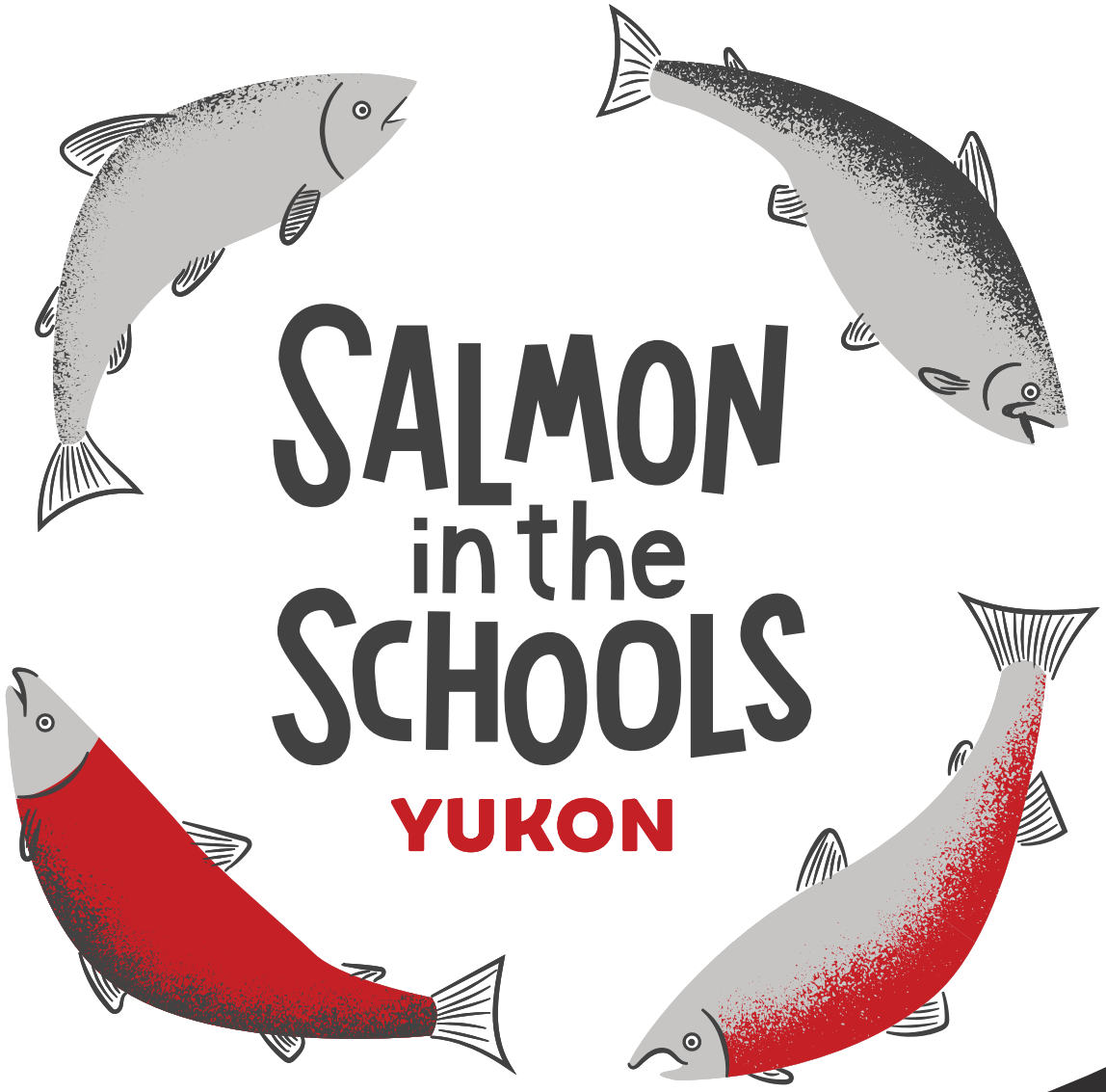


SALMON in the SCHOOLS

YUKON

Educator Activity Guide & Resource Manual

Developed in partnership:
Rivers to Ridges
Big Fish Little Fish Consultants

Funding support by:
Yukon River Panel
Pacific Salmon Foundation

ACKNOWLEDGMENTS

Emily Payne – Rivers to Ridges
Erin Nicolardi – Rivers to Ridges
Dennis Zimmermann – Big Fish Little Fish Consultants

EDITING AND CONTRIBUTION SUPPORT FROM:

Jenn Redvers
Sean Wilkinson
Yukon Department of Education
Dr. Alyce Johnson
Debbie Payne

DESIGN BY:

Logo Design and Illustration
Tedd Tucker

Layout Design
Chera Hunchuk – Bird's Eye Design

Web Design
Jen Edwards – Sprucetip Design

PARTNERS

FUNDERS

The Yukon Salmon in the Schools program supports the International Year of the Salmon (IYS) and the theme "*Salmon and People in a Changing World*".

SALMON in the SCHOOLS.com

TABLE OF CONTENTS

RATIONALE

Salmon are a crucial part of our boreal ecosystem and are inextricably connected to our lives. We need to continue deepening and rebuilding meaningful, personal connections to salmon for Yukoners. By working with young people, we have the opportunity to use stories, experiential activities, games, arts and other evocative means to communicate the message that salmon are an incredibly important part of our water and land. A focus on sensory and tactile experiences will increase connection to and retention of the material presented.

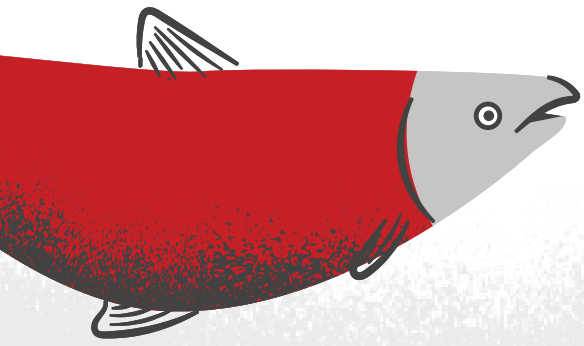
The following lessons and activities aim to foster a deep sense of understanding about how salmon relate to our lives, and to the lives of the people and organisms around them. A focus on First Nations perspectives and practices (past and present) should allow students to connect with a variety of perspectives on salmon through first-hand accounts, experiential activities and innovative projects.

The Stream to Sea project that exists in school across the Yukon gives student and teachers the opportunity to raise salmon eggs in their school and eventually release them in the spring to help with stock restoration. This curriculum may help to complement and enhance this ongoing Yukon program.

FIRST NATIONS CULTURAL GUIDELINES

These cultural guidelines and resources were collected and developed with the support of Erin (Kothetty) Pauls (Champagne and Aishihik First Nations, Tahltan First Nation) and Jennifer Redvers (Métis Dënesųłiné). Supporting local Elder and knowledge keeper participation in these educational programs should be a priority for educators.

