

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

Time

75 mins (2 class periods)

Overview

Students will explore The Rivershed Society of BC's Watershed CPR Education Program interactive website to learn about the people, cultures, flora and fauna associated with the Fraser River watershed, as well as the watershed's history and how to protect it.

Subject/Topic

Geography, History, Social Studies, Science

Grade Level

This lesson can be adapted for multiple grade levels but is best suited for grades 4-12.

Learning Goals

Students will:

- Learn about the importance of watersheds using the Fraser River watershed as an example.
- Learn about the three pillars of Watershed CPR: Connect, Protect, and Restore.
- Explore the Watershed CPR program and cultivate their own unique connection to the Fraser River watershed and watersheds in general.
- Discuss their learnings about the importance of protecting the Fraser River watershed with their classmates.

Lesson Description

Minds on

Students will learn about and discuss how water is connected to their everyday actions. They will also learn what a watershed is and how people are connected to watersheds.

Action

Students will be given independent time to explore the interactive [Watershed CPR website](#) and use their Exploration Handout to answer a series of questions about what they have learned while exploring.

Conclusion

Students will discuss what they have learned and why protecting the Fraser River watershed, and all watersheds, is important.

Lesson Implementation

Minds on

Display a map of Canada for all students to see, and write the word "water" on the board. As a class, name the oceans that surround Canada, as well as the Great Lakes, major Canadian rivers, and any other large lakes located within Canada. Finally, locate your home community and, if you have a river or lake near your community, identify that as well.

Explain to students that Canada has about 20 per cent of the world's freshwater resources. As a class, discuss the different types of water bodies found in Canada as well as the role fresh water plays in Canada. Why is fresh water important? How do Canadians use water in their everyday lives and how does their use of water connect to Canada's fresh water? How would our lives be different if we didn't have access to so much fresh water? If Canada has 20 per cent of the world's fresh water, what does this mean for the rest of the world?

Next, explain to students that all the water that makes up Canada's lakes, rivers, bays, streams, and oceans is connected. In fact, no matter where you are standing, you are standing in a watershed. When it rains or when the snow melts, that water is also added to watersheds. Inform students that they will be exploring an interactive website and learning all about watersheds, specifically the Fraser River watershed in British Columbia.

Note to teacher: A watershed can be defined as an area that drains all the water in that environment into a particular stream, river, or lake.

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

Materials Needed

- Map of Canada
- Computer or mobile device with internet access
- Access to the Rivershed Society of BC's Watershed CPR Education Program (watershedcpr.canadiangeographic.ca/)
- Exploration Handout (attached)

Connection to the Canadian Geography Framework

Concepts of Geographic Thinking

- Patterns and trends
- Interrelationships
- Geographic perspective
- Spatial significance

Inquiry Process

- Formulate questions
- Gather and organize
- Interpret and analyze
- Evaluate and draw conclusions
- Communicate

Geospatial Skills

- Foundational elements
- Technology

Action

The Rivershed Society of BC has created a fun, interactive website focused on learning about the Fraser River watershed, the largest watershed in British Columbia. Whether you live in the watershed, near it, or in a different part of Canada, this watershed exploration experience will help students learn about how people, plants and animals are all connected within a watershed.

Divide students into pairs or small groups and ensure each group has a device with internet access so they can connect to the website. Next, distribute the Exploration Handout to each group and inform students that they are to use this handout to record ideas, answer questions about what they have learned and stay focused on important topics while they are exploring the website. As a class, read through the instructions on the handout, answering any questions that arise. When students are ready and have accessed the website, allow the rest of the class period to be used as exploration time on the website.

Note to teacher: this interactive website has two levels: (1) Salmon Fry - for elementary students and (2) Salmon - for secondary students. Explore the website prior to introducing this activity so that you can recommend the level that is the most appropriate for your class. You can decide ahead of time which level is best suited for your students. If students will be exploring the website over multiple class periods, it is recommended that students use the same device if possible. Returning students will have the ability to pick up where they left off.

Conclusion and Consolidation

When students have completed their handouts, take up the answers as a class.

Afterwards, in groups or as a class, discuss the following questions, connecting what students have learned on the website to what they can do to take action. Have students write down one everyday action they can take to become a "Watershed Defender" and hand it in as an exit ticket.

