

Wandering Waters

A Fraser River Education Kit for Grades 3-5

A collaborative effort of:

Samson V Maritime Museum

Irving House Historic Centre

Fraser River Discovery Centre

School District #40 (New Westminster)

Fraser River Port Authority

November 2000

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AWRA, Water Resource Education Poster

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New Westminster Walking Tour Brochures, *Downtown*

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Wandering Waters

Places to Visit Along the Fraser River

*Bring your class on a field trip to **Irving House Historic Centre, the Samson V Maritime Museum and the Fraser River Discovery Centre.***

*Use the **Wandering Waters** kit to introduce students to the many exciting concepts they can explore both at these facilities and in the classroom.*

Participate in the fabulous programs offered through these great institutions. Book your tour today!

The Samson V Maritime Museum

Moored on the Fraser River at Westminster Quay

604-522-6894

Have a grand tour of this intriguing vessel and walk through some of the Fraser River's nautical history. Learn about how this historic sternwheeler and other working ships contributed to the development of communities along the Fraser.

Students will be led through activities, which will inspire their imaginations and help them to develop a first-hand knowledge of life on the Fraser.

Classes will create an engine room "soundscape", trace historical and modern day events along the river, and take turns captaining the ship in the wheelhouse.

Irving House Historic Centre

302 Royal Avenue, New Westminster, BC

604-527-4640

Book a guided tour of the house and experience the pioneer life of a riverboat captain first hand. Visit the Archives and examine early archival material documenting the growth and development of New Westminster.

Introduce students to research skills that don't involve a computer! Put your hands on the past and explore primary resources. Look up old photographs, newspapers and journals. Compare how people lived yesterday and today.

View community records such as the Irving family scrapbooks. What do they reveal about pioneer life? Learn how to build your own class scrapbook. What will it say about you and your times 50 years from now?

Fraser River Discovery Centre

788 Quayside Drive, New Westminster, BC

604-521-8401

Come and get involved in our hands-on activities! This brand new facility features loads of room for learning through play and experimentation.

See some thought-provoking films in the theatre. Get environmentally friendly (and a little messy too) as you and your class identify and track non-point source pollution on our interactive Lower Fraser pollution model. Learn where pollution comes from, some of its effects and where it ends up. Demonstrate your knowledge by building your own model at home or back at school!

Take a riverside walk and discover some amazing Fraser Facts from the colourful interpretive signs along the boardwalk. Watch the life of the river unfold before your eyes.

Splash

River Science for Inquiring Minds

Explore different properties of water such as density, buoyancy and insolubility.

Learning Outcomes From the Science IRP

The following four lively experiments connect to the Grade 4 learning outcomes. Students will discover the various uses of water, its importance and its physical properties.

These experiments are simple and fun and can be conducted at any grade level.

Prime resource location: **Fraser River Discovery Centre**

Experiment 1:

The Science of Silt

Discoveries

This experiment examines water's density in relation to the density of other objects that might be carried downstream, for example silt, debris and earthen materials. Lightweight materials such as crayon shavings, silt and glitter have the same density as water. Because of their similar densities, these materials will not float or sink, but will remain suspended in the water. They will move around at random when the bottle is moved. This experiment illustrates how silt is suspended in water.

Materials Required (not supplied in kit)

- Water
- A large, clear plastic bottle
- Crayon shavings, glitter, metal or plastic confetti, or silt

Methodology

1. Fill the water bottle.
2. Add glitter, crayon shavings or silt.
3. Tighten the cap, shake the bottle and watch particles move in the container.
4. Try different movements and observe the effect it has on the "silt".

Variations

Add other objects to the bottle that will either sink or float. Observe and record how their movements differ from the "silt".

Did You Know?

- 1.2 million cubic metres of sediment and silt are deposited in the Fraser estuary every year.

- If this build-up is not dredged, shipping channels would fill in and water levels could rise above dykes causing flooding.
- Silt taken from the river is sold and used in construction materials; some is dumped in the Georgia Strait in areas selected by Environment Canada.
- Dredging stops between March and June in order to protect fish in their migrating season.
- An 8000-year-old First Nations village was unearthed near New Westminster during excavation for the Alex Fraser Bridge. It was once on the shores of the ocean.

Further Exploration

Discuss what would happen if silt were not removed from the river. Read the Dredging pamphlet included in the kit to learn about the process of dredging.