ESSENTIAL RESOURCES



Yukon First Nations Resources for Teachers 2018/2019 Includes Elder in the Classroom Checklist + Contact List for Community Education Liaison Coordinators

First Nations Programs and Partnerships Yukon Department of Education

Pedagogy of Consequence Culturally responsive teaching for Yukon First Nation citizens

First Nations Education Steering Committee Offers teachers information and guidance about how to incorporate authentic First Peoples materials into their instruction and assessment

FIRST NATIONS CULTURAL GUIDELINES

MAJOR GUIDING PRINCIPLES

- Prioritize Yukon First Nation content (specific to the First Nation) where possible. Ask specific First Nations to use their information or reference correctly from print sources.
- Contact your local Community Education Liaison using the Essential Resource links (below).
- Contact your local First Nation office for support and guidance.
- Welcome local language teachers and Elders into the classroom, and give Elders the time they need. Ensure they know what is expected of them. Ask them what their priorities are and what specific skills or knowledge they have. Provide them with a gift (small homemade gift, a card, traditional foods, a feather, honorarium, gift cards, etc.). Consider asking a student to present the gift.
- Reorient the class or group to be sitting in a circle for opening, closing, and group discussion.
- Have local First Nation created content, posters/books/references on display. Allow participants to see themselves in the materials you are presenting.
- If there are no local traditional knowledge keepers available, reach out to students as experts. Students are a source of knowledge (and may not know that they have it). Create space for them to share their experiences with a practice you are referencing.
- Encourage the use of local language(s) by students and visitors whenever possible.
- Acknowledge local traditional and spiritual laws that impact practices around your topic of discussion.
- Ensure that local culture is infused within each module, and acknowledge cultural differences as well as similarities. Get permission to use/adapt resources designed by other First Nations.
- If you are talking about other living beings, explain that they can be seen as fellow living spiritual beings, and discuss the importance of local traditional knowledge and traditional laws.

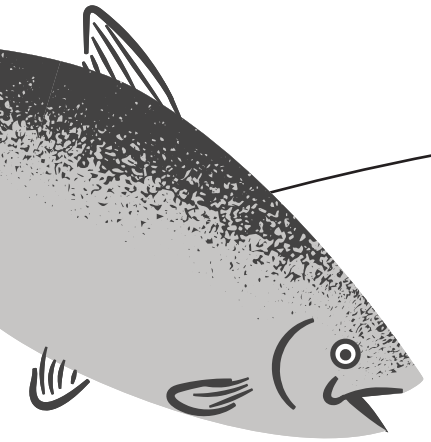
• ADDITIONAL GUIDELINES

- Ensure there is not a value judgement being placed on certain knowledge. Traditional knowledge should come across as equally important to scientific knowledge.
- Reference culture in the present tense, unless it is a practice that is not done anymore.
- Use language consistently (e.g. First Nations, First People, Indigenous, etc.).
- Be mindful of terminology such as "modern" and "traditional". Traditional doesn't mean static in the past (i.e. Using different modern harvesting technologies, doesn't mean that the practice isn't based in traditional concepts. Harvesting can adapt and be dynamic.).
- Where appropriate, acknowledge Reconciliation & Rights of Traditional Harvesting. Harvesting has been severely restricted (e.g. First Nations not being allowed to fish on their lands, and not being able to gather for ceremonies, etc.). Students should know that harvesting rights have been specifically taken away from many First Nations historically.
- When using art or resources involving animals, know or ask if there are local clans connected to those animals and what the significance is for speaking about these animals.
- Avoid stereotypes (e.g. subsistence vs. commercial).
- Avoid role-playing First Nations in games and activities.
- Include a map of First Nations Traditional Territories, map of language areas, and community maps between Alaska and Yukon. They are great to have on the wall for reference throughout the activity.

GUIDING PRINCIPLES

The following principles help to guide the direction of the following lessons.

- **STORY-TELLING** - Every fish has a story. Stories help teach life lessons and are important to share
- **STEWARDSHIP** - taking responsibility for one's actions and impacts on the land
- **YUKON FIRST NATIONS WAYS OF KNOWING AND DOING** - aligns with indigenous values and follows principles of reconciliation: within ourselves, with each other, with other species
- **HOLISTIC** - must support a big picture view or understanding
- **LEGITIMACY** - fits within the revised Yukon Department of Education (BC) approved curriculum
- **PERSONAL** - all people can have a personal connection with salmon, whether urban or rural, First Nation or non-First Nation, Alaskan or Yukoner
- **SCALABLE AND FLEXIBLE** - allows for a variety of teaching approaches in an array of ages, rural or urban, indigenous or non-indigenous audience



PEDAGOGICAL APPROACH

The following document has been designed with revised Yukon curriculum in mind. Learning targets are set for each lesson (or game) based on learning standards (curricular competencies + content), as well as accompanying assessment rubrics. While lessons are designed with one grade in mind, they may be used as an exemplar and adapted to specific grades and subject areas as needed. Possible learning standards relating to salmon within the Yukon curriculum are listed under the Learning Standards Section.

Many of the activities in the following document include hands-on experiences where the students are encouraged to use movement to facilitate learning. These activities were piloted in schools across the Yukon in 2017-2018 and the versions below have been modified based on experience and feedback.

DISCOVERING SALMON CYCLES

(GRADE 2 SCIENCE & ARTS)

BIG IDEAS

Creative expression develops our unique identity and voice (Gr. 2 Arts Education)

Living things have life cycles adapted to their environment (Gr. 2 Science)

GRADE 2 – LEARNING STANDARDS	
CONTENT	**CURRICULAR COMPETENCIES**
• **SCIENCE:** Metamorphic life cycles • **SCIENCE:** First Nations use of their knowledge of life cycles • **ART:** Dramatic forms and visual arts (animal forms)	• **SCIENCE:** Questioning & Predicting (Demonstrate curiosity about the natural world) • **SCIENCE:** Communication (Communicate observations and ideas using oral or written language, drawing or role-play) • **SCIENCE:** Communication (Express and reflect on personal experiences of place) • **ART:** Exploring & Creating (Explore personal experience, community, and culture through arts activities)
LEARNING TARGETS	
1. I am able to demonstrate curiosity about salmon and Yukon First Nations knowledge of life cycles. 2. I am able to reflect on my experience of place as it connects to aspects of the salmon life cycle. 3. I am able to explore animals and culture through dramatic forms and role-play.	

PRIOR LEARNINGS

Prior to teaching the following lessons and games, it would be helpful if the students have a had a basic overview of salmon and their life cycle stages. Some helpful resources to teaching the life cycle stages of salmon are listed below:

- Salmonoids in the Classroom Teacher's Resource Guide – Fisheries and Oceans Canada
- Pacific Salmon Life Cycle
- Salmon Life Stages

CLASS CIRCLE SHARE & FISH CAMP VIDEO

LEARNING TARGET:

I am able to demonstrate curiosity about salmon and Yukon First Nations knowledge of life cycles.

MATERIALS:

- **Tàá'an Män Salmon Culture Video prepared to show (optional)**
- **Talking piece - feather, stone etc. (optional)**

HOW TO:

Gather in a circle. Invite the students to acknowledge the traditional First Nation territory that the lesson is taking place on. Introduce Elder or language instructor if they are present, otherwise ask the class if they know of any Elders in their community or lives that are important to them, and to share if they have ever told them anything about salmon. First Nations ways of knowing and doing (e.g. fish camp, salmon ceremonies, traditional fishing practices, salmon preserving techniques, etc).

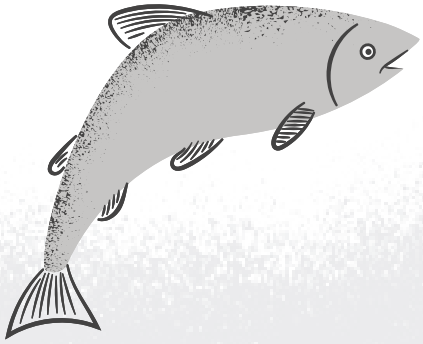
Go around the circle, passing the talking piece, and invite each student to share one thing they know already about Yukon salmon, and one question they have about Yukon salmon. Here, teachers may invite students to *'think, pair, share'* to increase the quality of the responses. Sharings may be recorded on a whiteboard, flipchart, or digitally and placed in one or more of the three categories: *people, habitat and fish.*

Encourage students to watch the video with a sense of curiosity, nforming them there will be a discussion afterwards. Show Tàá'an Män Salmon Culture Video (all or a portion of).

