

# Íinaang

# Herring

Grade Levels K-2

## Haida Cultural Significance

Herring have played an integral role in Haida life. They provide food for consumption and trading in the form of fish, oil, and eggs to providing jobs in canneries. Life would not be possible without them. In addition, many of the animals in the ocean life cycle are dependent on herring. The animals that provide Haida people with food need herring for their survival. Herring may not be a primary food source to Haida people; but those foods that we are so dependent on use herring as their primary food. Herring help teach us to respect all life and recognize how we are all linked to one another.

## Elder/Culture Bearer Role

An Elder in the classroom can enrich this unit with personal stories of gathering and preserving herring and herring eggs and therefore help make the lessons more relevant and real to students. An Elder can also help emphasize the importance of respect toward all living things and the respect that is needed when gathering food. He/she also can provide a different perspective on the unit and contribute in ways that may not have been discussed here.

## Overview

In this unit, students discover what herring are, how they live, and how herring are a part of the Haida diet.

### Lesson #1 – What are Herring?

In this lesson, students use their senses to describe the characteristics of herring. A large chart is made as students explore real herring. To finish the lesson, students make herring prints with the real herring. Prints are used in later lessons.

### Lesson #2 – A Herring's Life.

In lesson 2, students explore the life of herring, the life cycle, habitat, food chain, and survival. Learning is done with literature, games, and hands-on activities.

### Lesson #3 - Herring's Life Cycle.

Students discover all the ways in which herring provide food to Haida people. They pretend to cook and preserve herring and herring eggs, all the while showing respect for living things.

### Lesson #4 – Herring Food Chain.

Students learn and identify the animals in the herring's food chain.

A series of elementary level thematic units featuring Haida language, culture, and history were developed in Ketchikan and Hydaburg, Alaska in 2004-6. The project was funded by the U.S. Department of Education, Haida Language Immersion Program - Boosting Academic Achievement grant #S356A030046, awarded to the Sealaska Heritage Institute.

Lessons and units were written by a team including Jordan Lachler, project director and linguist specializing in documenting and revitalizing Native American languages. Lachler heads up the local field office of the Sealaska Heritage Institute in Ketchikan. Cheryl Holter (T'áaw Kúns) grew up in Hydaburg, raised by her grandparents, Willis and Hazel Bell, and has worked with the remaining fluent Haida Elders for years. She taught the Haida language to students since returning to Hydaburg in 1990. Linda Schrack (Skíl Jáadei) grew up in Ketchikan, spending a great deal of time with her grandparents, Robert and Nora Cogo. She worked for many years in the field of early childhood education, and is an accomplished Native artist and traditional Haida dance group leader. Julie Folta, a cultural curriculum specialist with years of experience developing and teaching thematic, child-centered curriculum in rural Alaska, also contributed to lessons, and Annie Calkins edited final drafts of the units.

All units are available online at:  
[www.sealaskaheritage.org](http://www.sealaskaheritage.org).



Sealaska Heritage Institute



Lesson #5 – A Haida Way of Life.

Students explore the traditional and contemporary means of gathering and preserving herring.

## Background Information

Pacific herring live along the American west coast from San Diego to the Bering Sea and in Japanese coastal waters. They are silvery with bluish sides. Mature herring can be as large as 18 inches but the average is 9 inches long.

Herring spawn in the spring and eggs hatch in about two weeks. Juvenile herring live together, separated from adults in shallow bays and inlets, until they are about 2-3 years old, when they join adult herring in the ocean to feed. Mature herring will return to shallow areas to spawn, which may or may not be where they were born. They then return to the ocean to feed. The average life of a herring is 8 years. Herring spend their days in deeper water and come closer to the surface in the evening.

## Alaska State Standards

English/Language Arts

A1) Apply elements of effective writing and speaking; these elements include ideas, organization, vocabulary, sentence structure, and personal style

Science

A14a) Understand the interdependence between living things and their environments

A15) Use science to understand and describe the local environment

B1) Use the processes of science; these processes include observing, classifying, measuring, interpreting data, inferring, communicating, controlling variables, developing models and theories, hypothesizing, predicting, and experimenting

Math

A3) Perform basic arithmetic functions, make reasoned estimates, and select and use appropriate methods or tools for computation or estimation including mental arithmetic, paper and pencil, a calculator, and a computer

A4) Represent, analyze, and use mathematical patterns, relations, and functions using methods such as tables, equations, and graphs;

Cultural Standards

A4) Practice their traditional responsibilities to the surrounding environment

C1) Perform subsistence activities in ways that are appropriate to local cultural traditions

D1) Acquire in-depth cultural knowledge through active participation and meaningful interaction with Elders;

## Lesson #1

### What are Herring?

#### Objectives

Students:

- Learn the physical characteristics of a herring.
- Apply their 5 senses to describe what they see, feel, smell, taste, and hear.
- Haida words and phrases that pertain to this lesson.



