



Éek

BEACH

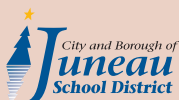
Grade Levels K-1

A series of elementary level thematic units featuring Tlingit language, culture and history were developed in Juneau, Alaska in 2004-6. The project was funded by two grants from the U.S. Department of Education, awarded to the Sealaska Heritage Institute (Boosting Academic Achievement: Tlingit Language Immersion Program, grant #92-0081844) and the Juneau School District (Building on Excellence, grant #S356AD30001).

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Lessons were field tested in Juneau classrooms in 2005-6.

All units are available online at sealaskaheritage.org.



Tlingit Cultural Significance

Since time immemorial Tlingit people have survived using what nature provides. Southeast Alaska has a rich, extensive coastline, so Tlingit people gather numerous beach creatures that nourish them. They in turn respect the creatures of the tides and beaches that sustain them. During winter and early spring, when fresh foods weren't always available, they began the tradition of gathering food from the beaches.

This unit is best suited for the spring because many schools conduct Sea Week/ Month activities during April or May.

Elder/Culture Bearer Role

Elders/Culture bearers enrich this unit through their knowledge of beach creatures and gathering and processing techniques. In addition they can help teach the Tlingit names of beach creatures and enrich the activities with personalized cultural and historical knowledge.

Overview

Lesson #1—Old Woman of the Tides. This Tlingit legend provides a cultural context for learning about inter-tidal sea life. Students listen to the legend, sequence events from the story and retell it to others.

Lesson #2—Introduction to Inter-tidal Zones. Through use of an easy reference book and an interactive zonation game, students learn about the four major tidal zones and different forms of life found in these zones.

Lesson #3—Snails in the Splash Zone. Students listen to a book about life in the splash zone and complete an art activity depicting snails living in this zone.

Lesson #4—Barnacles in the Upper Inter-tidal Zone. Students learn about some of the creatures who live in this zone, play identification games to remember them, use a beach life poster to answer questions in English and Tlingit and make a beach creatures book.

Lesson #5—Hermit Crabs in the Upper Inter-tidal Zone. Students learn about univalves and bivalves that live in this zone, memorize and recite a poem about shells and complete an activity giving a hermit crab a home.



Lesson #6—Sea Anemones in the Mid Inter-tidal Zone. Students learn about some of the creatures who live in this zone and that life in a tide pool includes sea anemones. Students make anemones to add to a classroom bulletin board.

Lesson #7—Sea Urchins in the Mid Inter-tidal Zone. Students build on previous knowledge about life in this zone. After listening to a book about sea urchins, students make simulated sea urchins and add them to the classroom bulletin board.

Lesson #8—Sea Stars in the Low Inter-tidal Zone. Students learn about creatures that live in this zone by listening to a book and playing Beach Creature Bingo.

Lesson #9—Gumboots in the Low Inter-tidal Zone. An Elder and/or Culture Bearer explains and/or demonstrates how gumboots are gathered traditionally and how they are cooked. Everyone may taste a gumboot.

Lesson #10—A Beach Trip. During this field trip to a local beach at low tide, students investigate what they have been learning about in this unit.

Alaska State Standards

English/Language Arts

A1) Apply elements of effective writing and speaking including ideas, organization, vocabulary, sentence structure, and personal style.

A3) In speaking, demonstrate skills in volume, intonation, and clarity.

E1) Use information, both oral and written, and literature of many types and cultures to understand self and others.

Mathematics

A1a) Understand and use numeration, including numbers, number systems, counting numbers, whole numbers, and fractions.

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

Science

A14a) Understand the interdependence between living things and their environments.

A14b) Understand that the living environment consists of individuals, populations, and communities.

A14c) Understand that a small change in a portion of an environment may affect the entire environment.

Cultural Standards

A4) Practice 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.

D3) Interact with Elders in a loving and respectful way that demonstrates an appreciation of their role as culture bearers and educators.

E2) Understand the ecology and geography of the bioregion they inhabit.



Lesson #1

The Old Woman of the Tides

Objectives

Students:

- Listen respectfully and attentively to a legend
- Identify the beginning, middle and end of legend
- Retell a legend

Time

50 minutes

Materials

- Legend: - *Old Woman of the Tides*
- Raven, shark, eagle, Old Woman of the Tides puppets
- Rock shaped like a knife
- Taped or written *Lingít*/English version of the legend
- *Old Woman of the Tides* Illustration Book
- Drawing Paper
- Crayons, markers, or colored pencils
- Popsicle sticks

Vocabulary

Lingít

éek
tlaagú
sh kalnéek lingít'í
kéés'
shawatshaan
yéil
tóos'
ch'áak'
nées'
káas'
lítaa
té
shux'waanáx
a dagiygé
a eet aa
a shú

English

beach
story
characters
tide
old woman
raven
shark
eagle
sea urchin
stick
knife
rock
beginning
middle
next
end

Lingít Phrases

Wé tlaagúde kunayis.aa.
Gunalchéesh tlaagú yís.
Tsú sh kanalheek wé tlaagú.
Waa sá yan kawdiyáa (shux'waanáx)?
Kéés' daak oodaaych.
Kéés' yan oowalaa.

Listen to a story.
Thank you for the story.
Retell the story.
What happened (first)?
The tide comes in.
The tide goes out.



Following a successful group ordering of the illustrations, direct students to complete the activity independently, staple the pictures into a book and (if desired) write about each picture. You might want to pair students to read to each other, pointing to words as they read.

Tell them that they are then going to illustrate their own edition of the Old Woman of the Tides legend. Distribute crayons, markers or pencils and encourage creative illustrations of the story as each child sees it.

Use TPR instructions in Tlingit to guide the students through the activity.

Wé (tlaagú) yahaayí kayshaxít.
(Yéil) yahaayí kayshaxít.
(Ch'áak') yahaayí kayshaxít.

Draw the (story).
Draw a (raven).
Draw an (eagle).

Circulate, commenting on the colors, shapes and designs that children use, emphasizing artistic expression.

Upon completion, and after general comments about what students have produced, students take home their legends to read to their families.