WRAP-UP:

Invite a class discussion with any of the following questions. (If an Elder is present, this video may not be necessary, but rather storytelling with questions.)

- **What makes the Yukon River a special place for migrating salmon?**
- **In what ways are salmon integral to our web of life?**
- **In what ways are salmon important to the Ta'an Kwäch'än people in the video?**
- **What kinds of activities did you see happening at the fish camp?**
- **How has people's relationship to salmon changed in the last 10+ years?**
- **What other questions do you wonder about?**



ASSESSMENT OPPORTUNITY:

After everyone has had a chance to share, invite the students to self-assess their sharing. E.g. On a scale of 1 to 5, how well do you feel you shared? (Raise 1-5 fingers in the air).

Invite others to add more to their answers if they would like.

What kinds of responses are being given?

What questions are being formed by the students?

ANIMAL FORMS STRETCH

HOW TO:

Invite students to find their own space around the classroom where they can move around freely. Establish clear boundaries and appropriate noise levels. Mention that every time the teacher says "3, 2, 1…", students need to quiet right down and prepare for a transition to a new creature. Lead a series of fun, dynamic stretches, taking on the form of various creatures.

LEARNING TARGET:

I am able to explore animals and culture through dramatic forms and role-play.

TEACHER SAYS:

"Begin by imagining you are an eagle, flying high above the river. Spread your wings and look down as you soar around looking for salmon."

Continue by inviting the students to take on the forms of the following creatures: worm wriggling in the soil, sea lion swimming in the ocean, common merganser bobbing on a river, bear bumbling along the river bank, dolly varden swimming in the river, bacteria breaking plant matter down, gull flying out of the nest to hunt in the estuary, etc.

WRAP-UP:

Teacher may ask any of the following questions:

- **What do all of these animals have in common? (Answer: They all eat salmon).**
- **How do they eat salmon? (Discuss bacteria vs. bears vs. other fish vs. birds).**
- **Have you ever eaten salmon? (Connection to our lives as a source of food, and also feeding back into our ecosystem).**
- **How do you think salmon are important to the web of life? (Connection to so many other creatures).**

SALMON EATER GAME

LEARNING TARGET:

I am able to communicate aspects of the salmon life cycle.

I am able to explore animals and culture through dramatic forms and role-play.

MATERIALS:

- **Flagging tape or bandanas (enough for half the group)**
- **Foam pads or hula hoops**
- **Pool noodle (optional)**
- **Long rope or cones**

SET-UP:

Place cones or rope in an open area to indicate the playing boundaries. Place hulahoops or foam pads randomly around the area.

HOW TO:

This game is best played outdoors. Students are divided into two groups (Salmon Eaters & Salmon). Salmon have a red tail (flagging tape or bandana), and they swim (run) around the stream (play area), and try to stay alive. They can be tagged while out in the stream, and are only safe in deep water zones (designated by circles of string, foam mats, or hula hoops). In a deep water zone, they may count to 5, then must continue on. They may not simply stay in these safe zones.

Salmon Eaters start out as different non-human organisms that eat salmon (students can decide what they would like to be). When they catch a salmon's tail, the salmon must sink down to the ground and decompose while counting to 10. They then get up and begin to hunt for food as a Salmon Eater. A fisherperson is eventually introduced to the game. When a fisherperson catches a salmon they only have to tag them below the knees with a pool noodle (this is because the distance from the fish is increased). That salmon must then leave the stream and go to the 'smokehouse' (any designated area within an appropriate distance). All salmon in the 'smokehouse' area must keep moving around until the leader calls out *"fry release!"*, wherein all the salmon are released back into the ecosystem to continue playing.

The fisherperson may be encouraged to catch as many fish as she can, or she may be encouraged to think about the ecosystem and other salmon eaters when harvesting. At any point in the game, the leader or a designated 'Resource Manager' can intervene by **1)** limiting the amount of salmon that can be caught within a certain period by fisherpeople, **2)** shrinking the playing zone to indicate habitat loss or **3)** taking away the deep water safe zones to show human impacts.

WRAP-UP:

Gather in a circle after the game, and explore any of the following questions:

- **What was it like to be a salmon? How did you feel?**
- **Who became both a salmon eater and a salmon throughout the game?**
- **What does this tell you about salmon life cycles?**
- **What did you notice as the habitat shrank (if it did)?**
- **How did the game change after there was a fry release?**
- **What would you change about this game (if anything)?**

WEB OF LIFE

MATERIALS:

- **Ball of yarn or string**
- **Paper**
- **Scotch tape**

LEARNING TARGET:

I am able to communicate aspects of the salmon life cycle.

HOW TO:

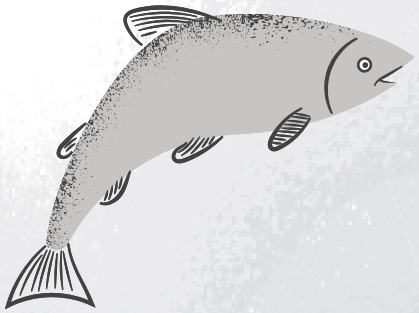
Have each student write the name of a salmon eater on a piece of paper, and a place it on their chest like a name tag. Some possible salmon eaters are: Bear, Trout, Gull, Eagle, Sea lion, Dolly Varden, Seal, Orca, Seastar, Porpoise, Bacteria, Human, etc.. You may also add in additional lifeforms like particular plants, trees, or other animals that may be indirectly connected to salmon.

One student will start with the yarn. She will carefully throw the yarn across the circle. and explain how her salmon eater is connected to the other animal or plant across the circle. Do they share the same habitat? Do they eat the same things? Do they both have similar body structure? When might a salmon encounter this salmon eater throughout its lifecycle? Each student will hold onto a piece of the yarn as it's passed (forming a web as the yarn is passed).

Pass the yarn around until everyone is holding it and connected in some way. Here, make note that we are all part of the web of life, and depend on each other for survival. We are all connected to each other and if one link is broken, it affects the whole web (demonstrate by asking one animal to let go of their link and then witness how it affects the whole web).

WRAP-UP:

You may deconstruct the web by simply placing the web down on the ground and inviting a student to collect the web carefully. Alternatively, the yarn can be passed back the way it began. With each pass back, the student must remind the class about their salmon eater's connection to salmon for their livelihood.



ASSESSMENT OPPORTUNITY:

Is every student able to make a connection?

How engaged are students in the activity?

WHAT'S YOUR SALMON STORY?

LEARNING TARGET:

I am able to reflect on my personal experience of place as it connects to salmon.

MATERIALS:

- **'What's your salmon story' worksheet**

HOW TO:

Drawing on knowledge gained through the previous activities and sharing, have the students reflect on the question **What's your Salmon Story?** In this activity, they will be drawing or writing out stories that connect to their personal or shared experience with salmon cycles.

Hand out the sheets (attached below) and ask the students to consider some of the following questions to inspire thought. Remind them to think of everything they have learned about salmon until now. You may want to write some of these questions up on the board or flipchart for reference.