- Why do we need healthy watersheds?
- Why is it important to protect watersheds?
- What surprised you about what you learned about watersheds?
- What are some everyday actions you can take to be a "Watershed Defender"?

Note to teacher: At the end of both levels, there is a "Watershed Defender Challenge" game, which, when successfully completed, presents the user with a Watershed Defender certificate. This can also be shown, via tablet/screen, as an exit ticket.

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

Extend your geographical thinking

If you do not live in the Fraser River watershed, learn about and map your community's watershed. Determine how big it is, where the water flows, and assess the overall health of your community's watershed.

Next, research community organizations connected with protecting your community's watershed and get involved. Connect with local Indigenous organizations to learn about their connection to water and the land.

Modifications

- For younger grades: In addition to students having a device for each small group, display the website for all students to see, so students can follow along. Complete the Exploration Handout as a class.
- Project the website onto the board as students are exploring and highlight some things along the way or take up some questions gradually as students move from section to section.
- Students can be given the choice to complete this activity in groups or individually.

Assessment Opportunities

- The teacher can assess students on their participation in class discussion.
- Students can assess other students in their group.
- Students can submit their Exploration Handout for assessment.
- Students can submit their "Watershed Defender Certificate" as proof of completion of the program.

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

EXPLORATION HANDOUT - SALMON FRY LEVEL

Follow these instructions to begin your watershed exploration:

1. Go to the Watershed CPR website: watershedcpr.canadiangeographic.ca
2. Choose your level: Salmon Fry (elementary).
3. Start exploring!

As you explore this website, three themes will be highlighted: Connect, Protect and Restore. The following handout is divided into these sections as you dive deeper into each theme. Answer the questions in each section using the space provided. (Note: Not all sections on the website are included in this handout.)

Name: _____



CONNECT

Connecting to the Fraser:

1. Watch the videos provided in this section and complete the questions provided on the website.

Map Exploration:

2. What is a watershed?

3. Name the six regions of the Fraser River watershed:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

4. Select one region and write three things you learned about this region.

Region:

- a. _____
- b. _____
- c. _____

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE



PROTECT

Five Species of Pacific Salmon

5. What are the five species of Pacific Salmon?

6. Select one species of Pacific Salmon and click through the numbers 1 to 5 in the top-left corner to learn more about the species. Answer the following questions about the species you chose:

a. Does it have spots?

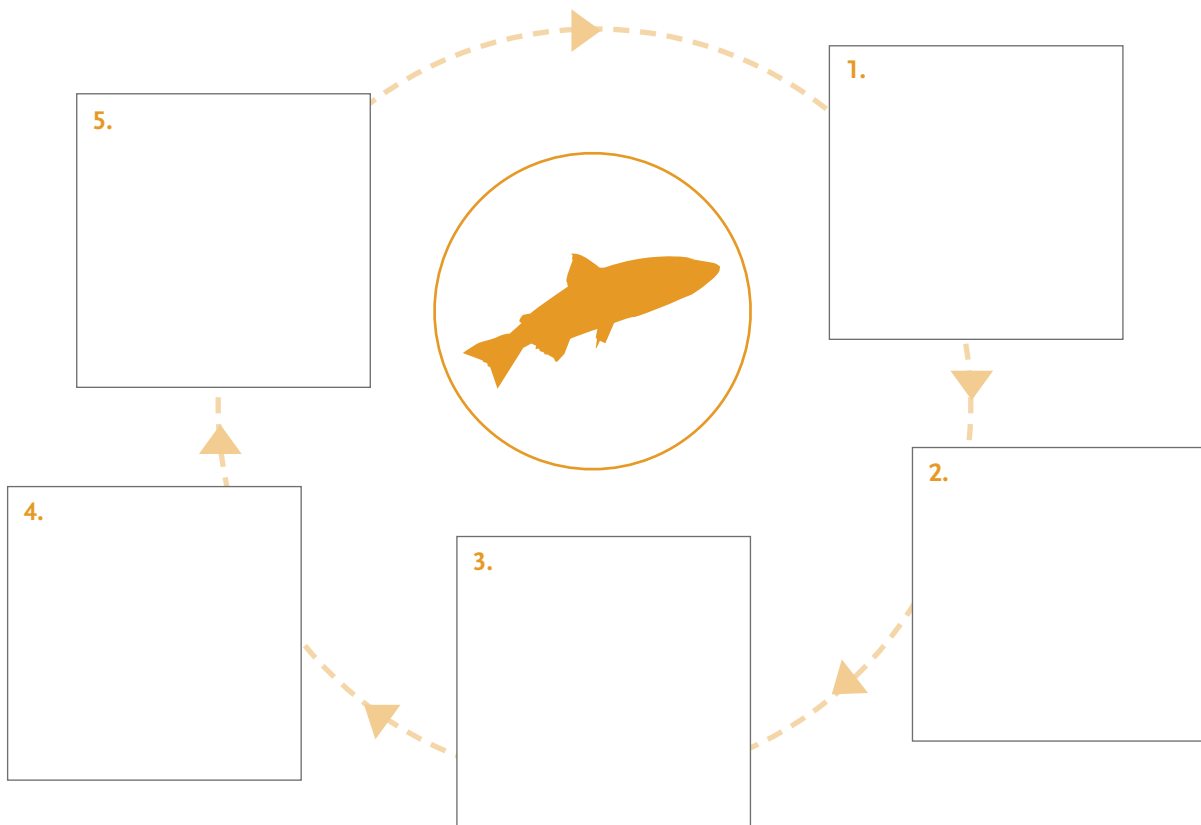
b. How big is it?