## Time

- Activity #1 - 20-30 minutes
- Activity #2 – 20 minutes
- Activity #3 – 20 minutes
- Activity #4 – 20 minutes
- Activity #5 – 20 minutes
- Activity #6 – 20 minutes
- Activity #7 - 30-45 minutes
- Activity #8 - 30-45 minutes
- Activity #9 - 60 minutes

## Materials

- Herring poster
- Real herring
- Different colored pieces of paper
- Sand paper
- Lemons and sugar
- Cookies
- Linoleum block print ink (Speedball)
- Stiff paint brushes
- Lemons
- Newsprint paper

## Teacher Background Information

- Herring have a blue-green upper body with silver sides, no markings.
- Herring can grow to be up to 18 inches in length but 9 inches is considered large.

## Haida Vocabulary

<b>gin sgid</b>	something red
<b>gin guhlahl</b>	something blue
<b>páabaa</b>	black pepper
<b>sgáal nagáay</b>	honey
<b>gin xáwlaa</b>	something sweet
<b>gin k'áywahl</b>	something sour
<b>kíl gaagáa</b>	a weak voice
<b>kíl tláats'gaa</b>	a strong voice





## Haida Phrases

<b>Gin sgid HI ḱinggang.</b>	I see something red.
<b>Gin guhlahl gw d́ang ḱing?</b>	Do you see something blue?
<b>Páabaagaay hl sgún-gwdang.</b>	Smell the black pepper.
<b>Sgáal nagáay hl k'ugwdáng.</b>	Taste the honey.
<b>Gin xáwlaa uu íijang.</b>	It's something sweet.
<b>Gám gin k'áywahl is'ánggang.</b>	It's not something sour.
<b>Dáng kil gaagáagang.</b>	Your voice is weak.
<b>Dii kil tláats'gaagang.</b>	My voice is strong.

## Activity #1 Our senses

- Gather students and discuss senses.
- Brainstorming with the students, make a chart that names different senses across the top, and then a list of describing words under each (e.g. 'bright', 'smooth', 'sweet', 'loud', etc.). Be sure to explain that words like "good" or "bad" are not describing words.
- If students get stuck, give them well known examples to describe—such as an orange or bark of a tree.

## Activity #2 What do you see?

Holding up a blue piece of paper and a red piece of paper. Ask the students what they see in Haida.

<b>Gúus uu d́ang ḱinggang?</b>	What do you see?
<b>Gin guhlahl uu HI ḱinggang.</b>	I see something blue.
<b>Gin sgid uu HI ḱinggang.</b>	I see something red.

Continue this with other red and blue objects.



## Activity # 3

### What do you feel?

Ask one student to come up and feel a piece of sand paper or a smooth stone. Ask them what they feel in Haida.

**Gúus uu dánh tlagwdáנגgang?**

What do you feel?

**Gin k'i uu HI tlagwdáנגgang.**

I feel something sharp/rough.

**Gin tl'uust'anáa uu HI tlagwdáנגgang.**

I feel something smooth.

Repeat with other students.

## Activity # 4

### What do you smell?

Ask one student to come up and smell some honey and some black pepper. Ask them what they smell in Haida.

**Gúus uu dánh sgún-gwdáנגgang?**

What do you smell?

**Páabaa uu HI sgún-gwdáנגgang.**

I smell black pepper.

**Sgáal naǵáay uu HI sgún-gwdáנגgang.**

I smell honey.

Repeat with other students.

## Activity # 5

### What do you taste?

Ask one student to come up and taste a cookie and a lemon.. Ask them what they taste in Haida.

**Gúus uu dánh k'ugwdáנגgang?**

What do you taste?

**Gin xáwlaa uu HI k'ugwdáנגgang.**

I taste something sweet.

**Gin k'áywahl uu HI k'ugwdáנגgang.**

I taste something sour.