Experiment Two:

Sink or Swim

Discoveries

Have you ever wondered why certain things will sink while others can float? Anything denser than water, such as a rock, will sink. It pushes down on the water more than the water pushes up on it. Other things like logs can float in water because water molecules push up on them more than gravity pulls them down. This is known as buoyancy.

Flotation happens when the up-thrust of water is in balance with the density of the objects. Things, however, can become waterlogged – that is, weighed down by the water molecules themselves. A log, for example, can reach a point of saturation where it has absorbed water, become denser and can no longer stay afloat.

The log then becomes a deadhead – a log mostly submerged below the surface with only its tip protruding. These are dangerous for navigation and difficult to remove from the water. Silt can also get into the fibres of the log, saturate it and bog it down so it can no longer float upright.

Materials Required

- A deep baking pan
- Water
- Towels for drying off
- Sand
- Various things to float, such as corks, craft sticks, sponges, plasticine, straws, spoons, or paperclips

Methodology

1. Partially fill the baking pan with water.
2. Float various objects in pan. Record which ones float and which ones do not.
3. Change the density of objects by adding more weight to them i.e. float a straw first, then weight it with plasticine at the bottom. Note the differences.
4. Waterlog the straw by plugging one end with plasticine and filling it halfway or more with water. Then seal the top of the straw with another piece of

plasticine. Repeat the waterlogging process, but this time fill the straw completely with sand. Note the differences.

Variations

Make a floating sculpture by gluing many objects together. Have a contest to see which “float” is the most artistic.

Experiment Three:

Oil Slick

Discoveries

Oil and water do not mix. This experiment is intended to get students thinking about the effects that leaking pollutants such as oil into the river can have on habitats and wildlife. This simple experiment illustrates that oil and water are insoluble, meaning they do not mix. Emulsion occurs when soap is added to the mixture. The soap breaks the oil globules into smaller balls of oil, which are still suspended in the water, yet separate from it.

Materials Required:

- A clear plastic bottle with a cap
- Water
- Food colouring
- Baby oil

Methodology:

1. Fill the bottle two-thirds of the way full with water.
2. Add a few (2-3) drops of food colouring.
3. Fill the rest of the bottle with baby oil.
4. Cap the bottle so it won't leak, then swirl, roll and shake it.
5. Observe patterns, record observations.

Variations:

After observing the water, food colouring and oil mixture, add dishwashing liquid to the mixture. Observe and record any changes. Add bits of confetti, silt, glitter or other materials. Shake the bottle.

Further Exploration

Watch the NFB video "*The Blob*" included in the kit. Discuss how pollution travels.

Consider and discuss the following questions:

- Where would oil go if it spilled on the river?
- Who and what would be affected? How many habitats? How many animals? How would it have to be cleaned up?
- Where would the oil come from?

Experiment Four:

Water Off A Duck's Back

Discoveries:

This experiment further examines the concept of how water and some other materials do not mix. It illustrates what happens when detergents are poured directly into the water cycle, in this case the river.

The wax and plastic are water repellent, like a duck's oily feathers. This oil on a duck's feathers repels the water and helps the duck to float. Detergent enables water to stick to greasy materials. Detergent may be fine for washing clothes, but it is actually deadly for the duck.

Materials Required:

- A small plastic bag and fastener
- Wax paper cut into squares about 1"x1"
- A felt pen
- A large pan or bowl of water
- Liquid detergent

Methodology:

1. With the felt pen, draw a duck on the outside of the plastic bag
2. Fill the plastic bag with the pieces of wax paper and fasten the bag securely.
3. Float the duck in the pan and record observations (the duck floats).
4. Add detergent to the water and record observations (the duck sinks).

Further Explorations:

Review the facts in the do-it-yourself guide for building an interactive pollution model included in the kit. Photocopy and hand out the sheet on how to reduce pollution in your own home. Review these concepts with students.

Consider and discuss the following questions:

- What is pollution?

- How does pollution end up in the Fraser River?
- How can you stop pollutants from ending up in the river? What can you do at home?

Memory Lane

Reflections of a Queensborough Pioneer

Explore an early New Westminster community through the recorded memories of an early resident. Share her thoughts about the changes that have taken place in her neighbourhood over several decades.