Activity #3

Retelling *Old Woman of the Tides* legend

Students create raven, shark, eagle, and Old Woman of the Tides paper stick puppets. Use TPR instructions to guide the students through the activity.

(Ch'áak') yahaayí adax kei xaash.
(Shawaatshaan) yahaayí adax kei xaash.
Káas' kat kalas'ix'w wé (tóos') yahaayí.
Káas' kat kalas'ix'w wé (yéil) yahaayí.

Cut out an (eagle).
Cut out an (old lady).
Glue the (shark) to the stick.
Glue the (raven) to the stick.

After each child has colored, cut out a set of puppets and glued them to sticks, ask students to practice telling the story of the Old Woman of the Tides to themselves.

Tsú sh kanalneek wé tlaagú.

Retell the story.

After they have practiced by themselves they retell the legend to a partner and later, after additional practice, to another class, an older Reader Buddy, or parents. Encourage students to focus on the beginning, middle and end of the legend as emphasized in Activity #1.

Assessment

As students retell the legend to a partner, note student identification of the beginning, middle and end of the legend.

Optional Extension Activity

Ask individual students to read aloud the Old Woman of the Tides. Ask them simple comprehension questions at the end of the reading.



Lesson #2

Introduction to Inter-tidal Zones

Objectives

Students:

- Learn the names of common beach invertebrates in English and Lingít
- Identify the zone on a rocky inter-tidal beach where each invertebrate is generally found

Time

60 - 75 minutes

Materials

- *Between the Tides*, by Mary Morris A Queen Charlotte Islands Reader, Pacific Educational Press, University of British Columbia, 1987, ISBN0-88865-044-2
- *What Lives in a Tide Pool?*, by Lily Richardson, National Geographic Society, 2003, ISBN-0-7922-4337-4
- Beach creature study prints
- Beach creature paper cutouts
- Game spinners

Vocabulary

Lingít

éek
kées'
téet
l'éiw
té
ka.éix át
laka
léin héeni
léin wooch t'agakóot
téet x'atú
léin tléin
héen kwéiyi
léin wán
éek.ádi
ts'ix'w
s'ook
noow s'áawk'w
tayataayí
nées'
s'áx
shaaw
yabooleit
yéil ts'áaxu
yaak
gáal'
wéix'
yéin

English

beach
 tide
 wave
 sand
 rock
 plants
 tide marks
 tide pool
 beach zone
 splash zone
 upper inter-tidal zone
 mid inter-tidal zone
 low inter-tidal zone
 beach creature
 snail
 barnacle
 hermit crab
 sea anemone
 sea urchin
 sea star
 gumboot/chiton
 cockle
 limpet
 mussel
 clam
 sculpin
 sea cucumber



Lingít Phrases

Daa sá áwú eek?

Daa sá éek aa yei teex'?

Daakw sá léin wooch t'agakóot áyá?

Daa sá (léin héeni) aa yei teex'?

(Nées') goox' sáwé aa yei teex'?

Yáat'aa yei teex' (nées').

Kúnáx áyá akx yei nay.oo.

(Téet x'atú) a kaa yan tí.

What's on the beach?

What lives on the beach?

Which beach zone is this?

What lives in a (tide pool)?

Where do (sea urchins) live?

(Sea urchins) live here.

Put it in the right place.

Put it on the (splash zone).

Teacher Background Information

Inter-tidal zonation can be seen on rocky shores where animal and plant species live in zones or bands of life - *léin wooch t'agakóot*; the splash zone - *téet x'atú*; the upper inter-tidal zone - *léin tlein*; the mid inter-tidal zone - *héen kwéiyi*; the low inter-tidal zone - *léin wán*. While zonation generally occurs in bands, the distinction between zones is not readily apparent on rocky beaches due to the presence of large rocky outcrops and tidal pools.

The zone in which an animal or plant lives depends on its ability to tolerate exposure to air, the sea, wave action and to survive predators. Those requiring only occasional moisture from wave surges or spray and who are more able to withstand exposure to air for long periods without drying out, live in the splash zone and at the upper reaches of the upper inter-tidal zone. This area is more sparsely populated and predators are fewer. Those less able to tolerate exposure to air and more able to withstand the effects of wave action are found at the mid to low inter-tidal zones, although the risk of attack by predators is greater.

Generally, invertebrates living in the splash zone and the upper inter-tidal zone have exoskeletons (shells) to keep them from drying out, being eaten or being crushed by the wave action. Those invertebrates on the lower inter-tidal zones often have soft bodies that absorb wave action, but this makes them more vulnerable to predation.

Invertebrates that live in the splash zone are few in number and variety and the animals are able to move freely about this zone. While the diversity of species of animals living in the upper inter-tidal zone is somewhat greater than that of the splash zone, these invertebrates are less mobile and tend to cluster in groups, often seeking shelter in rock crevices and nooks as well as under rocks.

- splash zone - *téet x'atú*
 - almost always exposed to air
- upper inter-tidal zone - *léin tlein*
 - exposed to air for long periods twice a day
- mid inter-tidal zone - *héen kwéiyi*
 - exposed to air briefly once or twice a day
- low inter-tidal zone - *léin wán*
 - exposed to air a few hours per month



<i>Léin wooch t'agakóot</i> Beach zone	<i>Éek.ádi</i> – Beach Life	<i>Ka.éix át-</i> Plants
<i>Téet x'atú</i> Splash zone <i>Léin tlein</i> Upper inter-tidal zone	Snails (periwinkles) Barnacles Hermit crabs Snails Tide pool sculpin Limpets (some) Mussels	Some algae and lichens Grasses Sea weeds
<i>Héen kwéiyi</i> Mid inter-tidal zone	Limpets (some) Mussels In tide pools <ul style="list-style-type: none"> • Sea anemones • Sea urchins • Sea cucumbers • Hermit crabs 	
<i>Léin wán</i> Low inter-tidal zone	Sea stars Sea urchins Sea cucumbers Some limpets Gumboots - chitons Clams Cockles	

Activities

Activity #1

Reading *Between the Tides*

Before reading, show the class the cover of the book *Between the Tides*, by Mary Morris and tell them the title. Ask them to predict what the book might be about, and what they know about tides. Tell students to listen for names of beach creatures that the children in the story find. Read the book aloud to the class.