Repeat with other students.





## Activity # 6 What do you hear?

Ask one student to come up and listen to a whisper and a loud voice. Ask them what they hear in Haida.

**Gúus uu dǎng gudággang?**

What do you hear?

**Kíl gaagáa uu Hl gudággang.**

I hear a weak voice.

**Kíl tláats'gaa uu Hl k'ugwdággang.**

I hear a strong voice.

Repeat with other students.

## Activity #7 Herring

- Use a real herring and:
- Give each group of 3-4 students a senses chart and a herring. Ask students what they notice about the herring, what do they see?
  - Ask in Haida but allow students to answer in English.
- Students record their observations on a 5 column chart
- To hear herring: [http://www.zoology.ubc.ca/~bwilson/herring\\_sound.wav](http://www.zoology.ubc.ca/~bwilson/herring_sound.wav)
  - What do you hear? Ask in Haida but allow students to answer in English.
- Using real herring from a store or caught fresh, students touch herring and describe what they feel,
  - What do you feel? Ask in Haida but allow students to answer in English.
- Smell the herring and describe the smell
  - What do you smell? Ask in Haida but allow students to answer in English.
- Taste herring in the next activity.

## Activity #8 Yumm, herring

- If you can get fresh herring try eating it.
- Eat herring and describe taste on the chart
  - What do you taste? Ask in Haida but allow students to answer in English.

Herring recipe:

- 10-12 fresh herring
- 1/2 c. oil
- 1/2 c. flour
- garlic or onion salt

Collect herring in early spring, March or April, before the herring spawn. Wash in fresh water. Roll in flour and seasoning. Fry whole on medium heat in oil for 5 to 8 minutes (longer for crispness). Serve hot. Eat with rice. Meat will peel right off backbone. The eggs in the herring can also be added to the rice.



## Activity #9 Herring print

- Use fresh herring or some from the store.
- Clean the outside of herring with lemon juice. Gently wipe clean.
- Let fish completely dry. It's important for a clean and clear print.
- Place herring on newspaper and paint it with ink. Stroke head to tail first and then tail to head.
- Place a sheet of newsprint on top of herring and rub. Be careful not to smudge.
- Gently peel off paper. Wow, you have a nice herring print!
- Each student makes several prints for later use.

## Assesment

Give students the senses form and a new object, possibly another type of fish or various food items and have them fill it out individually. Use the rubric to score their responses.

### Rubric

4 points	All categories have at least 4 describing words. Describing words are unique.
3 points	Most categories have at least 4 describing words. Some describing words are unique.
2 points	Most categories have less than 4 describing words. Some words do not describe. ie- good, bad, ect.
1 point	All categories have less than 4 describing words. Few describing words.
0 points	Not completed.

## Resources included with this lesson

- Herring picture
- Student herring senses chart
- Haida language CD

## Additional Resources

Information about herring sounds: [http://news.nationalgeographic.com/news/2003/11/1110\\_031110\\_herringfarts.html](http://news.nationalgeographic.com/news/2003/11/1110_031110_herringfarts.html)

## Nutritional information

<http://www.nutritiondata.com>



## Lesson #2 A Herring's Life

### Objective

Students:

- Identify where herring live at different times.

### Time

Activity #1 - 30 minutes

Activity #2 - 60-90 minutes

### Materials

- World map or globe

### Haida Vocabulary

<b>iinaang, iinangaay</b>	(the) herring
<b>tang, tangáay</b>	(the) sea, sea water, salt water
<b>tlagáay chaayáay</b>	the shallows

### Haida Phrases

<b>íinangaay t'aláng k'wáayandaa ts'an.</b>	Let's count the herring.
<b>Tangáay gwii hl kínsaa.</b>	Look out at the sea.
<b>Tlagáay chaayáay ii iinaang iijang.</b>	There are herring in the shallows.

### Activity #1

#### A herring's habitat

Discuss that there are different types of herring. Atlantic herring and Pacific herring are two of them. We'll be studying Pacific herring. On a map showing the Pacific Ocean show the range of Pacific herring: San Diego Bay to the Bering Sea and Japan. Ask the class: What things do you do? Do you do them in different places? Herring do too. They feed, spawn, and grow up all in different places. When herring are young they stay with other young herring in bays and inlets while they grow. During the day herring spend their time near the bottom of the ocean. In the evening they move upward toward the surface to feed. Once herring are 3 or 4 years old they lay eggs every year in the spring. They come to shallow areas to spawn. In the winter after spawning they swim to the deeper ocean to feed. Fill in pages of the herring book with drawings of herring in appropriate areas.