This segment features an audio interview with Edna Anderson who, when recorded in February 2001, was in her 80's. Edna has lived most of her life in Queensborough, a river community in New Westminster. Edna has published two volumes of poetry and written one collection of historical recollections entitled "Queensborough Reflections".

Learning Outcomes From Social Studies IRP

Grade Three:

Students will learn about the historical development of the Fraser River community of Queensborough in relation to its location and the availability of natural resources. They will be able to understand how technology has affected individuals and the community.

Grade Four:

Students will interpret history through an original oral source. They will be able to compare how people interact with their environment, both in the past and in the present.

Grade Five:

Students will learn how the lumber industry affected life in a Fraser River community, and about different transportation systems in the early part of the century. They will hear first hand accounts of how technology affected life and work.

Activity:

Voices from the Past

Have students listen to Edna's tape in full or in part. Discuss some of the following questions:

- Where is Queensborough?
- Where is the bridge that Edna would have crossed?
- How many more bridges are there today?
- What kind of jobs did pioneers in Queensborough have? Compare them to occupations today.
- How were Edna's school days different from yours? What has changed, what is the same?
- Identify some of the sounds Edna heard growing up. What did they tell you about her community? What are some sounds that you hear around you today? What do they say about your community?
- How was Edna's home heated? How is yours heated?
- Where did Edna shop? What could she buy there? Compare it to a large grocery store today.
- How did Edna keep her vegetables fresh? How do you keep your vegetables fresh today?

Further Exploration:

Ask students to interview a parent, grandparent or another adult regarding their early community memories.

Ask the students to write a story or record the interview session.

If the student's family has recently moved to the community, have the student track the family's history. Discover where they lived before and their reasons for moving. How do they like their new surroundings?

Have students share their discoveries with the class in an oral presentation or in a written format.

River Run

A fun and interactive board game of river learning

Explore heritage, industry and the environment on a journey of discovery along the Fraser River.

Learning Outcomes from the Social Studies IRP

Grade Three

- Students will be able to draw simple interpretations from personal experiences, oral sources, and visual and written records.
- Students will learn about the development of early New Westminster and about the shipping industry along the Fraser River.
- Students will explore how New Westminster developed in relation to its location and resources. They will examine how the river affects human activity.

Grade Four

- Students will analyze how people interact with their physical environment, both in the past and in the present.

Grade Five

- Students will examine factors, such as flooding and debris management, that affect transportation systems along the Fraser River.
- Students will explore the rich variety of vessels that have operated on the Fraser and consider how technology, industry and changing social conditions have impacted on their operation.

How to Play “River Run”

Goal

You are members of different crews who work on various cargo ships on the Fraser River. All crews must navigate their ships up river in order to drop off their cargo at New Westminster Terminus. There is much at stake. Navigate your ship through ports and perils, race your competitors for shipping contracts, and arrive in port first to be awarded the largest shipping contract in Fraser River history.

Game Pieces

Game board, Dice, Game Pieces (5), Captains’ Hats (5), Yellow Question Cards, Green Contracts, Blue Docking Cards, Stories and Photos.

How To Play

1. Read the stories *Peter Comes to Fraser Port* and *Quayside Conversations*. Examine the photos of old New Westminster markets and boats for clues to help you on your journey.
2. Divide the class into crews, one crew for each game piece. You may also choose, when playing in smaller groups, to play individually. Choose a captain for your crew. The captain can wear one of the enclosed Fraser Port caps for the duration of the game.
3. Captains – don your hat and roll the dice to begin the game! The highest roll goes first, and then crews take turns in order, from highest to lowest.
4. All question cards are yellow and should be placed face down. One of the crewmembers from your ship chooses a card and, without turning it over, passes it to another crew to be read by that crew’s captain. Anyone on your crew may answer the question.

NOTE: *The captain should not read the clues right away. See if the crew can answer without help.*

5. If your crew can answer correctly without clues, you can roll the dice and move ahead the designated number of spaces and earn a

Contract. Contracts are printed on green paper and represent various cargoes carried on the Fraser River.

6. If your crew cannot answer, the opposing captain then reads the clues. The correct answer will be underlined. If your crew does not answer correctly, your ship must stay where it is until your next turn.
7. If your crew lands at a dock where another crew's ship is already moored, you must wait for moorage, and miss a turn.
8. If your crew arrives at a landing, the Annacis Auto Terminal, or the Fraser Surrey Docks, you must pick up a docking card, printed on blue paper, and obey the harbour master's instructions.
9. When your ship gets within 6 spaces of the New Westminster Terminus, you must anchor. You must roll the exact number of spaces before you and your crew can dock. When your crew arrives at New Westminster Terminus by landing directly in the Terminus square, you earn a contract.