Éek.ádi du sáayi gaa kunayis.aax.

Listen for beach creature names.

After reading, ask students to help you list the beach creatures that the children in the book found. On the board or piece of chart paper write a list of the beach creatures that students remember from the story. Ask students what creatures we might find at our beaches in Southeast Alaska. As they suggest what might be found, write the list, placing the creatures' names on a paper according to where they are found; splash zone, upper inter-tidal, mid inter-tidal or low inter-tidal zone.

Daa sá iya.áxch?

What did you hear?

Daa sá áwú eek?

What's on the beach?

Daa sá éek aa yei teex'?

What lives on the beach?

Ask students to hypothesize why you divided the list as you did and record what they say. Ask for questions about life on the beach at different tides.



Activity #2 Explore plants and animals on a beach

Display cloth or paper beach creatures, and provide time for students to independently explore these items, feeling them and examining their details. Encourage students to name those they can and to share those names with other students. Then ask the children to look at photographs of the animals, labeled in *Lingít* and English, and match the cloth/paper creatures with the photographs. Put the labels near the creatures so that individual students can practice placing names in the proper place.

At shí.

At eelgein.

A xooní gaa kuyshee.

Touch it.

Look at it.

Match them/look for a match.

Activity #3 Zonation game

Reread the book from Activity #1, *Between the Tides*.

- Show a beach mat or a paper beach scene you have made/found and relate it to the book you have just read. Talk about and point out the 4 inter-tidal zones - splash zone, high inter-tidal zone, mid inter-tidal zone and low inter-tidal zone. Discuss what the animals living in each zone might require in order to live where they do.

Daakw sá léin wooch t'agakóot áyá?

Daa sá (léin héeni) aa yei teex'?

(Nées') goox' sáwé aa yei teex'?

Yáat'aa yei teex' (nées').

Which beach zone is this?

What lives in a (tide pool)?

Where do (sea urchins) live?

(Sea urchins) live here.

As a group, place the cloth or paper animals on the beach in their appropriate location, discussing as you do so what it is like to live in that region. After this group session encourage individual children to place the animals in the right zones, demonstrating what they have learned.

Kúnáx áyá akx yei nay.oo.

Put it in the right place.

(Téet x'atú) a kaa yan tí.

Put it on the (splash zone).

Assessment

As students participate in the zonation game make note of student accuracy in placing creatures in the right inter-tidal zone. If students are having difficulty, review through additional participation in the game.





Lesson 3

Snails in the Splash Zone

Objectives

Students:

- Learn the names and describe the beach creatures found in the Splash Zone – periwinkles (snails) and barnacles
- Identify and name beach creatures in *Lingít* and English

Time

45 minutes

Materials

- Picture of inter-tidal zones
- *The Inter-tidal Wilderness: A Photographic Journey through Pacific Coast Tide pools*, California Press; Revised 2002, ISBN-0520217055
- Pictures of periwinkles and barnacles
- Grey, green and 9 x 12 construction paper, 1 per student
- Blue construction paper 4.5 x 12, 1 per student
- Snail shaped pasta
- Rubbing alcohol
- Brown or black food coloring
- Glue

Vocabulary

Lingít

téet x'atú

s'ook

ts'ix'w

téet

kées'

té

lawúx yáx yatee

s'agwáat yáx yatee

t'ooch' yáx yatee

English

splash zone

barnacle

snail (periwinkle)

wave

tide

rock

gray

brown

black

Lingít Phrases

Daa sá téet x'atú aa yei teex'?

(Ts'ix'w) téet x'atú aa yei teex'.

(Ts'ix'w) gaa kunaytéés'.

Daa sá ysiteen?

(Ts'ix'w) xwasiteen.

Áyá aakx ákwé?

What lives in the splash zone?

(Snails) live in the splash zone.

Watch for (snails).

What did you all see?

I saw (snails).

Is it in the right place?



Activities

Activity #1

Reading *The Inter-tidal Wilderness: A Photographic Journey through Pacific Coast Tide Pools*

Prior to beginning the reading explain to students that their job is to look carefully so that they will be able to participate in a discussion about the creatures found in the inter-tidal zones.

(Éek.ádi) *gaa kunaytéés'.*
(Ts'ix'w) *gaa kunaytéés'.*

Watch for (beach creatures).
Watch for (snails).

Then open the book and as a group observe and discuss the photos in *The Inter-tidal Wilderness: A Photographic Journey through Pacific Coast Tide Pools*. After looking carefully through the book ask children what they saw and could identify from pictures in the book. As they give answers record their observations.

Daa sá ysiteen?
(Ts'ix'w) *xwasiteen.*

What did you all see?
I saw (snails).

Activity #2

Splash zone art

Prior to this activity place rubbing alcohol, black food coloring and snail shaped pasta in a plastic bag. Close the bag and shake so that the pasta is coated in brown or black food coloring. Place wet pasta on newspapers to dry.

Distribute black and gray construction paper to students. Following the steps below, students make a splash zone picture.

1. Tear the horizontal edge of the blue construction paper - this will look like the tide going in or out. Glue this piece to the green construction (forest background) paper.

<i>X'úx' a shutú ax' nays'éil'.</i>	Tear the edge off the paper.
<i>X'úx' kat kalas'ix'w wé kéés' yahaayí.</i>	Glue the tide onto the paper.
2. Tear rock shapes out of grey construction paper and glue on to the upper section of the green construction paper – the splash zone.

<i>Té yahaayí aadáx nays'éil'.</i>	Tear out rock shapes.
<i>Téet x'atút kalas'ix'w wé té yahaayí.</i>	Glue the rock onto the splash zone.
3. Glue *ts'ix'w* – periwinkle pasta shapes on to the rock.

<i>Té yahaayí kat kalas'ix'w wé ts'ix'w.</i>	Glue the snails to the rock.
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4. Label the *ts'ix'w*.
5. If there is time, ask students to write what they know about snails.
6. Glue their snail on to their writing.
7. Sign the picture.