## Activity #2 Under sea mural

- On a bulletin board or wall:
  - o Cover area with blue paper.
  - o Students look at pictures in books, magazines, or on the Internet of real underwater pictures.
- Tell students to think about the habitat herring live in and choose creatures or objects that would be in that habitat, and draw them for the mural.
- Students write short descriptions of the mural to display along side it.

## Assessment

- Make a list of times in a herring's life such as; when they are young, when they spawn, when they die, etc. Then on a piece of paper ask students to chose one time in a herring's life, draw and label a picture of the herring's environment and write a sentence to go with the picture.

## Resources included with this lesson

- *Where are the Herring?* Book

## Optional Extension Activities

The web site has facts and information about herring: <http://www.oceanlink.island.net>

## Lesson #3 Herring's Life Cycle

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### Objectives

Students:

- Expand their knowledge of the life cycle of herring.

### Time

Activity 1- 45 minutes

Activity 2- 30 minutes

### Materials

- Chart paper

### Haida Vocabulary

**k'ut'ahlga** to die (pl.)

**sgúngga** to spawn (of herring)

# Herring



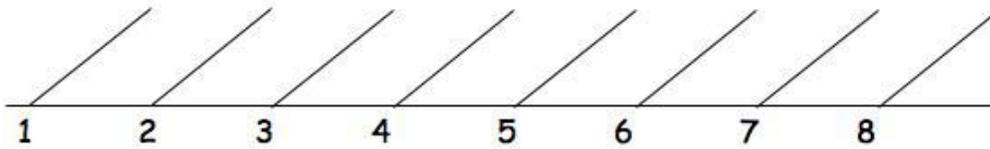


## Haida Phrases

- Íinangaay k'ut'ahlgáang.** The herring have died.  
**Sgúngaang.** The herring are spawning.

## Activity #1 Herring time line

- On chart paper make a time line with 8 slots, numbering each one:



- Explain to students that each line represents a year of life.
- Fill in the slots with what might be typical for students in your class:
  - Year 1- born and learns to walk
  - Year 2- learns to talk
  - Year 3- learns to use the bathroom
  - Year 4- goes to preschool or Headstart
  - Year 5- goes to kindergarten
  - Year 6- is in first grade
  - Year 7- is in second grade
  - Year 8- is in third grade
- Make another time line.
- Fill in the first year with a herring's life
  - Year 1- herring born from eggs, hatch in 10-14 days
  - Year 2-herring live in shallow bays and inlets while they grow
  - Year 3- herring mature and move to the deep ocean to live with other adult herring
  - Year 4- herring spawn for the first time in shallow water
  - Year 5- herring spawn in the spring—may or may not be at same place as in the past
  - Year 6- same
  - Year 7- same



- o Year 8- most herring live to be 8 years old

## Activity #2 Herring life cycle

Discuss with students how herring migrate to different places throughout the year. When herring are young they live with other young herring in shallow bays and inlets. When they mature they move out to the ocean with other adult herring. In the spring herring come in shallow to spawn and then move back out to the ocean to feed and spend the rest of the year. Herring continue this cycle up until they are about 8 years old, when the average herring dies. Students fill in the Herring's Life worksheet with where the herring are during different times of their life and what they are doing.

### Note to teacher:

Elder role: at any time during this lesson Elders should be invited to share stories or help explain the concept of every living thing being dependent on another and that if one animal is over harvested it affects all life.

### Assessment

- Students fill in an individual time line worksheet. Use students' worksheets on life cycle of herring for assessing their knowledge and comprehension.

### Resources included with this lesson

- Life cycle worksheet
- Time line assessment worksheet

### Optional Extension Activities

The web site has facts and information about herring: <http://www.oceanlink.island.net>

## Lesson #4 A Herring's Food Chain: Who eats herring?

### Objectives

Students:

- Identify animals in a herring's food chain.

