

Whose Job is it Anyway?

Background Information on the Fraser River:

The Fraser River was named after Simon Fraser (1776-1862) who explored the river in 1808 on behalf of the North West Company in search of a navigable route for fur trading. Simon Fraser believed that he was traveling on the Columbia River to its ocean outlet. It was another explorer, David Thompson, who later named the river after Simon Fraser.

First Nations people had lived along the Fraser River for thousands of years before Simon Fraser's arrival. Some of the archaeologists estimate up to 9000 years before. (A site under the Alex Fraser Bridge has been dated back that far). While we can't know an exact arrival date, it would have been after the last ice age, 10-14 thousand years ago. It is worth noting, though, that within the oral traditions of First Nations groups, there are no stories of them arriving in what we now call Canada. For them, they have always been here.

The Fraser River starts as a trickle at Mount Robson (Headwaters) and ends in the Strait of Georgia in the Pacific Ocean. There are many tributaries that add water to the Fraser, including the Thompson River (22% of the total water flow).

The Fraser River is estimated to be 1,375 kilometers long. If it was stretched out across Canada, it would span the distance between Vancouver and Regina, Saskatchewan. The Fraser River is longest river in BC, and the fifth largest river in Canada. It is less than 15,000 years old.

The characteristics and landscapes of the Fraser River change from the beginning of its journey to its end. As you exit the headwaters on Mount Robson and enter the Upper Basin region, the river's sediment load increases creating more turbulent waters with the water appearing grey or brown in colour. The river then passes through drier lands with low vegetation as a result of little rainfall and hot temperatures. In the Fraser Canyon, the river is squeezed between the Coast and the Cascade mountain ranges, increasing the speed and creating many impressive rapids.

The point at which the fresh water of the Fraser River meets the salty water of the Pacific Ocean is called the estuary, (also sometimes called "between land" by the First Nations people because as the tides ebb and flow, the estuary mudflats alternate between being exposed and submerged). Because estuaries have access to both riparian (river) and marine nutrients, they are home to an incredible diversity of life.

A habitat can be defined as a place where an organism can get food, water and shelter. The major habitat types along the Fraser River include: brackish and freshwater marshes, salt marshes, tidal flats, sloughs, and flood-plain forests among others.

The Fraser River watershed is also home to 60% of BC's population, approximately 2.7 million people. A watershed is an area of land that drains all the water into one main river. The Fraser River watershed is also called a drainage basin, since it collects so much water and drains such a large area (25% of BC's area).

Program Overview:

Students learn the process of spill cleanup in the Fraser River and the Burrard Inlet, and how oil is used in our daily lives. During this workshop, students roleplay a spill response drill using equipment from the OSCAR trailer. Students also engage in a game that introduces them to the variety of ways oil is to maintain the lifestyles we have created.

Program Objectives

- To understand our connection to the Fraser River, through recreation, culture, the economy and the environment.
- To understand how the Fraser River connects Canada to the rest of the world, through the import and export of goods.
- To understand the dangers of an oil spill, and the process of cleaning one up.
- To explore the surprising ways we use oil in our everyday household objects.
- To learn about the responsibilities we all share for keeping our rivers clean.

Helpful Vocabulary

Responsibility: the state or fact of having a duty to deal with something

Crude Oil/Oil: a liquid that can be extracted from the earth and refined to produce fuels including gasoline, kerosene, and diesel oil

Boom: a floating beam used to contain oil spills or to form a barrier across the mouth of a harbor or river

Renewable Resource: a resource which can be used repeatedly and replaced naturally

Non-renewable resource: a resource of value that cannot be readily replaced by nature as fast as we use it

Sulphur: a chemical that smells like rotten eggs, and is a natural resource of BC

In- class activities:

Here are some ideas to help prepare your class for the program, and to continue the learning back in the classroom.

Pre-visit:

1. In this program, we'll be talking about oil. While this is a term we have probably all heard and used, this short video can help your students understand what oil actually is. There are some larger vocabulary words, but the graphics are very clear and support the narrative.
 - a. <https://www.youtube.com/watch?v=zaXBVYr9Ij0>
2. If your students have never seen images of an oil spill, you can introduce the event through these videos below. The first one (a) utilizes simple but clear animations, and asks some broader questions about our use of oil in general. The second (b), while beautifully animated using live painted watercolors and collage, does sample interviews from actual scientists and oil spill experts. They use complex vocabulary and don't always explain them. It would be better suited for older students, or for a post-video comprehension check.
 - a. <https://www.youtube.com/watch?v=nshSoLw0tdI>
 - b. <https://thekidshouldseethis.com/post/deepwater-horizon-oil-spill-where-did-the-oil-go>
3. Oil is used in so many more ways than just factories and cars! While we'll be focusing on this during the program, get your students thinking about this with the infographic below. It summarizes various common items in our lives made using oil-based materials. Have students look at the graphic and either circle or list all of the products that they or their family uses. It's probably going to be quite a list!
 - a. <https://32zn56499nov99m251h4e9t8-wpengine.netdna-ssl.com/wp-content/uploads/2017/07/Oils-Many-Uses-ENG.pdf>

Post visit:

1. In this program we talked about how oil and products are imported around the world, and touched briefly on the whether all products are strictly necessary. The Story of Stuff Project is a great resource for this topic. This is a San Francisco-based organization that fosters honest conversations about our consumption-based culture. They have made quite a few animated movies (see below), as well as run study programs and campaigns.
 - a. Here is the original video, made in 2007. As a US organization, it does reference US politics a couple times, but the content is very applicable to Canadians. This 20-minute video examines the "underside of our production and consumption patterns. [It] exposes the connections between a huge number of environmental and social issues, and calls us together to create a more sustainable and just world."
 - i. <https://www.youtube.com/watch?v=9GorqroigqM>
 - b. They have many other award-winning "Story of" movies, all high-quality and fact-filled.
 - i. <https://www.storyofstuff.org/movies/story-of/>
 - c. Their website is a treasure-trove of resources, tools and links.
 - i. <http://storyofstuff.org>

2. Continue to explore the difficulty of cleaning up oil with this hands-on experiment. Students will pour oil into water and utilize various methods to attempt to clean it up. There are plenty of versions of this experiment you can find online, one of them is linked below. Make sure to add food coloring to your oil, though, to make it easier to see.
 - a. <https://www.science-sparks.com/clean-it-up-oil-spill-experiment/>