Assessment

As students are working on the art project, make note of where student are placing periwinkles. If they aren't in the splash zone, redirect the placement. Ask each student to tell you what they know about creatures who live in the Splash Zone.

Áyá aakx ákwé?

Is it in the right place?

Optional Extension Activity

Complete beach creature name match activities included in the Teacher Resources.

A *xooní gaa kuyshee*.

Match them/look for a match.





Lesson #4 Barnacles in the Upper Inter-tidal Zone

Objectives

Students:

- Learn the *Lingít* name for the Upper Inter-tidal Zone – *Léin tlein*
- Learn facts about the beach creatures found in the Upper Inter-tidal Zone – barnacles, hermit crabs, snails, and some limpets
- Follow multi step oral directions in order to complete a project
- Identify and name beach creatures in *Lingít* and English

Time

65 minutes

Materials

- Upper Inter-tidal Zones Beach Creature posters
- Beach Creature Concentration cards
- Construction paper
- Scissors
- Stapler
- Pencils
- Glue
- Crayons
- *Éek.ádi x'úx'u* - Beach Creature Book

Vocabulary

Lingít

léin tlein

s'ook

noow s'áawk'w

ts'ix'w

yéil ts'áaxu

dleit yáx yatee

t'ooch' yáx yatee

alkáa x'úx'u

English

upper inter-tidal zone

barnacle

hermit crab

snail

limpet

white

black

game cards

Lingít Phrases

Daa sá léin tlein aa yei teex'?

(S'ook) léin tlein aa yei teex'.

(S'ook) xaateen.

Gidaan (s'ook) i jeeyéiteeyí.

Yoo ayáx hán (s'ook) i jeeyéiteeyí.

Woosh daséix'un wool.át wé alkáa x'úx'u.

Alkáa ash kanaxtool yát.

Yee x'úx'u naytoow.

What lives in the upper inter-tidal zone?

(Barnacles) live in the upper inter-tidal zone.

I see (barnacles).

Stand up if you have a (barnacle).

Turn around if you have a (barnacle).

Trade cards.

Let's play a game.

Read your books.



Activities

Activity #1 Study print fun

Using the beach creature poster as a display, introduce animals who live in the Upper Inter-tidal Zone. Teach the children the Lingít phrase “*Xwasiteen*” – “I see it.” Tell them the following statements, to which they should point to the creature on the poster and respond in Lingít, “() *xwasiteen*”. After they have done this as a group, you may ask individual students to point to each creature when you ask the question, answering in Lingít as they do.

I see a beach creature that lives in a white shell.
Dleit yáx nóox' atoo yéi yateeyí eek.ádi xaateen.

I see a creature that looks like a hat.
S'áaxw yáx yateeyí eek.ádi xaateen..

I see a beach creature that ravens like to eat.
Yéil du x'éi yak'éiyi eek.ádi xaateen.

I see a beach creature that lives in a brown shell.
S'agwáat yáx nóox' atoo yéi yateeyí eek.ádi xaateen.

Activity #2 Showing what we know using TPR

Give each student a beach creature poster. Tell the class the following statements, asking them to respond appropriately:

<i>Gidaan (s'ook) i jeeyéiteeyí.</i>	Stand up if you have a (barnacle).
<i>Yoo ayáx hán (s'ook) i jeeyéiteeyí.</i>	Turn around if you have a (barnacle).

Do the same for each creature. To reinforce learning, ask students to trade cards and then repeat the activity.

Woosh daséix'un wool.át wé alkáa x'úx'u. Trade cards.

An Elder or Culture Bearer might be able to name the creatures in Lingít, and check for student comprehension of the Lingít vocabulary words.

Activity #3 Playing Go Fish or Concentration

Divide students into small groups, and using the sea creature cards, explain how to play “Go Fish”. Ask if any students know how to play this game. Either you or a student can demonstrate how to play the game. Have small groups play the game for a designated period of time, while you circulate, noting which students are able to name the creatures in English and/or Lingít.

<i>Alkáa ash kanaxtool yát.</i>	Let's play a game.
<i>Astéix nagú.</i>	Go fish.
<i>(S'ook) gé i jeewú?</i>	Do you have a (barnacle)?
<i>Woosh yaayí ax jeewú.</i>	I have a pair.



As an alternative, explain to students how to use the sea creature cards to play a game of “Concentration”.

<i>A kat isanati</i>	Concentration
<i>A kat xat sayati.</i>	I remember.
<i>A kat age i sayati?</i>	Do you remember?
<i>A kat ax seiwax'aakw.</i>	I forgot.
<i>Yoo ayax ti we alkaa x'ux'u.</i>	Turn the card over.
<i>A xooni awé.</i>	It's a match.

Activity #4 Éek.adí x'ux'u - Beach Creature book

Hand out a copy of the Beach Creature book to each student and give the following oral directions.

X'ux' yei naxtusanéi. Let's make a book.

“You are going to make a book. Listen carefully to the five things you need to do.”

<i>A kaax' yaa nalxaash.</i>	First, cut along the cut lines on your paper.
<i>X'ux' ayax yaa koojél.</i>	Second, collate the pages.
<i>X'ux' a shuwú aax' kaylak'wat.</i>	Third, fold the pages in half.
<i>Wooshx kadultáax' wé x'ux'.</i>	Fourth, staple the pages together.
<i>Yee x'ux'u naytoow.</i>	Fifth, read your books.

Ask student pairs to repeat the five directions to one another. Students then create their own books. Once the books are created, have the students practice reading them to each other.

Tell students to take the books home and read them to their families.

Assessment

Assess students by having them independently read the Beach Creatures book included with this unit. Are students able to identify beach creatures in Lingít and English?