- **Have you ever seen or fished for a salmon? If so, what did it look like or feel like?**
- **What do you think makes salmon a special species?**

Alternatively, rather than questions, you may want to use writing prompts such as:

- **Salmon are ...**
- **To me, salmon represent ...**
- **Salmon are important to my community because ...**

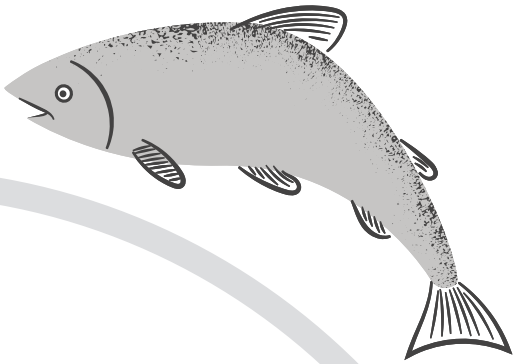
WRAP-UP:

After students have completed their posters, you may want them to present to the class or in small groups as you circulate. This will give students as additional opportunity to share accompanying stories or personal connections that may not come across in the worksheet.

ASSESSMENT OPPORTUNITY:

What sorts of images or words did the student include in their poster? Does it show a good understanding of what salmon means to them (a personal story, drawing or retelling of an event)? If presenting, do their words enhance their poster? Invite students to ask how they might improve, change or add anything else to their poster or presentation afterwards.

what's your salmon story?



NAME: _____ DATE: _____

CLASS: _____ GRADE: _____

ASSESSMENT DISCOVERING SALMON CYCLES

Formative and self-assessment opportunities are listed throughout the lessons. The rubric below can be used or adapted as necessary for summative assessment. It may be used to assess the learning targets set out above.

ASSESSMENT FRAMEWORK	1 Not yet meeting expectations	2 Approaching expectations	3 Meeting expectations	4 Exceeding expectations
I am able to demonstrate curiosity about local First Nations knowledge of life cycles	Is not aware of Elders or shows little respect; No questions are formed or little to no curiosity demonstrated	Is aware of and listens to Elders; Can partially form a question about Yukon First Nations & connection to salmon	Listens to Elders attentively and respectfully; Forms a well constructed question about Yukon First Nations & connection to salmon	Highly regards Elders' teachings; Forms multiple well-constructed questions about Yukon First Nations & salmon
I am able to communicate aspects of the salmon life cycle	Not yet able to communicate any aspects of salmon life cycle	Verbal or visual representation of partial salmon life cycle	Verbal, visual and/or oral representation of multiple stages of salmon life cycle are provided	Verbal, visual and/or oral representation of all stages of salmon life cycle with additional details or stories
I am able to reflect on my personal experience of place as it connects to salmon	May have little to no reflections on personal connection to salmon & place	Some evidence of personal reflection on connection to salmon & place	Verbal, visual or oral reflection is provided considerable reflective process about personal connection to place & salmon	Verbal, visual and/or oral evidence is provided; a significant reflective process about personal connection to place & salmon

SALMON SENSES & AWARENESS

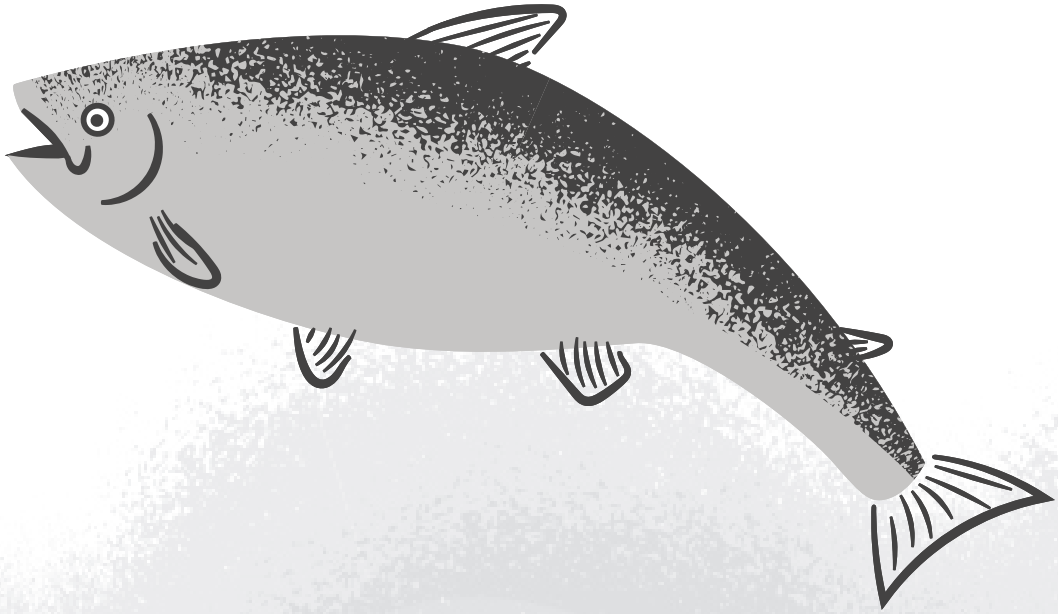
(GRADE 4 SCIENCE, SOCIALS & PHYSICAL EDUCATION)

BIG IDEAS

All living things sense and respond to their environment.
(Gr. 4 Science)

The pursuit of valuable natural resources has played a key role in changing the land, people, and communities of Canada.
(Gr. 4 Socials)

Understanding ourselves and the various aspects of health helps us develop a balanced lifestyle.
(Gr. 4 Physical Education)



LEARNING STANDARDS - GRADE 4

CONTENT	CURRICULAR COMPETENCIES
• **SCIENCE:** Sensing and responding in humans, other animals, plants • **SCIENCE:** Biomes as large regions with similar environmental features • **SOCIAL STUDIES:** The history of the local community and of First Nations communities • **PHYSICAL EDUCATION:** Movement concepts and strategies	• **SCIENCE:** Communicating (express and reflect on personal and shared experiences of place) • **SCIENCE:** Questioning & Predicting (demonstrate curiosity about the natural world) • **SOCIAL STUDIES:** Research & Communication (Use inquiry processes and skills to ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions) (specifically translating information on maps) • **PHYSICAL EDUCATION:** Physical Literacy (how to participate in different types of physical activities, including individual and dual activities, rhythmic activities, and games)

LEARNING TARGETS

1. I am able to demonstrate curiosity about how animals sense and respond to their environment.
2. I am able to express a sense of stewardship for salmon and the biomes in which they live.
3. I am able to interpret information on maps relating to the history of local First Nations communities.
4. I am able to participate in cooperative activities which include body awareness and relationship to/with others and objects.

GUARD THE REDD

LEARNING TARGET:

I am able to demonstrate curiosity about how animals sense and respond to their environment.

I am able to participate in cooperative activities which include body awareness and relationship to/with others and objects.

PRIMER:

A female salmon (hen) will lay 2000-5000 eggs in 4-5 nests (redds). 1 in 1000 will make it back to spawn as an adult. During the spawn, males will quiver beside the female to release milt along with the eggs, which are buried in the redd. The female will guard them for about a week until she dies. Males will go off to continue to spawn.

MATERIALS:

- **A collection of balls or hacky sacks (any amount is fine, and can be a variety of sizes and shapes).**
- **A long rope or backpacks in circle to indicate a border.**

SET-UP:

This game can be played outdoors in all seasons, as long as everyone has suitable outdoor clothing. An open space indoors (like a gymnasium or a classroom space cleared free of desks) is also suitable.