Once all crews have arrived at the Terminus and delivered their cargoes, tally your contracts. The crew with the most contracts is the top navigation team on the Fraser River and is awarded the prized shipping contract between Canada and Japan.

Peter Comes to Fraser Port

Captain Buddy woke up one Friday morning and looked out his bedroom window. Even though it was a very cloudy, rainy morning he felt happy, and smiled. His brother was coming all the way from Nanaimo for a visit. They were going to watch a basketball game downtown and do all kinds of fun stuff along the Fraser River over the weekend.

After getting dressed, Captain Buddy went downstairs for breakfast. It occurred to him that his big dog Bongo was being unusually quiet. He saw why when he walked into the kitchen. Bongo was lying on the floor, happily chewing on the telephone answering machine.

Captain Buddy groaned and pulled the machine out of the dog's mouth. "I wish you hadn't done that, Bongo. My brother Peter was supposed to leave a message telling me where and when to pick him up." He plugged in the slobber, chewed up machine but the tape that recorded Peter's message had been badly damaged. So all they could hear was his voice saying "boat...sspt...arrive...Friday...sspt"

Captain Buddy sighed and wiped Bongo's slobber off his hands. This was a big problem. How would he ever find out which boat his brother was arriving on? Fraser Port was the third largest port in Canada and there were so many boats in the harbour!

But there wasn't enough time to figure out a solution because it was time to leave for work. Captain Buddy left his house in New Westminster and drove to the docks at Annacis Channel. At the dock, he climbed aboard the Port Fraser, which was the port's harbour patrol vessel.

As he untied the vessel from the dock, Captain Buddy thought to himself, "Fortunately, I have to spend all day going around the harbour in this boat, making sure everyone is being safe and helping people understand the rules of navigation. I'll just ask every big boat I meet whether they have any passengers from Nanaimo onboard. One of them must be carrying my brother Peter."

The first ship Captain Buddy saw that day was a tugboat pulling a barge. He waved at the tugboat captain who slowed down so that Captain Buddy could steer alongside. "Hello," he yelled to the tugboat captain over the noise of the engines. "I'm wondering whether you're carrying any passengers onboard? I'm looking for my brother Peter who is coming from Nanaimo today."

The tugboat captain shook his head. "Tugboats don't carry people," he shouted over the noise of the engines. "They usually pull barges, which are vessels with a flat bottom used to ship cargo along the Fraser River. If you look in the barge I'm pulling, you'll see it's full of sand. A cement factory down the river will turn this into cement. But we have to deliver this cargo by lunch so I have to go now." The tugboat headed off down the river.

The next big ship that Captain Buddy saw was a huge deep-sea container ship. It was about the length of a soccer field and was moored at Fraser Surrey Docks. A crane was picking big steel boxes off the ship and lowering them onto the dock. Captain Buddy pulled up behind the vessel and tied up at the dock. He climbed out of his boat and walked over to the container ship's captain, who stood watching the unloading.

"Hello," he said. "I'm looking for my brother Peter who is supposed to come for a visit today. I'm wondering whether you carry any passengers, especially ones from Nanaimo." The captain of the container ship laughed. "Oh no, I don't come from Nanaimo. I came all the way from South America. I brought these containers full of frozen meat, clothes, and coffee, and lots of other things that are sold in stores across B.C. and Canada. I don't carry passengers so I certainly didn't bring your brother to Fraser Port, but good luck finding him." Captain Buddy thanked him, feeling rather discouraged. He watched the crane unloading containers for a few more minutes before climbing back onboard the Port Fraser.

After lunch, Captain Buddy saw a giant ro/ro ship moored at Annacis Auto Terminals. It looked like a huge box, about five stories high, floating on the water. He moored the Port Fraser, climbed onto the dock and went in search of the captain. The ship was so long it took him a couple of minutes to walk to the opposite end of the ship. There, a stream of cars drove off the ship down a ramp and onto the dock. He saw the captain and waved. "Excuse me, sir, but have you seen a man from Nanaimo on your ship? I'm looking for my brother Peter."