### Time

Activity #1- 30-45 minutes

Activity #2- 30 minutes

Activity #3- 60-90 minutes



Activity #4- 30 minutes

Activity #5- 60 minutes

## Materials

- Book: *There Was an Old Lay Who Swallowed a Trout!* By Teri Sloat,
- Chart paper
- Pocket chart cards
- Pocket chart

## Haida Vocabulary

<b>chíin, chíinaay</b>	(the) salmon
<b>xúud, xúudaay</b>	(the) seal
<b>sgáan, sgánaay</b>	(the) killer whale





## Haida Phrases

<b>Chiinaay iinangaay táagan.</b>	The salmon ate the herring.
<b>ǂúudaay chiinaay táagang.</b>	The seal is eating the salmon.
<b>Sgáanaay ǂúudaay táasaang.</b>	The killer whale will eat the seal.

## Activity #1 Herring food chain

Read: *There was an Old Lady Who Swallowed a Trout* by Teri Sloat. Discuss what a food chain is animals eating other animals for food. Say; “Herring are part of a food chain right here in Alaska.”

Using the food chain posters provided, introduce the animals of this food chain: Phytoplankton, zooplankton, herring, salmon, seals, killer whales. Discuss concepts of dependency—if one part of the chain is missing the whole thing would fall apart. If there were no herring then salmon wouldn't have any food and they would die, and then seals wouldn't have any food and so on, and so on.

Give students the “Food Chain” pattern provided. (For best results copy on to cardstock or construction paper.) Students can use the patterns to write facts they know about each animal. Staple the chain links together as you would a Christmas tree chain, demonstrating how each animal is “linked” to each other.

## Activity #2 Haida lesson

Use the pocket chart cards to create the three basic Haida phrases shown above. Invite students to come up and switch around the cards to make a new sentence. Discuss which sentences are likely (‘The seal ate the salmon’) and which are not (‘The herring ate the killer whale’).

## Activity #3 Herring food chain book

Once students understand the food chain revisit *There was an Old Lady Who Swallowed a Trout*. Ask students what would be the first animal the lady swallows if she eats the herring food chain. Students should respond with phytoplankton. Continue asking what would come next until reaching killer whales.

Make a list on chart paper of verbs that show what these animals might do. Show the pre-printed pages and demonstrate filling in the blanks of the book. If the child is a boy he/she will write boy on the blank line and if the child is girl he/she will write girl on the blank line. On the first pages students should fill in phytoplankton and chose 2 verbs to use throughout the book. Do page 2 as a class and then let students fill in their own books.



## Activity #4

### A herring's life is a dangerous life

Discuss the question "Besides salmon, what other predators are there to herring?"

Make a list of other animals on chart paper:

- o Salmon
- o Seals
- o Sea lions
- o Killer whales
- o Sea gulls
- o Eagles
- o Humans

Ask, "What else could threaten a herring?" Try to get examples such as:

- o Pollution
- o Crabs and smaller animals could eat eggs before they hatch
- o People could collect eggs before they hatch

Ask, "What do other animals do to protect themselves from dying?"

- o Crabs have a hard shell
- o Porcupines have quills
- o Bears have sharp teeth and claws
- o Deer are fast and quiet

After you have listened to their ideas, ask "What do herring do to help themselves survive?"

- o Lay thousands of eggs at a time
- o Hide in vegetated bays and inlets while young
- o Fast and move in large schools when adults

## Activity #5

### Herring game

- Students make small game pieces out of clay to use as game pieces. Otherwise use a coin, linker cube or bean as a marker.

### Assessment

- Review the assessment worksheet to evaluate the student's knowledge.

### Resources included with this lesson

- Food chain animal wall cards
- Food chain pattern
- *There was an Old Lady Who Swallowed a Trout* Book
- Assessment worksheet



## Optional Extension Activities

The web site has facts and information about herring: <http://www.oceanlink.island.net>

## Lesson #5 A Haida way of life

### Objectives

Students:

- Define subsistence.
- Describe the weight and length range of herring.
- Describe older traditional ways of fishing for herring and more modern ways of fishing.
- Describe how to gather herring eggs and what time of year to get them.