HOW TO:

Everyone is to gather in a circle with one 'female salmon' in the middle. Place eggs (balls) in center. Everyone around the circle is a predator (e.g. trout, dolly varden, etc.) hungry for salmon eggs, and the female salmon must guard her redd from them by tagging them. If any predators are tagged when they enter the redd, they must go back outside and try to come in again. If they steal all of the eggs before the time is up, none of the eggs will live to become adult salmon.

EXTENSIONS:

Add in a second salmon in the centre to guard the redd;
add more eggs for the taking in the centre.

SALMON SWIM HOME

LEARNING TARGET:

I am able to demonstrate curiosity about how animals sense and respond to their environment.

This game is best played in the outdoors, in a forested area if possible.

MATERIALS:

- **Different colours of flagging tape or bandanas**
- **Foam mats or string/rope or backpacks**
- **Pine or spruce cones (can easily be gathered on site)**

PRIMER:

Most salmon go on a journey from stream to sea, and back to stream again. They find their way through sensing and responding, through using something called **magnetoreception** (which is the ability to detect the earth's magnetic field). This means that salmon have a kind of internal compass which helps to guide them back to their birth spot. This is why they can recall the path they need to take from when they were so small.

SET-UP:

- Choose a central area outside that represents the ocean. It should be located roughly in middle of the playing area. Mark it with a ring of backpacks or a large rope circle.
- Place between 4-8 safe zones for salmon to rest on their journey by marking particular trees, placing foam mats on the ground, or loops of string (representing eddies, deep water pools, etc.). These safe zones can be spread throughout the whole playing areal.

THE SALMON:

Divide students up into groups of 3-5, then hand each group a long piece of flagging tape (different colours are helpful, or you may write on them to differentiate one from another). Ask them to take 20-40 large steps away from the ocean in all directions so everyone is equally spread out. Then, students are to tie their piece of flagging tape to a nearby tree to indicate this area as their homestream. Their aim is to leave their homestream, travel downstream to the ocean, where they must swim (run) around in a loop and feed on krill (collect at as many pine cones/spruce cones) as they can without being tagged by a predator) then head back up their stream where the krill now represent eggs. Salmon cannot be tagged in the safe zones. Salmon may only rest for 5 seconds in these zones, then must continue on the journey. If they make it back to their homestream along with another salmon from their homestream without being caught, then they are safe and can not be tagged. They lay their eggs, then decompose and pop back up as a new generation of salmon - only to run through the cycle again.

THE PREDATORS:

Depending on the group size, 2-5 students should be chosen as predators (orcas, sea lions, seals, bears, eagles, trout, etc.). Each predator needs a bandana hanging out of their pocket or tied around their arm. The goal of the predators is to tag the salmon while they are on their migration. If a salmon gets tagged, they must freeze in place until another salmon swims by and sets them free.

EXTENSION:

At any time, you may let the students know that the habitat is shrinking', or that there is pollution in the ocean and then shrink the playing area to make it more difficult for the salmon.

WRAP-UP:

Gather the students up once the game energy level has peaked (you can let them know by increments how much time is left). Consider posing the following questions:

- What was your experience like as a salmon?
- What were the landmarks near your homestream you needed to remember to find your way?
- How did you orient yourself? How is this similar or different than how salmon orient themselves?
- What happened when the habitat shrank? How might that affect the salmon who are migrating?
- What were the predators concerned about? How did the shrinking habitat affect them?

FIND YOUR WAY

LEARNING TARGET:

I am able to demonstrate curiosity about how animals sense and respond to their environment.

I am able to participate in cooperative activities which include body awareness and relationship to/with others and objects.

MATERIALS:

- **Bandanas or students' toques that can be used as blindfolds**

SET-UP:

This activity is best done outside in a forested area.
Students pair up in groups of 2 (Partner A and Partner B).

HOW TO:

Tell the students that they are all salmon, about to go on the long migration back to their original home. They will begin as an egg, and move through all stages of the salmon life cycle. Everyone begins in the ocean (a central area). Partner A will begin as the egg and will be blindfolded. Partner B will be the spawning salmon, carrying or leading Partner A to its home stream.

Partner B guides Partner A carefully and gently to find a special tree while they are blindfolded. Once a tree has been chosen, Partner A (while still blindfolded) will memorize the area. They may want to use their sense of smell and touch to orient themselves to their home stream. At this location, you may want to prompt the pairs with questions like:

- What is unique about your tree and the surrounding area?
- What textures do you feel? Soft? Smooth? Rough? Scratchy? Sharp?
- What do you notice about the smells of your area?
- What is on the ground?

This moment orienting represents the eggs being laid, and developing into alevin, fry and smolts which are now ready to travel to the ocean, which you may want to guide the students through. While still blindfolded, Partner A is guided back to the ocean (perhaps taking an indirect route to get there). Then, once in the ocean, the blindfold is lifted and Partner A must now find their way to their homestream (find their original tree). Once Partner A has found their tree, they may switch places. Each student may give hints to their partner to help them succeed.

WRAP-UP:

After everyone has had a chance to experience the activity, ask:

- What did it feel like to be guided without the ability to see?
- How did you know how to find your homestream? What was unique about your area?
- How does this compare to how salmon migrate back to their homestream? What are some similarities and differences?

SALMON MAPPING

LEARNING TARGET:

I am able to interpret information on maps relating to the history of local First Nations communities.

MATERIALS:

- **Salmon Know No Borders map* map of the Yukon River Watershed (attached). projected or printed out**
- **60 small 2'x2' cut out pieces of paper (3 different colours of 20 each) (optional)**
- **Whiteboard markers**

HOW TO:

Lay out *Salmon Know No Borders* map on the ground, and have students to gather around the map. If an Elder is present, ensure students understand appropriate respectful behaviour when in their presence. Invite the Elder to point out any traditional sites on the map if they are able and share any culture or history. Hold space for any stories or teachings that come up within this space.

If an Elder is not present, invite students to share what they notice about the map. You may pose questions such as:

- What is this a map of? What does the highlighted region represent? (Answer: Yukon River Watershed). What do you know about a watershed?
- What features do you notice on the map?
- What might have looked different on this map 150 years ago?
- What sorts of changes have happened in this watershed since then?
- How do you think these changes might have impacted wildlife, including salmon, in this area?
- If a salmon egg was laid *here* (choose any stream on the map), what route would it take so that it could spawn? (Eg. slightly upstream to rear, then downstream to the ocean, then back upstream to the same spot to spawn again). Invite students to trace routes that salmon born in various streams might take to return back to their homestream.
- What sorts of obstacles do salmon face along the way?
- How are the communities along the way affected by the salmon?

* available by contacting
info@salmonintheschools.com
or Yukon Salmon Subcommittee

SALMON MAPPING CON'T

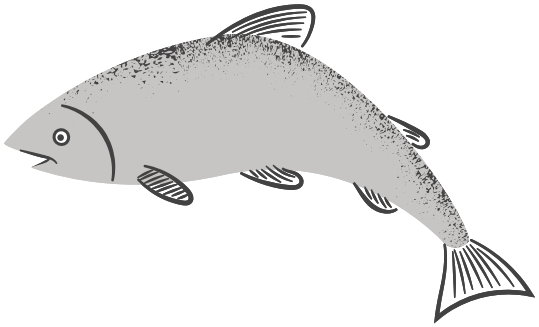
Hand out several small pieces of paper which represent salmon to each student. Have them distribute their fish to several locations of their choosing in the watershed. Give them several minutes to do this, reminding them to think about the reasons *why* they are choosing this location.