Lesson #5

Hermit Crabs in the Upper Inter-tidal Zone

Objectives

Students:

- Learn and practice the names of common beach invertebrates in English and Lingít
- Identify the areas on a rocky inter-tidal beach where each beach creature is generally found
- Learn and recite a poem

Time

45 minutes

Materials

- *Hermit Crab* by Beverly Randell, Petone, N.Z., Nelson Price Milburn, 1994, ISBN 1869555716
- *A House for Hermit Crab* by Eric Carle, Alladin, 2002, ISBN 0689848943
- *Is this a House for Hermit Crab?* by Megan McDonald, Scholastic, 1993, ISBN 0531070417
- *Shells*, by Claudia Kelsey and May Beth Parsons, Alaska Sea Grant Program, University of Alaska, 1980
- Univalve and bivalve shell collection
- Univalve and bivalve shell study prints
- Hermit crab activity page

Vocabulary

Lingít

léin tlein
noow s'áawk'w
s'ook
ts'ix'w
yéil ts'áaxu
gúnxaa
taax'i
yaak
l'éiw
yooka.óot'
at.óow
x'aan yáx yatee
x'éishx'w yáx yatee
nóox'
tléix'
déix
tléix' nóox'
déix nóox'
toolch'án oowayaa
a tlein aa
a k'watsk'u aa

English

upper inter-tidal zone
 hermit crab
 barnacle
 snail
 limpet
 abalone
 operculum
 mussel
 sand
 buttons
 regalia
 red
 blue
 shell
 one
 two
 univalve
 bivalve
 spiral
 a big one
 a small one



Lingít Phrases

Daa sá léin tlein aa yei teex'?

(Noow s'áawk'w) léin tlein aa yei teex'.

(Ts'ix'w) tléix' nóox' a daawú.

(Gáal') déix nóox' a daawú.

Noow s'áawk'w nóox' awahées'.

Kadli.itch' wé gúnxaa yooka.óot'.

Haa at.óowu kaa yei too.ooxx' wé gúnxaa yooka.óot'.

What lives in the upper inter-tidal zone?

(Hermit crabs) live in the upper inter-tidal zone.

A (snail) has one shell.

A (clam) has two shells.

A hermit crab borrows a shell.

Abalone buttons are shiny.

We decorate our regalia with abalone buttons.

Teacher Background Information

Mollusks are one of the largest groups of marine animals. There are five groups of mollusks - squid or octopus, chitons, tusk shells, bivalves and univalves. The squid has no shell.

Bivalves are two-shelled mollusks. They have soft bodies with two shells that cover and protect them. Muscles hold their shells together. When these strong muscles relax, water enters the shell, bringing food and oxygen to the animal. Most bivalves live in the sand or mud and move by means of their foot. Clams, cockles and mussels are common bivalves found in Southeast. Tlingit people enrich their diets in the winter and early spring with these foods. Bivalves are cooked, dried, or smoked. Anyone who gathers beach foods needs to be aware of the dangers of Paralytic Shellfish Poisoning – PSP.

Univalves form the second largest group of mollusks. Univalves are gastropods or stomach foot. The main part of the body is the foot that allows the animal to move. Most gastropods have heads, feelers, eyes and internal organs similar to a clam. Most univalves have a single spiral shell but some can be cone shaped, like limpets. The shape of the spiral varies with each animal. Most univalves have a cover over the shell opening referred to as the operculum, which protects the animal when it is partially extended from the shell. Some common varieties of univalves are limpets, abalone, conchs, and whelks.

Tlingit people gather and eat abalone. The beautiful shells are made into buttons that adorn their regalia. One must know and remember that the dust from abalone shells is poisonous – button makers cut the button under water so they don't inhale the deadly fumes. Limpets and whelks have been used as survival foods. There are Tlingit clan stories passed down for generations that tell us how these beach foods helped villages survive during times of famine.

Activities

Activity #1

Reading about hermit crabs

Read aloud one of the recommended books on hermit crabs to the class and discuss types of shells in which hermit crabs make their homes. Record children's ideas about shells on a whiteboard or easel paper and post in the classroom to review throughout the unit, checking for correct factual information.

Noow s'áawk'w nóox' awahées'.

A hermit crab borrows a shell.



Activity #2 Univalves and bivalves

Use a classroom shell collection or the study prints in the Resources as the basis for a classroom discussion. Pass around different shells so that students can discover and learn to identify the different types of shells found along Southeast Alaska beaches.

Aax gatí wé (noow s'áawk'w)
Du jeet tí wé (nóox').

Pick up the (hermit crab).
Pass the (shell) to him/her.

Discuss similarities and differences in shells. Students may sort shells according to similarities. This might be an “open sort” where students create the groups and label them, or it might be a “closed sort” where students group shells according to attributes prescribed by you. For example, a “closed sort” might ask students to sort based on number of parts, size, shape etc..

Ch'oo shóogu yáx gé yatee?
Woosh guwanyaade yáx gé yatee?
Yaa yeeygích wé nóox'.

Are they the same?
Are they different?
Sort the shells.

Students begin to understand that shells are classified as univalves and bivalves. They complete a “closed sort” of the shells, using the vocabulary “univalve” and “bivalve”.

(Ts'ix'w) tléix' nóox' a daawú.
(Gáal') déix' nóox' a daawú.

A (snail) has one shell.
A (clam) has two shells.

Ask students, “What type of shell would make a good home for a hermit crab?” The discussion should lead students to understand that hermit crabs make their homes in univalve shells.

Activity #3 Making homes for hermit crabs

Use the hermit crab activity page in the Resources. Explain that the picture is of a hermit crab with no shell. The hermit crab is looking for a home. Ask students to draw and color a home for their hermit crab. Students then cut out their crab with its shell and add it to a classroom bulletin board.

Néil eeteenáx yatee wé (noow s'áawk'w)
Nóox' yahaayí kayshaxít.
Kei xaash wé noow s'áawk'w.
Éek x'éen kat kaylas'ix'w wé (noow s'áawk'w).

The hermit crab needs a home.
Draw a shell.
Cut out the hermit crab.
Put the (hermit crab) on the beach mural.

Activity #4 Learning a shell poem

Gather children as a group to learn the following poem. Ask them to repeat it several times initially and repeat it over several days.

FIVE LITTLE SEASHELLS

Five little seashells lying on the shore,
Swish! went the waves, and then there were four.
Four little seashells cozy as could be!
Swish! went the waves, and then there were three.