### Time

Activity #1- 15 minutes

Activity #2- 60-90 minutes

Activity #3- 45-60 minutes

Activity #4- 60-90 minutes

### Materials

- Chart paper
- Ruler
- String
- Large paperclips
- Scale
- Ounce weights
- Objects that weigh between 110-160 gm
- Rice or beans
- Ziplock bags
- One inch diameter wooden dowel
- Wooden clothes pins
- Herring prints from lesson #1

### Haida Vocabulary

<b>k'áaw, k'áawaay</b>	(the) herring eggs
<b>hlk'ámaal, hlk'ámalaay</b>	(the) hemlock branch
<b>ngáaal, ngáalaay</b>	(the) broad kelp
<b>hlk'i'iid, hlk'i'iidaay</b>	(the) herring rake

### Haida Phrases

<b>K'áaw t'aláng táa ts'an.</b>	Let's eat some herring eggs.
<b>HLK'ámalaay kináng.</b>	The branch is heavy.
<b>Ngáalaay sgináawgaagang.</b>	The broad kelp is green.
<b>HLK'i'iid hl gya'ánda!</b>	Use a herring rake!



## Activity #1 Subsistence

Discuss the meaning of subsistence. Ask the class where THaida people got food in the past, before stores. Make a list of ways to get food such as hunting for deer, seal, bear, fishing for salmon, herring, gathering berries, beach greens, seaweed.

Discuss what foods we get from herring. See how many ideas students can list, including:

- o Herring can be salted, smoked, boiled, dried
- o Eggs can be boiled, steamed, dried, smoked

Ask the class how herring helps us. Look for answers such as:

- o We can use their oil for lanterns
- o Use them for bait

Summarize with a discussion about why herring were and are important to Haida people.

Elder role: ask an Elder to share stories about gathering food or ways that he/she learned how to gather food.

## Activity #2 Fishing for herring

Discuss as a class: "Have you ever gone fishing? How do you do it?" Allow students time to share stories about fishing. Ask: "What kind of fish did you catch?" (Most will probably say salmon.) Ask: "How many salmon can you catch with one pole and line?" ("one" Ask: "Have you ever fished for herring?" "Are herring large or small?" (Small) "What size hook do you think would be needed to catch herring? Large or small?" (Small.) "What would make sense to use, one small hook on a line or several small hooks at one time?" (Several)

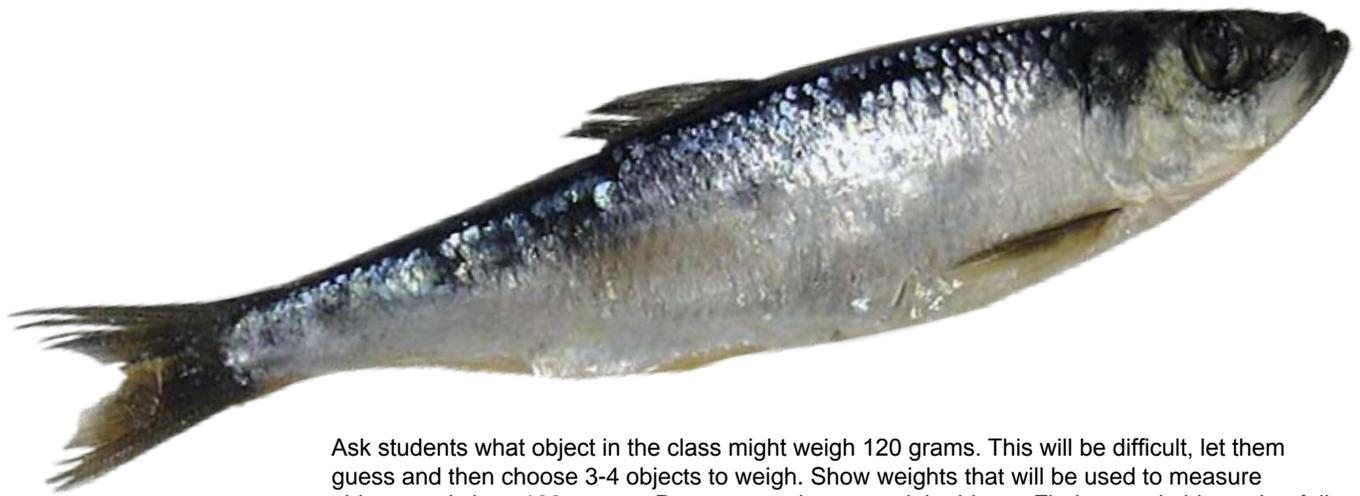
After the discussion, tell the students they will use string and large paperclips make a simulated fishing line and hooks. Have each student tie paperclips about every 12 inches along a piece of string.