ADD-ON:

Other sets of pieces of paper could represent various types of fishing implements (fish nets, fishing rods, dip-nets, etc.). Another set could represent predators and salmon eaters. Students could distribute these across the map as they see fit.

ASSESSMENT OPPORTUNITY:

Have them turn to a friend and share one reason why they chose this spot. Going one by one, have each student share where they placed their salmon and why with the group.



CREATE A SALMON STEWARD POSTER

MATERIALS:

- **Can be made and printed digitally**
- **Paper, markers etc.**

LEARNING TARGET:

I am able to express a sense of stewardship for salmon and the biomes in which they live.

HOW TO:

Invite the class to imagine that they are campaigning to protect the livelihood of Yukon River Salmon. Their job is to create an awareness poster campaigning for the protection of salmon and their livelihood. They may have to research some facts from the local library, classroom resources or with online websites (many listed below in Resources).

The poster must include:

- At least three important and interesting facts about Yukon River or Porcupine River salmon
- A drawing, collage, sketch or other visual representation relating to salmon and its surrounding biome (underwater in a stream, bird's eye view of river, close-up of salmon skin, etc.)
- A call to action (i.e. an action that the public can do to help support salmon habitat)

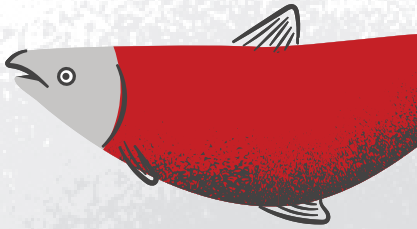
Adapt the above to best suit the needs of your students.

ASSESSMENT OPPORTUNITY:

While part-way through the poster-making process, invite all students to take a pause. Show the students an exemplar of a poster, and model self-assessment, then invite them to do the same. Ask them to take one minute and analyze their own poster, looks at the three requirements listed, and see if there is anything that they could improve. Perhaps you want to circulate and ask them one thing they realized they could do to improve before they produce the final version.

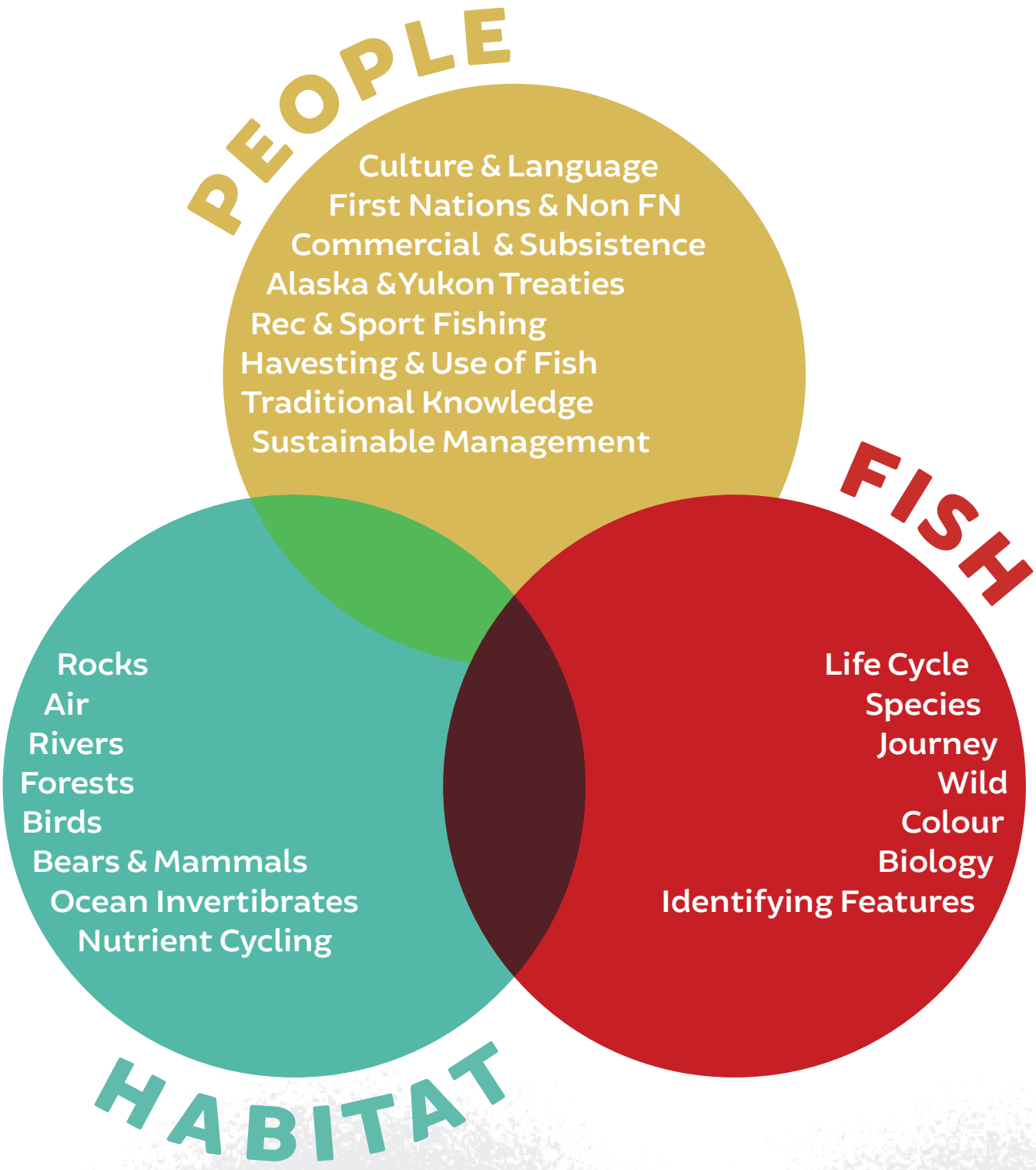
WRAP-UP:

Invite students to present their posters in small groups, or to the whole class. The posters may be displayed on a classroom wall or near the school's salmon egg fish tank (if there is one).



ASSESSMENT SALMON SENSES AND AWARENESS

ASSESSMENT FRAMEWORK	1 Not yet meeting expectations	2 Approaching expectations	3 Meeting expectations	4 Exceeding expectations
I am able to express a sense of stewardship for salmon and the biomes in which they live.	No presentation or little to share. Poster may be incomplete.	Shows some understanding of stewardship. Poster may be missing some required elements.	Expresses the importance of caring for salmon and the habitat. Poster meets all requirements.	Shows deep sense of stewardship for salmon and their habitat. Encourages and supports classmates to express this. Poster may exceed requirements.
I am able to demonstrate curiosity about how salmon sense and respond to their environment.	Shows little to no interest in developing a sense of curiosity of animal senses. Struggles to develop questions.	Participates in games willingly. May need support or prompts in developing questions and wonderings.	Participates actively in games. Reflects through questions and remains curious about the experience of salmon.	Shows leadership through participation in games. Poses well-thought out questions.
I am able to interpret information on maps relating to the history of local First Peoples communities.	May be disengaged from mapping activity or stories shared.	Participates in mapping activity. Listens to Elder stories.	Recalls relevant details from Elder stories and connects them to the map. Engages in mapping activity to deepen cultural understanding.	May recall place names that an Elder has shared. Uses multiple sources of information on a map to build understanding of history and cultural significance.
I am able to participate in cooperative activities which include body awareness and relationship to/with others and objects.	Disengaged or not able to participate well in activities.	Somewhat able to participate in cooperative activities. May lack interest or initiative to deepen body awareness and explore relationship connection.	Engaged and acknowledges a sense of body awareness. Perhaps includes a reflection on awareness or relationship connection.	Highly engaged and shows initiative when cooperating with others. May support others in the development of their awareness or relationship connection.