Three little seashells all pearly new;
Swish! went the waves, and then there were two.
Two little seashells sleeping in the sun;
Swish! went the waves, and then there was one.
One little seashell left all alone
Whispered “Shhhhh” as I took it home.

Perform the poem to another class, an Elder or ask students to recite the poem to their families.

Assessment

As students complete Activity #3, note student understanding that univalves are a single spiral shell, and that bivalves have two parts to the shell.

Extension Activity

Invite an Elder/Culture bearer to bring in regalia or artifacts decorated with shells for the students to observe. Button robes are a classic example, but many things may be decorated with shell. Abalone is inlaid into carvings. Bentwood boxes are often inlaid with rows of operculum shells. Shells are also attached to many objects as charms or rattles.

Explain to the students that buttons are often made from shell. In traditional Tlingit custom, buttons are a symbol of wealth, abalone buttons are especially prized. Have students sort out the abalone buttons from a mixed assortment.

If time and materials allow, have the students complete a small art project decorated with buttons.





Lesson #6

Sea Anemones in the Mid Inter-tidal Zone

Objectives

Students:

- Learn and practice the names of common beach creatures found in the Mid Inter-tidal Zone
- Learn the name of sea anemone in English and Lingít
- Identify the area on a rocky inter-tidal beach on which each beach creature is generally found

Time

60 minutes

Materials

- *Life in a Tide Pool*, by Allan Fowler, Children's Press, 1996, ISBN 0-516-26083-9
- *What's in the Tide Pool?*, By Anne Hunter, Houghton Mifflin Company, 2000, ISBN 0-618-01510-8
- Toilet paper or paper towel rolls
- Scissors
- Red, purple, green tissue paper
- Recycled newspapers
- Pipe cleaners
- Scissors
- Glue
- Large black or gray construction paper

Vocabulary

Lingít

héen kwéiyi
tayataayí
yaak
yéil ts'áaxu
léin héeni
nées'
yéin sea
noow s'áawk'w
té
t'l'eegí
daa
x'éi
s'oow yáx yatee
x'aan yáx yatee
kanat'á kahéeni yáx yatee.

English

mid inter-tidal zone
 sea anemone
 mussel
 limpet
 tide pool
 sea urchin
 cucumber
 hermit crab
 rock
 tentacles
 trunk/body
 mouth
 green
 red
 purple



Lingít Phrases

Daa sá héen kwéiyi aa yei teex'?
(*Tayataayi*) *héen kwéiyi aa yei teex'.*

What lives in the mid inter-tidal zone?
(Sea anemones) live in the
mid inter-tidal zone.

Tayataayi t'l'eegí kaasixák.
Tayataayi tléil nóox' a daa.
Daakw aa tayataayi daa.ádi sáyá?

Sea anemone's tentacles sting.
Sea anemones have no shell.
What part of the anemone is this?

Teacher Background Information

Sea anemones look like flowers, but are predatory animals. These invertebrates don't have a skeleton. They live attached to firm objects in the ocean - the sea floor, rocks or coral. They slide around very slowly. Sea anemones live a long time.

Sea anemones have a symmetrical, column shaped body. At the top of the column is the mouth, surrounded by tentacles. The tentacles protect the anemone from prey with stinging capsules and help catch food; fish, mussels, worms and zooplankton. Sea anemones grow to various sizes. They are usually 1 - 4 inches long but some may grow up to 6 feet. They are various colors of green, red, and purple.

Teach the class the Lingít word for sea anemone and have them practice saying the word as a group and individually.

Activities

Activity #1

Reading *Life in a Tide Pool*

Read *Life in a Tide Pool*. This is a wonderful introduction to beach animals found in tide pools of the Mid Inter-tidal zone. Discuss the book, making sure to introduce sea anemones. This is also a good opportunity for students to review what they already know about other sea creatures who live in inter-tidal zones.

Activity #2

Let's make sea anemones

Remind students that sea anemones come in many sizes and colors. Students create 1 or 2 anemones each, to add to the bulletin board displaying the hermit crabs previously made. Students will begin to see that they are creating a colorful classroom beach scene fully populated with a variety of animals.

Tayataayi yáx yei naxtusanéi.

Let's make a sea anemone.

Use paper towel tubes for this activity. Pass out one tube per student and ask the children to cut their tube in halves (they do not have to be even sizes).

A shoowú kei xaash.

Cut it in half.

Students stuff both halves with torn up pieces of recycled newspaper.

A too yei na.oo wé x'úx'.

Stuff it with paper.



Glue around the outside of each tube and wrap tissue paper around the tubes.

A daat kals'ix'w wé x'úx'.

Glue paper around it.

Distribute 3 - 4 pipe cleaners to each student – these will serve as the sea anemone tentacles. Students place the pipe cleaners in the top of each sea anemone.

Wé tleegí atoodéi latsoo.

Insert the tentacles.

As students are making their anemones ask questions about the nature and environment of sea anemones. You might ask, “What part of the sea anemone are you working on?” “Why is that part important to the life of the sea anemone?” “Is that the trunk or the tentacles?” etc.

Daakw aa tayataayí daa.ádi sáyá?

What part of the anemone is this?

After the anemones are dry, students made a rock out of torn black or gray construction paper. The rocks and anemones are attached to the class bulletin board. Label one or more of the anemones in Lingít.

Kei xaash wé té yahaayí.

Cut out a rock.

Té kat kalas'ix'w wé tayataayí.

Glue the anemone to the rock.

Éék x'éen kat kaylas'ix'w i tayataayí.

Put your sea anemone on the beach mural.

Assessment

As students place their sea anemone on the classroom bulletin board, ask them to tell you at least one thing they know about sea anemones and ask students to name the animal in Lingít.





