. What are some other examples of ways we can repurpose or reuse items to reduce waste?

Why do you think it’s important for us to find ways to reuse items before we recycle them or throw them away?

How can you use your new tote bag to be a better Watershed Defender?

BC Curriculum Connections

Grade 2 Social Studies

Responsibility to the environment; cause and consequence of decisions/events

Grade 2 Science

Consider some environmental consequences of actions

Canadian Geography Learning Framework Connections

Act creatively to determine more sustainable ways of living, communicate, reflect and respond

UP and Over!

Exploring innovative solutions to migration challenges



Photo: Fish ladder and train tunnel. Hell's Gate, Fraser Canyon, BC. [Click](#)

In this activity, students will use their creative thinking and problem-solving skills to help migrating salmon reach their destinations.



Activity Description

For this activity, some suggested materials* are:

- Paper towel rolls
- Construction paper
- Pipe cleaners
- Glue/Scissors
- Plasticine
- Toothpicks

*For this activity, students can use any materials they have on hand – a good place to look is the recycling bin. A paper towel roll could be used as a tube to transport salmon, a juice box could be turned into a holding tank – the possibilities are endless!

Discussion prompt:

What are some obstacles that salmon may have to overcome when they are migrating back to their natal streams? (e.g. small waterfalls, rapids, fallen trees, man-made obstacles).

Sometimes, salmon come across man-made obstacles that are very difficult to get across. For example, [dams](#) are built to block off sections of a river to create reservoirs. This creates a huge obstacle that not even athletic salmon can jump over! But, scientists have come up with some pretty creative solutions to help them.

Connections to Watershed CPR

Protect and Restore

Students will consider what is needed to protect salmon populations, and think about creative solutions to environmental issues.

UP and Over!

For example, in the Watershed CPR program you learned about a [fish ladder](#), which helped salmon get across a rockslide. A company called Whooshh Innovations also came up with a creative solution. They engineered a 'salmon cannon' to propel salmon over a hydroelectric dam that was blocking their migration path! Click [here](#) to watch a video of the salmon cannon in action.

Now, it's your turn! Pretend you are a group of engineers, and you are responsible for coming up with your own version of the salmon cannon to help migrating salmon get past a newly built dam. Using your imagination and the materials provided, build a structure or a machine that will help these salmon reach their natal streams. Be creative!

When you're finished, share your creation with your class, a friend, parent, or sibling! Explain how it helps salmon in their migration journey!

Dive Deeper

What are some other examples of creative, "outside-the-box" solutions to problems? (E.g. trash collecting devices in harbours or rivers, like [Mr. Trashwheel](#) or solar powered paint that can be applied to any surface and act as a solar panel, generating electricity.)

Pretend you are an inventor and pick a problem that's affecting the Fraser Watershed. What invention are you going to create to solve this problem? What does it look like? What will it do?

What are some other ways we can help salmon?

BC Curriculum Connections

Grades 1-2 Science

Safely manipulate materials to test ideas and predictions

Generate and introduce new or refined ideas when problem solving

Grade 3 Science

Generate and introduce new or refined ideas when problem solving

Canadian Geography Learning Framework Connections

Communication, interpret and analyze, participate critically and act creatively to determine more sustainable ways of living

Become a Citizen Scientist with Gassy AI

Help track what's in your waters!



Students will use a photo submission tool to keep track of patterns in local waterways

Activity Description

Gassy is a photo submission tool that allows students to take part in keeping track of things like pollution, sewage spills, how many people are using the water, what kind of animals are present, and more. Simply take a photo, submit it online, and feed Gassy!

Dive Deeper

Map students' findings. These can also be colour-coded (e.g. pollution, wildlife, people) to give students a visual of where things are most commonly found.

Discussion prompts:

- How do you think trash items got in the water? (Hint: it's not always littering!)
- How can we prevent more garbage from entering the waterway?
- Notice areas where there is more wildlife. What makes these areas more attractive for wildlife?

Full Resource

The Gassy AI tool was created by Swim, Drink, Fish. You can learn more about their work and research at swimdrinkfish.ca.



Connections to Watershed CPR

Connect

This web-based application encourages students to go out, explore, and take notice of their local watershed.

BC Curriculum Connections

Grades 1-3 Science:

Observe objects and events in familiar contexts

Experience and interpret the local environment

Canadian Geography Learning Framework Connections

Geospatial framework, responsible stewardship, ask geographic questions

Watersheds: How do they work?

Use everyday materials to build a working watershed model



Where does the water go when it rains? Students will participate in building a model of a landscape, and explore how the shape of the land affects how water droplets flow.

Activity Description

The [full lesson plan](#), created by PBS Kids: Plum Landing, includes complete instructions on how to build a watershed model, as well as follow-up questions and activities.

Discussion prompts:

- Why is it important for everyone who lives in a watershed to take care of it?
- As Watershed Defenders, what does it look like when we take care of the Fraser Watershed?
- Go outside to a paved area – it may be a street curb, a driveway, or your school parking lot. Pour a couple buckets of water onto the paved area, and follow where the water goes. Where do you think the water goes after it goes down a drain? What is the water picking up along the way? How can we protect our watershed, right in our schools or neighbourhoods?

Full Resource

This lesson plan was created by PBS Kids: Plum Landing. You can find additional information and educator resources at: <https://pbskids.org/plumlanding/>



Connections to Watershed CPR

Connect

Through a visual, three-dimensional representation, students will examine what watersheds are, how they work, and what happens when pollutants enter the system.

BC Curriculum Connections

Grades 1-2 Science:

Make simple predictions about familiar objects and events

Make and record observations

Safely manipulate materials to test ideas and predictions

Grades 3 Science:

Make predictions based on prior knowledge

Canadian Geography Learning Framework Connections

Reflect and respond, observe

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