PEOPLE
Culture & Language
First Nations & Non FN
Commercial & Subsistence
Alaska & Yukon Treaties
Rec & Sport Fishing
Havesting & Use of Fish
Traditional Knowledge
Sustainable Management
FISH
Life Cycle
Species
Journey
Wild
Colour
Biology
Identifying Features
HABITAT
Rocks
Air
Rivers
Forests
Birds
Bears & Mammals
Ocean Invertibrates
Nutrient Cycling

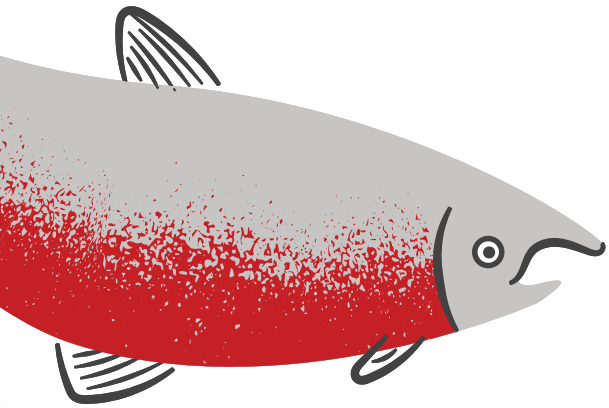
ADDITIONAL ACTIVITIES

Listed below are some additional activities that may deepen and complement the above lessons.

ELDERS & CULTURAL PRACTICES

- **ELDER STORIES** – If Elders are available and keen to share their stories, create time so that this is a priority for all learnings.
- **SHARING FOOD** – The program could be extended into a community lunch or dinner with a focus on salmon as a source of food and nutrition, and sharing stories over food.
- **LANGUAGE TEACHER** – If your school has a First Nations language teacher available, hold space so that they can teach language related to salmon, fishing and respect for fish.

ON THE LAND



- **FISHING LESSONS** – Depending on weather, numbers and available equipment, you can include lessons on fly or spin casting, fishing knots, etc. Invite local specialists and knowledge keepers to facilitate.
- **PERSONAL PHOTOGRAPHY** – You may include deeper discussion about our relationship to salmon through photos. Students may take photos of objects and areas that represent their connection to salmon. These photos can be featured in a project, or displayed in the classroom space with an accompanying story, poem or phrase.
- **SALMON PREPARATION** – Students can work with Elders to learn about fish handling and care. This could also include learning ways of cooking and preserving salmon, and preparing a few salmon recipes. Consult with local Elders about opportunities.

IN THE CLASSROOM

- **FRESHWATER FISH** - Freshwater fish (Lake Trout, Pike, Whitefish) can be included in the discussion and activities related to resource management, cultural practices and language.
- **WATERSHED EXPLORATION** - Watershed maps of Yukon salmon runs with Yukon communities and First Nation territories can be printed. Explore the border, spawning targets and what this means for fish and people. Go through scenarios with climate change (high-water, water temperature rising, increased predators, etc.), industry (hydro, mining) or natural disasters.
- **STORYBOOKS** - Understanding can be deepened by incorporating storybooks about salmon life cycles and their connection to the ecosystem. (see booklist in the Resources section)
- **YUKON SALMON SUBCOMMITTEE VIDEOS** - Watch and discuss the Yukon Salmon Subcommittee online video resources about historical and contemporary salmon management.
- **WHAT'S YOUR SALMON STORY?**
    - **Storyboards** - Students can draw images that represent their personal connection to or ideas about salmon. This could include connected words, sentences or paragraphs to describe what is going on in the images.
    - **Collage** - Students can collect their own photos, online images or cut-out images from magazines that visually tell the viewer about their connection to or ideas about salmon.
    - **Interview an Elder** - Students can brainstorm a few questions and then collect their answers on the template.
    - **Comic Strip** - Students can use six frames to draw what the life of a salmon might look like, migrating from ocean back to spawning grounds. What challenges might they encounter along the way?
    - **An Egg Point of View** - Students can draw a picture of the view of the spawning grounds from the perspective of a salmon egg (think subsurface!).
    - **Short Story** - Students can write a story from the perspective of a salmon or a salmon-eater (animals, bacteria, humans, etc.).

LEARNING STANDARDS

Below is a list of learning standards (with one suggested learning target) for each grade from K-12. Links to the full BC/Yukon curriculum can be found online here.

Grade	Subject	Big Ideas	Curricular Competencies	Content
K	Science	Plants and animals have observable features.	• Make exploratory observations using their senses • Experience and interpret the local environment • Recognize Yukon First Nations stories (including oral and written narratives), songs and art as a way to share knowledge • Express and reflect of personal experience of place	• Basic needs of plants and animals • Adaptations of local plants and animals • Local First Nations uses of plants and animals
Grade 1	Science	Living things have features and behaviours that help them survive in the local environment.	• Demonstrate curiosity and sense of wonder about the world • Experience and interpret the local environment • Consider some environmental consequences of their actions	• Names of local plants and animals • Structural features of living things in the local environment • Local First Nations understanding and use of seasonal rounds
Grade 2	Science	Living things have life cycles adapted to their environment.	• Demonstrate curiosity and sense of wonder about the world • Experience and interpret the local environment • Consider some environmental consequences of their actions • Express and reflect on personal experience of place	• Metamorphic and non-metamorphic life cycles of different organisms • Similarities between offspring and parent (salmon change a great deal as they grow and need fresh and saltwater environments to survive) • First Nations use of their knowledge of life cycles (~stewardship: sustainably gathering plants and hunting/fishing in response to seasons and animal migration patterns (e.g., clam gardens, seasonal rounds, etc.)~sustainable fish hatchery programs run by local First Nations)

Grade 2	Arts	Creative expression develops our unique identity and voice.	• Exploring & Creating (Explore personal experience, community, and culture through arts activities)	• Dramatic forms and visual arts (animal forms)
Grade 3	Science	Living things are diverse, can be grouped, and interact with their local ecosystems.	• Demonstrate curiosity about the natural world • Identify FIrst Nations perspective and knowledge as sources of information • Contribute to care for self, others, school and neighbourhood through personal or collaborative approaches	• Biodiversity in the local environment • Knowledge of local First Nations of ecosystems (interconnection between living and non-living things, our shared responsibility to care for the local environment (i.e. stewardship), information shared from the local First Nations community and Elders)
Grade 4	Science	All living things sense and respond to their environment.	• Demonstrate curiosity about the natural world • Suggest ways to plan and conduct an inquiry to find answers to their questions • Experience and interpret local environment • Identify First Nations perspective and knowledge as sources of information Order is a pattern that can be recognized as having levels - big to small, simple to complex - or as a process with a sequence of steps. How is order apparent in the adaptations of forest animals? How does the order of seasons impact local plants and animals?	• Sensing and responding in humans (five senses) and other animals (e.g. salmon), plants (response to light, water, touch, gravity) • Biomes are regions grouped by similar temperature and precipitation (including terrestrial and marine ecosystems)