Lesson #7 Sea urchins in the Mid Inter-tidal Zone

Objectives

Students:

- Learn the names of common beach creatures in the Mid Inter-tidal Zone
- Learn that a sea urchin is an echinoderm
- Learn and/or practice the names of beach creatures in English and *Lingít*
- Identify the area on a rocky inter-tidal beach on which each beach creature is generally found

Time

65 minutes

Materials

- *Sea Urchins* (Animals Without Bones Discovery Animals), Rourke Publishing 1996, ISBN 0866255702
- *Sea Urchins* (Ocean Life), by Adam R. Schaefer, Capstone Press 2006, ISBN 0736882227
- *Sea Urchins* (from the Tiny-Spiny Animals) by Lola M. Schaefer, Heinemann Library 2004, ISBN1403432457
- 2-3 inch Styrofoam balls
- Tooth picks
- Red, green and purple paint
- Paint brushes
- Recycled newspapers

Vocabulary

Lingít

héen kwéiyi

nées'

nées' k'átsi

yaak

yéil ts'áaxu

léin héeni

tayataayí

yéin

noow s'áawk'w

té

nóox'

woosh yaayí

kejín yatee yeix' daawdudzhát

x'aan yáx yatee

s'oow yáx yatee

kanat'á kahéeni yáx yatee

English

mid inter-tidal zone

sea urchin

spines

mussel

limpet

tide pools

sea anemone

sea cucumber

hermit crab

rock

shell

pair

five sided

red

green

purple



Lingít Phrases

Daa sá héen kwéiyi aa yei teex'?

(Nées') héen kwéiyi aa yei teex'.

Goox' sáwé yei teex' (nées')?

Nées' adaa nóox'u du daawú.

Nées' k'áts'i lik'áts' áwé!

What lives in the
mid inter-tidal zone?

(Sea urchins) live in the
mid inter-tidal zone.

Where do (sea urchins) live?

A sea urchin has an outer shell.

Sea urchin spines are sharp.

Activities

Activity #1

Reading a sea urchin book

As an introduction to sea urchins read one of the recommended books on sea urchins, and discuss with students using questions such as “Where do sea urchins live?” “What other animals live in that zone?” “What do sea urchins look like?” “Has anyone ever seen a sea urchin?” etc.

Explain to the class that sea urchins are *echinoderms*. They are shiny, hard-shelled animals living on the rocky sea floor or in tide pools on sandy rocky beaches at low tides. They are red, purple and green.

Adult sea urchins have five-sided radial symmetry. They have long spines that spread out from the body. The spines are used for protection, for moving, and for trapping drifting algae to eat. Among the spines are five paired rows of tiny tube feet with suckers that help with moving, capturing food, and holding onto the sea floor. Sea urchins eat kelp, decaying matter, algae, dead fish, sponges, mussels, and barnacles.

Introduce the Lingít word for sea urchin, and ask students to repeat the name.

Activity #2

An Elder visits to talk about sea urchins

Invite an Elder or Culture Bearer in to talk to the class about the traditional gathering techniques for sea urchins. Before she/he arrives ask the children what they would like to know about how Tlingit people gather sea urchins. Record their questions on the board or on a large piece of chart paper, to spur conversation when the visitor comes. In addition ask the visitor to talk with students about the nutritional values of sea urchins and how Tlingit people use sea urchins. If possible, ask the Elder to tell a personal story about gathering sea urchins. Following the Elder’s visit each student tells one thing that he/she learned about sea urchins. Use these comments to make a thank you card to send to the Elder.

Activity #3

Making sea urchins

Prior to class cut Styrofoam balls in half and cover a large work area with newspaper since this painting activity can tend to be messy.

Nées' yáx yei naxtusanéi.

Let’s make a sea urchin.



Tell students that they will make sea urchins to add to the bulletin board. Point to the board and ask them to tell about the creatures that are already on the board. Ask them how sea urchins are different from sea anemones in size, color, texture, function etc.

*Nées' adaa nóox'u du daawú.
Nées' k'áts'i lik'áts' áwé!*

A sea urchin has an outer shell.
Sea urchin spines are sharp.

Model how to paint a Styrofoam ball using red, green or purple paint.

*A daa naynéegwal' wé néés'.
Wáa sá iwnéegwal'?
X'aan yáx yatee a xwanéegwal'.*

Paint the sea urchin.
What color did you paint it?
I painted it red.

When painting is complete, insert toothpicks to simulate sea urchin spines. If you have discussed the symmetry of urchins, encourage students to place toothpicks in a symmetrical manner.

*Nées' k'ats'i atoodéi isigóo.
Jinkwat' sheeltin!*

Insert the urchin's spines.
Be careful!

When their sea urchins are dry students add them to the classroom beach bulletin board. Label one (or more) of the urchins in Lingít.

Éek x'éen kat katoolas'ix'w wé néés'.

Let's put the sea urchin on the beach mural.

Assessment

Prior to adding their sea urchin to the classroom bulletin board ask individual students to tell you or a friend the name for sea urchin in Lingít and 1 or more things about sea urchins. Record individual student knowledge.





Lesson #8

Sea stars in the Low Inter-tidal Zone

Objectives

Students:

- Learn the names of common beach creatures in the Low Inter-tidal Zone in English and *Lingít*
- Understand that a sea star is an echinoderm
- Identify the area on a rocky inter-tidal beach where sea stars are generally found

Time

45 minutes

Materials

- *Stars of the Sea* (Rookie Read-About Science), by Allan Fowler, Children's Press 2000, ISBN 0516270575
- *Sea Stars* (Ocean Life), by Lola M. Schaefer, Capstone Press, 2006, ISBN 0736882219
- Red, green, orange construction paper
- Red, green, orange sand
- Scissors
- Sea star shapes
- File Folders or cardstock paper
- Marker or pencil

Vocabulary

Lingít

léin wán
s'áx
nées'
yéin sea
yéil ts'áaxu
shaaw
gáal'
yalooleit
kejín
a jini
waak
l'éiw
a kaax
kanat'á kahéeni yáx yatee
s'oow yáx yatee
shéix'w yáx yatee
dook
x'úx' x'éidaa

English

low inter-tidal zone
 sea star
 sea urchin
 cucumber
 limpet
 gumbot
 clam
 cockle
 five
 its arm
 eye
 sand
 pattern
 purple
 green
 orange
 skin
 sand paper



Lingít Phrases

Daa sá léin wán aa yei teex'?

(S'áx) léin wán aa yei teex'.

Keijín a jini s'áx has du jeewú.

S'ax jini kuxdéi kei kana.éin!