The ro/ro ship's captain looked at him, puzzled. "No, I do not take passengers on this ship. This is a ro/ro vessel. They're used for bringing cars and trucks across the ocean. Right now, we're unloading cars made in Korea and Japan and putting them on trucks and trains that will deliver them to stores all over Canada. That's all we carry, I'm afraid. Only cars, not passengers." He started to walk away.

"Hey," called Captain Buddy, can I just ask you one more question? Why is this called a ro/ro vessel?"

"It's very simple," said the captain. "Our cargo 'rolls onboard' and it 'rolls off'. The cars are driven onto the ship at the start of our trip and driven off at the other end." Then he turned and walked away.

Captain Buddy felt very discouraged. He hadn't found his brother's boat and now it was time to go home. He took the Port Fraser back to its mooring and tied up the vessel for the night. He washed his coffee mug and put everything in the boat's cabin away. Then he got into his truck and drove home.

But when he arrived at his house, there was a very big surprise waiting. His brother Peter was standing at his front door, with Bongo and a suitcase at his feet. Captain Buddy parked, got out of his truck, and hugged his brother. "Peter, what are you doing here? I've spent the whole day looking around Fraser Port for you! How did you get here?"

Peter replied, "The weather report said there might be rough seas. Since I get seasick easily, I decided to fly instead. That's what I told you in my telephone message, so why didn't you pick me up at the airport like I asked you? I had to take a taxi here." Captain Buddy groaned. Peter looked puzzled. Bongo barked and wagged his tail. Then they all went inside and had dinner while Captain Buddy told the story of his busy day at Fraser Port.

Story written by Kate Jarvis, Public Affairs, Fraser River Port Authority

November 2000

Source material from Fraser River Port Authority

Quayside Conversations

Captain Buddy and his brother Peter were enjoying lunch at Westminster Quay. The sun shone on the river as they watched the barges and tugs pass by.

"This sure is a busy place," Peter said. "I wonder what it would have been like 100 years ago."

"Just as busy." his brother replied. "The Gold Rush was on in 1858 and people came down with gold fever by the thousands. This was the busiest port on the way to the gold fields.

People were looking to strike it rich—shops, hotels and houses sprang up everywhere. At one point, 300 paddlewheelers were operating on the river, more than on the Mississippi! One captain was said to have travelled with a man who put his money where his mouth was. All of his teeth were filled with gold! Sternwheelers like the one I used to work on were popular. The paddlewheels kept getting stuck in sandbanks further up river. Passengers had to get out and push or swim. The river was like a highway!"

"Did they ever have traffic jams?" Peter asked.

"Oh yes," the Captain replied. "And any number of other worries. There were no bridges at the time, so the only way to get across the river was by ferry. Folks had to share space with other people's cows, goats, pigs and horses and buggies bound for market."

"That must have been noisy as well as smelly," Peter remarked.

"One old timer's favourite story is about the day a bull broke loose as it was leaving the ferry. It went charging up the street. One man tried to distract it by taking his trousers off and waving them about! The bull gave chase through the market. Some local farmers joined in, waving pitchforks and shirts until the bull was cornered. Word had it that the bull went to the first bidder at the auction. There was no way the owner was going to take it back across on the ferry again."

"It seems to rain a lot here too." Peter said, pulling his jacket closer around him. "That must cause problems for boats and property owners. Doesn't the water level rise when it rains?"

"Of course," replied the Captain. "Especially if there is a lot of snow and it melts early if we have a warm spring. Every year we experience the freshet. That's a massive flow of water and sediment that comes downstream from the interior. The river always carries a lot of silt. That's what gives the river its brownish colour."

"Was there ever a big flood?"

"One of biggest was in 1948, when a great deal of damage was done. 16,000 people had to be evacuated and 1,500 people were left homeless. Thousands spent hours filling and hauling sandbags to build emergency dykes. It was a national disaster. People said everything from cattle to kitchen sinks headed towards the Strait of Georgia."

"How do they know it won't happen again?"

"Well, the dykes are inspected regularly and then there is the special dredging program run by the Port Authority. You could say the river has been trained a bit."

"You mean like you'd train a pet?"

"Not quite. Training walls were built along certain parts of the river's main shipping channel. They reduce the amount of silt and sand being deposited on the river's floor by redirecting the flow of water. That means less dredging is needed."

"Why do they dredge?" Peter asked.