Grade 4	Social Studies		• Research and Communication (Use inquiry processes and skills to ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions (translating information on maps))	• The history of the local community and of Yukon First Nations communities
Grade 5	Science	Multicellular organisms have organ systems that enable them to survive and interact within their local environment.	• Demonstrate a sustained curiosity about a scientific topic or problem of personal interest. • Communicate ideas, explanations and processes in a variety of ways. • Contribute to care for self, others, neighbourhood and community through personal or collaborative approaches (A system is a set of interacting interdependent pieces of components that come together to form a whole. A system occupies a physical of a temporal space within a set environment, has a representative form, and possesses a purpose or function.) How can you observe the concept of interconnectedness within ecosystems in your local area?	• First Nations concepts of interconnectedness in the environment • The nature of sustainable practices around Yukon's resources • First Nations knowledge of sustainable practices
Grade 6	Socials (Global Issues and Gover-nance)	Complex global problems require international cooperation to make difficult choices for the future.	• Take stakeholders' perspectives on issues, developments, or events by making inferences about their beliefs, values, and motivations (perspective) • Differentiate between short- and long-term causes, and intended and unintended consequences, of events, decisions, or developments (cause and consequence)	• Economic policies and resource management, including effects on indigenous peoples • International cooperation and responses to global issues

Grade 6	Science	Multicellular organisms rely on internal systems to survive, reproduce, and interact with their environment.	• Identify First Nations perspectives and knowledge as sources of information • Express and reflect on personal, shared, or others' experiences of place	• Local First Nations knowledge of separation and extraction methods (historical and current First Nations use of separation and extraction methods (e.g. eulachon oil, extraction of medicines from plants, pigments, etc.)
Grade 7	Socials (Ancient World – 7th century)	Religious and cultural practices that emerged during this period have endured and continue to influence people.	• Explain different perspectives on past or present people, places, issues, or events, and compare the values, worldviews, and beliefs of human cultures and societies in different times and places (perspective)	• Scientific, philosophical, and technological developments • Interactions and exchanges between past civilizations and cultures, including conflict, peace, trade, expansion, and migration
Grade 7	Science	Evolution by natural selection provides an explanation for the diversity and survival of living things.	• Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • (Ways of knowing refers to the various beliefs about the nature of knowledge that people have; they can include, but are not limited to, indigenous, gender-related, subject/discipline specific, cultural, embodied and intuitive beliefs about knowledge.)	• Survival needs • Natural selection • First Nations knowledge of changes in biodiversity over time • Local First Nations knowledge of climate change (oral history, change in traditional practice (e.g., the timing of harvest has been impacted by climate change), etc.)
Grade 8	Socials (7th century – 1750)	Human and environmental factors shape changes in population and living standards.	• Explain different perspectives on past or present people, places, issues, or events, and compare the values, worldviews, and beliefs of human cultures and societies in different times and places (perspective)	• Social, political, and economic systems and structures, including those of at least one indigenous civilization • Scientific and technological innovations

Grade 9	Science	The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them. (How do First Nations view the cycling of matter and energy?)	• Apply First Nations perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Experience and interpret the local environment • Express and reflect on a variety of experiences, perspectives, and worldviews through place	• First Nations knowledge of interconnectedness and sustainability
Grade 10	Socials (Canada and the World: 1919 to Present)	Worldviews lead to different perspectives and ideas about developments in Canadian society.	• Compare and contrast continuities and changes for different groups • During this period (continuity and change) • Assess the significance of people, places, events, or developments, and compare varying perspectives on their significance at particular times and places, and from group to group (significance)	• Human–environment interaction • Economic development and Canada's role in a global • Economy • Truth and reconciliation in Canada
Grade 11	Human Geo.	A geographic region can encompass a variety of physical features and/or human interactions.	• Assess the significance of places by identifying the physical and/or human • Features that characterize them (sense of place)	• Relationships between cultural traits, the use of physical space, and impacts on the environment, including First Nations cultures • Relationships between natural resources and patterns of population • Settlement and economic development
Grade 12	Phys. Geo.	Human activities and resource use affect the environment.	• Identify and assess how human and environmental factors and events influence each other (interactions and associations) • Assess the significance of places by identifying the physical and/or human features that characterize places (sense of place)	• Natural resources and sustainability

RESOURCES

The best resources available are local Elders and knowledge keepers. The young people in the classroom during the program can also be excellent sources of information. Each program should be guided by local knowledge and expertise, and the more appropriate community members you can include, the better the program discussions and learnings will be. The resources below are for extensions that can be added once local Traditional Knowledge has been introduced.

EDUCATOR RESOURCES		
CULTURAL CONTEXT	Science First Peoples Teacher's Resource Guide Keeping our Traditions at the Fish Camps: Our Ancestors' Gift to our Youth document (Selkirk First Nation, Pelly Crossing) Native Language Dictionaries (online language app for Southern Tutchone and Northern Tutchone dictionary online)	Nuu-chah-nulth Cultural Perspective to Complement the DFO Primary Salmonids-the-Classroom Pilot Version Curriculum A Time When Salmon are No More (Teslin Tlingit Council)
BOOKS	• Life Cycle of a Salmon (Bobbie Kalman) • Life Cycle of a Salmon (Angela Royston) • Salmon Forest (David Suzuki) • Salmon Stream (Carol Reed-Jones) • A Salmon for Simon (Betty Waterton) • Swimmer (Shelly Gill) • Red Tag Comes Back (Fred Phleger) • Salmon in the Trees (Amy Gulick) • Salmon Creek (Annette LeBox) • Sockeye Mother (Brett David Huson)	Leap! A Salmon's Story Adventure (fiction) 400 words, Level K (Grade 2). First Nation - Salmon Book List

WORK-SHEETS	SalmonWILD	Young Naturalists Club of BC PDF of Salmon Life cycle (7/8/9)
GAMES/ ACTIVITIES/ SONGS	The Salmon Game Hooks and Ladders (similar) Salmon Circle Song Salmon Song	Salmon Wild Obstacle Course My Seasonal Round - OpenSchoolBC You Could Be a Salmon song (Black Spruce Bog)
ONLINE	www.salmoninthetrees.org Alaska Salmon in the Classroom Curriculum (journal template, ID cards, etc.) Alaska's Sea's and Watersheds - A Salmon's Life Journey Alaska Sea's and Watersheds - Fish Finders (Could Salmon Live Here?) Salmon Subcommittee Videos Salmon ID Quiz Salmonoids in the Classroom: A Teacher's Resource for Studying the Biology, Habitat and Stewardship of Pacific Salmon Fisheries and Oceans Canada Resources for Educators Stream to Sea Program	Pacific Streamkeepers Foundation Earthling Enterprises - Salmon Education Resources Salmon-Forest Connection Graphic Pacific Salmon Foundation Red Gold Film - Trailer (2008) Salmon Confidential Film (2013) My Seasonal Round - OpenSchool BC www.yukonsalmonresiliency.com www.yearofthesalmon.org www.yukonriverpanel.com

OTHER	**SOCIAL MEDIA AND PUBLIC ENGAGEMENT** The Marine Detective Save Our Wild Salmon Salmon Beyond Borders Friends of Wild Salmon Stand for Salmon Watershed Watch Salmon Society Salmon Protection and Watershed Network (SPAWN) **OTHER IN-CLASS RESOURCES** Columbia Springs layout of sample SITC activities broken down by grade Salmon Know No Borders map (Yukon Salmon Subcommittee) Pacific Salmon Life Cycle poster (Fisheries and Oceans Canada) **LEADERSHIP PROGRAMS** Fraser Basin Council Youth Leadership & Mentorship Program Review (Fraser Salmon & Watersheds Program)

For further information:

Salmon in the Schools
info@salmonintheschools.com
salmonintheschools.com

SALMON in the SCHOOLS.com