c. How long does this species spend in its home stream before beginning its journey to the ocean?

d. How old is this species when it migrates back to its home stream?

Lifecycle of a Salmon

7. Using the space provided below, draw the five stages in a salmon life cycle.



EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

The Salmon Connection

8. Salmon are a keystone species in the Fraser River. What does that mean?

First Nations of the Fraser: Kwantlen First Nation

9. Watch the video to learn about the relationship the Kwantlen First Nation has with the Fraser River watershed. Comment on two ideas discussed in the video.

a. _____

b. _____

History of the Fraser

10. Explore the history of the Fraser River and complete the questions provided on the website.



Stories of Conservation Optimism

11. Select one of the videos provided in this section and summarize how this video is an example of a positive initiative to protect the Fraser River watershed.

Learn to Leave No Trace

12. In your own words, what does it mean to “leave no trace”?

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

13. Explore the graphic provided in this section and locate all five examples of “leave no trace”.

Share Your Ideas

14. The last activity is a “Watershed Defender Challenge” where you can play a game and answer questions. Share one thing you learned about or appreciate that is connected to the Fraser River watershed. Write your thoughts below or in the space provided on the website.

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

EXPLORATION HANDOUT - SALMON LEVEL

Follow these instructions to begin your watershed exploration:

1. Go to the Watershed CPR website: watershedcpr.canadiangeographic.ca
2. Choose your level: Salmon (secondary).
3. Start exploring!

As you explore this website, three themes will be highlighted: Connect, Protect and Restore. The following handout is divided into these sections as you dive deeper into each theme. Answer the questions in each section using the space provided. (Note: Not all sections on the website are included in this handout.)

Name: _____



CONNECT

Connecting to the Fraser:

1. Watch the videos provided in this section and complete the questions provided on the website.

Map Exploration:

2. What is a watershed?

3. Name the six regions of the Fraser River watershed:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

4. Select one region and write three things you learned about this region.

Region:

- a. _____
- b. _____
- c. _____

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE



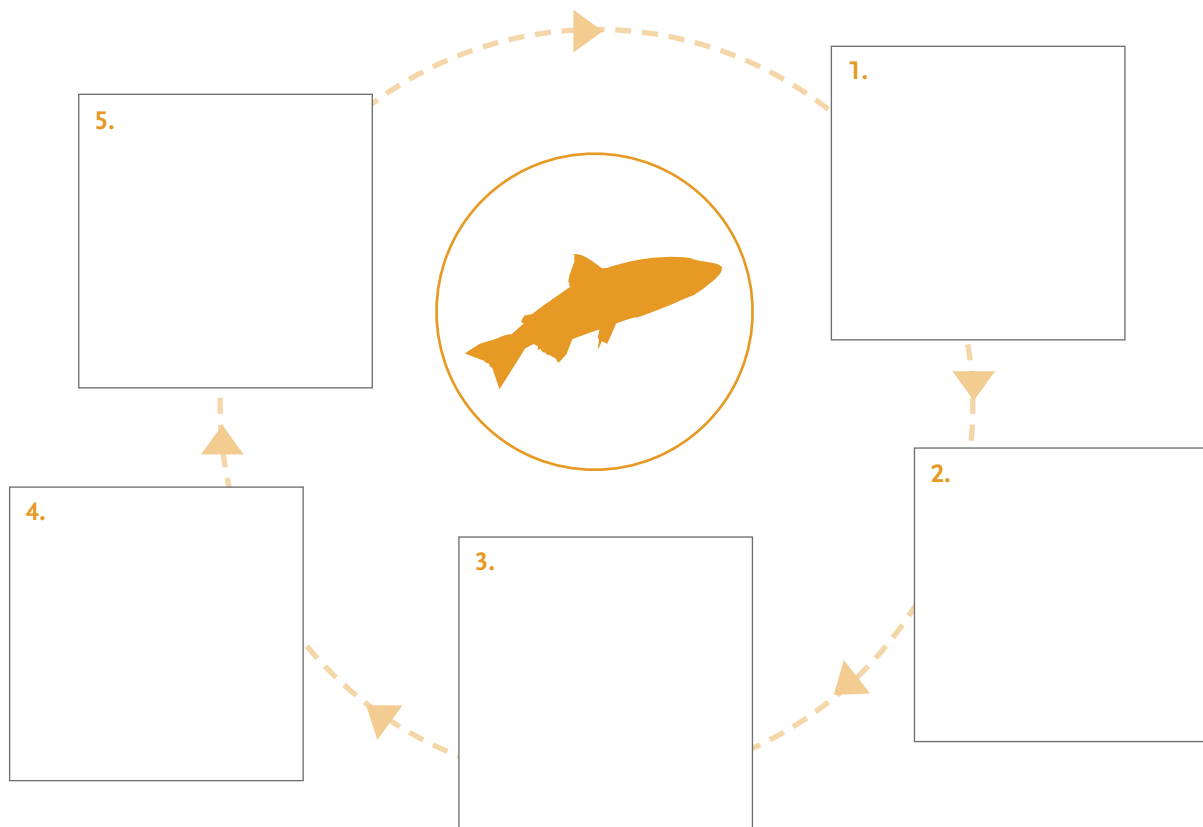
PROTECT

History of the Fraser

5. Explore the timeline provided and examine ways that human decisions and actions have changed the region over time. Select one period of history to expand on in the space provided below.

Lifecycle of the Salmon

6. Explore the interactive graphic describing the life cycle of a salmon. Using the space provided below, draw the five stages in a salmon life cycle.



The Salmon Connection

7. Salmon are a keystone species in the Fraser River. What does that mean?

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

8. On the website, match the various species provided to their appropriate places in the food web.

Two-Eyed Seeing

9. What is “two-eyed seeing”? Why is it important?

10. Complete the puzzle activity to learn more about the ways Indigenous knowledge and Western science and worldviews have been used to better understand the world.

First Nations of the Fraser: Kwantlen First Nation

11. Watch the video to learn about the relationship the Kwantlen First Nation has with the Fraser River watershed. Comment on two ideas discussed in the video.

a. _____

b. _____

Campaigning for the Fraser

12. Step into the shoes of a local government official serving the Fraser River watershed. Complete the activities in this section by reviewing the information provided, examining the demographics of the area, and casting your vote.



RESTORE

Stories of Conservation Optimism

13. Select one of the videos provided in this section and summarize how this video is an example of a positive initiative to protect the Fraser River watershed.

EXPLORING WATERSHEDS: A FRASER RIVER EXPERIENCE

Watershed CPR

14. Explore the table provided to learn more about what a resilient watershed looks like. In your own words, create a definition or summarize what you consider to be a “resilient watershed”.

Environmentalist or Environmental-ish?

15. Complete the interactive checklist to determine the actions you have taken to protect your local environment. Record your results below.

Share Your Ideas

16. The last activity is a “Watershed Defender Challenge” where you can play a game and answer questions. Share one thing you learned about or appreciate that is connected to the Fraser River watershed. Write your thoughts below or in the space provided on the website.