Making simulated herring is the next topic of discussion. Talk about "range". Have students line up and ask them "Are you all the same size?" (No) Say: "So, even though you are all kids in the 2nd grade, you are all different sizes." Then, have students line up shortest to tallest.

On a chart paper taped to the wall mark how small the shortest student is. On the same chart paper mark how tall the tallest student is. Ask students "Will every other student in the class fit in between these two marks?" (Yes "So, this is the range of our class. Students in our class range from \_\_\_\_\_ inches tall to \_\_\_\_\_ inches tall."

Ask: "Are all herring the same size?" (No) Tell the students that "Adult herring range from 7 inches to 18 inches long."

On another chart paper measure and mark these lengths to show the range. Say, "These herring also have a weight range. Herring range from 110 grams to 160 grams" Ask students if 140 grams is in that range. Ask if 80 grams is in the range, no. Continue this type of questioning until the class understands the range.



Ask students what object in the class might weigh 120 grams. This will be difficult, let them guess and then choose 3-4 objects to weigh. Show weights that will be used to measure objects and show 120 grams. Demonstrate how to weigh objects. Find several objects that fall into the 110-160 grams range.

Use rice or beans and Ziploc bags to make simulated herring:

- o Students weight out amounts of beans and fill bags making sure the weights fall in the range of 110-160 grams.
- o Make several herring for each pair of students.

Fishing: One student sits behind a table lying on its side to simulate a boat. Throw the fishing line over the edge. The other students attach herring to the line and gently wiggle the line. The fisherman then pulls the line in.

Gather students back together. Ask "How do you think Haida people in the past fished for herring?" After students have had time to share their ideas show picture of a herring rake. Read the description and measure 12 feet in the classroom to show how long it was. Use a wooden dowel and wooden clothespins to make a simulated herring rake using hot glue, glue clothespins to dowel 1 inch apart.

Students practice raking herring with dowel, moving in a motion similar to paddling a canoe. Clip herring to herring rake and try making the raking motion again.

Elder role: Ask an Elder to share fishing stories, describe traditional herring fishing or share recipes.

### Activity #3 Yumm, herring!

Discuss how herring were gathered to preserve for winter use, eaten fresh and to get oil from. The oil from herring was eaten with dried foods during the winter.

**Drying herring:** Pretending you are drying herring, using the fish prints you made in Lesson #1, set up the classroom in to two areas; outside and inside. Cut out herring and string along the gills and hang in the classroom. Herring were hung outside for 2-3 days and then brought inside the house. After hanging herring in the outside area move them to the inside.

**Cooking herring:** Pretending you are cooking herring over an open fire, go outside and gather sticks for roasting herring. Set up a pretend open fire pit with colored paper. Students will make a herring out of cardstock, draw, color, and cut out. Using a hole punch or pencil, pierce the herring drawing in two places and stick the stick through and pretend to roast the herring.



## Activity #4 The herring are spawning!

Herring spawn in the spring. Ask students, “What are the signs of spring? What are the signs that herring spawning?” These are things such as:

- o Seagulls gather and fly around
- o Water turns a milky color

### Gathering herring eggs:

Herring eggs could be gathered on broad kelp or hemlock branches. Go on a walking field trip to collect hemlock branches or kelp, if possible. As you are walking, distinguish between different types of trees, helping students be able to identify hemlock trees by looking at the needles; flat and not very sharp.

Tell the students to gather herring eggs. You would cut down branches, but for us today, we will gather some from the ground to take back to the classroom.

Set up the classroom floor to represent the intertidal zone by having students draw and cut out beach creatures. Decide on

one end of the room to be high tide and one low tide. Using a large piece of paper or fabric one group of students can simulate the water coming in and going out. When the tide goes out students go and place branches on the lowest part of the beach with an anchor, branches tied to a large rock. Students simulate the tide coming in and going out several times.

Discuss how the tide comes in and goes out twice a day and figure out how many times that would be in 3 days. After 3 days branches would be gathered and have herring eggs on them.

If possible, get real herring eggs on hemlock branches and try eating them. To cook herring eggs simmer enough water to cover branches and eggs, dip eggs in simmering water for 30-60 seconds. Peel of branches and eat with seal grease or soy sauce.

Elder role: Ask an Elder to share stories about gathering herring eggs, memories they have or describe the process of gathering and preserving.

### Resources included with this lesson

- Pictures of hemlock branches and broad kelp