"If they didn't, the sediment would rise and push normal water levels higher. Ships wouldn't be able to get through."

"How do they get the sediment out?"

"One kind of dredge vacuums the sand off the bottom and stores it on board. This is called a hopper. Clamshell dredges scoop out sand in tighter areas. They sell the sand for construction. What isn't sold is deposited in the Georgia Strait, in a spot chosen by Environment Canada."

"They sure keep the river clean. Wasn't that part of your job a while back?"

"Yes, when I helped with the Samson V just before it retired. She was a sternwheel snagboat. We kept many a river man free from harm. The boat ran on steam and we'd pull deadheads, stumps and logs out of the river with a huge winch. Now there's a big debris trap in Abbotsford, kind of like a big chain link fence underwater that keeps logs from escaping and tumbling into shipping lanes."

Peter was quiet for a moment, taking in all the information.

Captain Buddy nudged Peter, "Let's go and I'll show you some more. We'll go for a drive and see some of the old landings. They aren't used any more, but they have great historical significance. London Farmhouse is all that's left at London Landing and Ladner's Landing was a very busy area in its time."

"Thanks, I'll have a lot to tell everyone when I get back from this trip!" exclaimed Peter, and they were off on another adventure.

A Fictional Story Written by Lori Sherritt

November 2000

Source Material from the Fraser Port Authority and Edna Anderson

<p>Silt collected by dredgers is:</p> <p>A) Used in construction</p> <p>B) Deposited in the Georgia Strait</p> <p>C) Given to clothing manufacturers</p> <p><u>D) Both A and B</u></p>	<p>The front of a ship is called the:</p> <p>A) Keel</p> <p>B) Stern</p> <p>C) Hull</p> <p><u>D) Bow</u></p>
<p>The stern of a ship is at the:</p> <p><u>A) Back</u></p> <p>B) Side</p> <p>C) Front</p> <p>D) None of the above</p>	<p>This many people were left homeless after the 1948 flood:</p> <p>A) 15</p> <p><u>B) 1,500</u></p> <p>C) 150</p> <p>D) 2,000</p>
<p>This was located at London Landing:</p> <p>A) A fort</p> <p>B) A cannery</p> <p>C) An amusement Park</p> <p><u>D) A farm</u></p>	

<p>Samson V is this type of boat:</p> <p>A) <u>Sternwheel snagboat</u></p> <p>B) Ro/ro boat</p> <p>C) Tugboat</p> <p>D) Paddlewheeler</p>	<p>Samson V is powered by this:</p> <p>A) Gasoline</p> <p>B) Coal</p> <p>C) <u>Steam</u></p> <p>D) Oil</p>
<p>A deadhead is:</p> <p>A) A sandbank</p> <p>B) A dangerous river creature</p> <p>C) <u>A sunken log with only the top protruding</u></p> <p>D) None of the above</p>	<p>Port can be found on this side of the ship:</p> <p>A) <u>Left</u></p> <p>B) Right</p> <p>C) Front</p> <p>D) Back</p>
<p>Starboard is on this side of the ship:</p> <p>A) Left</p> <p>B) <u>Right</u></p> <p>C) Front</p> <p>D) Back</p>	<p><u>These boats are small and strong, and can pull barges up and down rivers:</u></p> <p>A) <u>Motor boats</u></p> <p>B) <u>Kayaks</u></p> <p>C) <u>Barges</u></p> <p>D) Tugboats</p>

<p>The Freshet is:</p> <p>A) An annual event on the river</p> <p>B) Water carrying silt</p> <p>C) A massive flow of water and sediment in the spring</p> <p><u>D) All of the above</u></p>	<p>The great flood along the Fraser was in this year:</p> <p>A) 1962</p> <p><u>B) 1948</u></p> <p>C) 1900</p> <p>D) 1984</p>
<p>A dyke is:</p> <p>A) A new bike for dogs</p> <p>B) A sandbar</p> <p><u>C) A wall, gate, sluice, etc., built to prevent flooding</u></p> <p>D) A city in Holland</p>	<p>A training wall does this:</p> <p>A) Redirects water flow</p> <p>B) Creates less dredging</p> <p>C) Reduces silt deposits</p> <p><u>D) All of the above</u></p>
<p>This is a type of dredge:</p> <p><u>A) Hopper</u></p> <p>B) Clamdigger</p> <p>C) Siltsucker</p> <p>D) None of the above</p>	<p>The debris trap does this:</p> <p>A) Catches fish</p> <p><u>B) Prevents debris from getting downstream</u></p> <p>C) Acts as a local museum</p> <p>D) None of the above</p>

<p>The name of this ship means roll on/roll off:</p> <p>A) Roll Roll</p> <p><u>B) Ro-ro</u></p> <p>C) Ru-ru</p> <p>D) Roly-roly</p>	<p>This ship brings cars to Annacis Auto Terminals:</p> <p>A) Barge</p> <p>B) Row boat</p> <p>C) Dredge</p> <p><u>D) Ro-ro ship</u></p>
<p>This flat-bottomed boat gets pulled by tugs:</p> <p>A) Ferry</p> <p>B) Cruise ship</p> <p><u>C) Barge</u></p> <p>D) Sternwheeler</p>	<p>These ships carry large cargoes in metal boxes from around the world:</p> <p>A) Ro-ro ships</p> <p><u>B) Container ships</u></p> <p>C) Dredges</p> <p>D) Tugboats</p>
<p>This brought a large amount of people to New Westminster in the 1850's:</p> <p>A) A rock concert</p> <p>B) Job opportunities</p> <p>C) Potato famine</p> <p><u>D) The gold rush</u></p>	<p>In 1900 people brought their goods to market from Surrey this way:</p> <p>A) By car</p> <p>B) By dog sled</p> <p>C) By train</p> <p><u>D) By ferry</u></p>

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<p>BAD WEATHER</p> <p>MISS A TURN</p>	<p>SHIP PASSES INSPECTION</p> <p>MOVE AHEAD TWO SPACES</p>
<p>RIVER PILOT EARLY</p> <p>MOVE AHEAD TWO SPACES</p>	<p>TIDE IS WITH YOU</p> <p>MOVE AHEAD TWO SPACES</p>
<p>BERTH AVAILABLE</p> <p>MOVE TO NEXT LANDING</p>	<p>HIT A DEADHEAD</p> <p>MISS A TURN</p>

Pioneer Life

How a river sustains a community

Explore historic documents and photographs to learn about life and business in an early river community

Learning Outcomes From Social Studies IRP

Grade Three

Students will examine the historical development of New Westminster from the 1870's to the early 1920's. They will look at early businesses and the types of advertising used in pioneer communities.

Grade Four

Students will interpret and record information from a variety of historical and contemporary sources. They will determine how people have interacted with their community, in the past and in the present.

Grade Five

Students will analyze how advertising influences people. They will study how merchants used advertising to promote their goods and services. By examining old and new advertisements, they will trace the influence of technology on communities.

Business As Usual

Pioneer Merchants

Travel back in time, to the thriving business life of early New Westminster through historical photographs and documents

Activity: Photo Shop

Examine the historical photographs of early New Westminster businesses. You may choose to divide the class into groups, one group per photograph and have them answer the following questions. At the end of the activity, each group can share their findings with the class.

What kinds of products would the business sell? Who were their customers? How would the merchants order goods? How would the goods arrive in the city? What other kinds of businesses would have existed at the time?

Examine closely the set up of the store or business. How is this different from a modern business?

Look at the customers, clerks and employees in the photographs. How would customer service have been different than it is today? Ask students to use their imaginations and to create their own pioneer business. Have them decide what they would sell and make a list of goods and prices.

Further Exploration:

Ask students to research businesses that existed on Columbia Street in New Westminster between 1900 and 1930.

What did they sell? Where were they located? Is the original building still there today? Is the same shop still there?

Take photographs of the buildings along Columbia Street today. How do these businesses serve the community of New Westminster today? How are they set up differently?

Create a time line that illustrates how Columbia Street has changed in the past 100 years.

Activity: Sales Pitch

Examine the advertisements for local products. Why are there no photographs? What do the pictures and the wording tell us about life in the early 1900's?

Compile a selection of modern advertisements. Compare the historical ads to modern ones. Create a collage filled with modern ads. What do they say about us? Compare costs of goods then to now. Compare images from the past and present.

You own a business on Columbia Street. The year is 1901. Design an ad for some of the goods in your store. Assemble the individual ads created into a class newspaper.

You own a business on Columbia Street. The time is the present. Design an ad that promotes some of your products. Compare these ads to the ones from 1901.