X'úx' x'éidaa yáx s'ax doogú jee kdinook.

What lives in the low inter-tidal zone?

(Sea stars) live in the low inter-tidal zone.

Sea stars have five arms.

Sea star's arms grow back!

Sea star's skin feels like sand paper.

Activities

Activity #1

Reading about sea stars

Read aloud one of the recommended books or any other book that has pertinent information about sea stars. Lead a classroom discussion about sea stars. Include the following:

- Sea stars are also called starfish.
- Sea stars are echinoderms (spiny-skinned animals).
- Most sea stars have five arms– or a multiple of five arms - that radiate from a central disk or body.

Keijín a jini s'áx has du jeewú.

Sea stars have five arms.

- On the bottom of each arm are hundreds of tiny tubes, called tube feet.
- Each tube is a sucker- that helps sea stars move around.
- Sea stars move very slowly.
- Sea stars don't have brains but do have nerve cells that send information to their bodies.
- At the tip of each arm sea stars have light sensors or eyes.
- If a sea star's arm is cut off it grows back.

S'áx jini kuxdéi kei kana.éin!

Sea star's arms grow back!

- Sea stars are carnivores – meat eaters.
- Sea stars eat clams, cockles, mussels, oysters, barnacles, limpets, fish and other animals.
- Sea stars can be found in many colors. The most common colors are purple, green and orange.
- Sea star bodies are rough and feel like sand paper.

X'úx' x'éidaa yáx s'ax doogú jee kdinook. Sea star's skin feels like sand paper.

Ask if anyone has seen a sea star, or touched one. Let individual students tell about their experiences with sea stars. Remind the “audience” to listen with respect – one of the traditional Tlingit values.

If you have live or preserved sea stars allow the students to gently touch them. Explain that their rough skin protects them in place of a shell.

Wé s'áx dookt shí.

Daa sá jee idinook?

Kasix'áx'w yáx jee kdinook.

Touch the sea star's skin.

What do you feel?

It feels rough.



Teach the Lingít word for sea star and ask students to repeat it. Ask students to recall other Lingít words for beach creatures they have made for their bulletin board.

Activity #2 Making sea stars

Prior to class make sea star templates using the patterns provided in the Resources. Patterns allow students to easily trace sea stars onto construction paper.

S'áx yáx yei naxtusanéi.

Let's make a sea star.

Model for the class how to trace and cut out a sea star shape. Direct students to do so.

S'áx kaax adaa kayshaxít.

Trace the sea star pattern.

Kei xaash wé s'áx yahaayí.

Cut out the sea star.

When shapes are cut, put glue on the body and each arm. Sprinkle sand onto the body and arms, to give the stars a rough texture.

S'ax jíni kat kaylas'ix'w wé l'éiw.

Glue sand on the sea star's arms.

As they are finished, put the stars in a safe place to dry. The next day the stars can be added to the classroom beach bulletin board. At least one of the stars should be labeled in Lingít.

Éek x'éen kat katoolas'ix'w i s'áxu.

Let's put your sea star on the beach mural.

Activity #3 Beach Creature BINGO

Use the BINGO cards and game piece callers to play Beach BINGO (included in Resources). This will allow students to practice animal names in Lingít and English. This is also a good way to assess student knowledge.

Alkáa ash kanaxtool yát.

Let's play a game.

Kayshaxít a dagiygé aa.

Mark the center one.

Kayshaxít xwasaayí aa.

Mark the one I say.

Kejín yáx kasixat.

Five in a row.

Yaa xwadlaak!

I win!

Assessment

Prior to attaching sea stars to the classroom beach bulletin board, each student tells a partner something he/she knows about sea stars. Quiz students, noting their responses about the Lingít name for sea stars and other beach creatures.



Lesson #9

Gumboots in the Low Inter-Tidal Zone

Objectives

Students:

- Learn names of common beach creatures found in the Low-Inter-tidal Zone in English and *Lingít*
- Learn that sea gumboots are a traditional Tlingit food
- Identify the area on a rocky inter-tidal beach where gumboots are generally found

Time

45 minutes

Materials

- Freshly gathered gumboots or
- Jarred gumboots donated from a classroom family
- Hot plate
- Cooking pot
- Bamboo or metal steaming rack
- Spoons
- Knife
- Napkins
- Crackers
- Smoked clams





Vocabulary

Lingít

léin wán
s'áx
nées'
yéin sea
yéil ts'áaxu
shaaw
gáal'
yalooleit
át yaa awunéi
nas'gadooshú
nóox'
lítaa
kasa.ée
at xá
t'ooch' yáx yatee
x'aan yáx yatee
s'agwáat yáx yatee
kadlich'áchx
daak dliigaas'

English

low inter-tidal zone
 sea star
 sea urchin
 cucumber
 limpet
 gumboot/chiton
 clam
 cockle
 respect
 eight
 shell
 knife
 cook
 eat
 black
 red
 brown
 spots
 stripes

Lingít Phrases

Daa sá léin wán aa yei teex'?
(Shaaw) léin wán aa yei yateex'.
Nas'gadooshú yatee a tunóox'u wé shaaw.
Nóox' naytoow.
Ch'a tlákw at yaa ayageení.

What lives in the low inter-tidal zone?
 (Gumboots) live in the low inter-tidal zone.
 Gumboots have 8 inner shells.
 Count the shells.
 Always be respectful.

Teacher Background Information

Chitons are **mollusks**. Gumboots are one of the largest chitons in Alaska. Tlingit people have eaten steamed gumboots for centuries. Tlingits focus their attention when steaming gumboots. If they are overcooked, they are hard to chew – imagine chewing on a piece of tire. After steaming chitons you run a spoon or knife down the spine to remove the plates. Once the plates are removed run your finger down the spine to remove any remaining shell pieces.

Chitons curve their bodies to adapt to the shape of rocks. They hold on to rocks very tightly. It is impossible to pry them off with bare hands; you need a knife to dislodge them. Chiton crawl slowly on their muscular foot. They have eight overlapping plates on their backs and these eight plates are the chitons' shells. These plates allow chitons to roll themselves into balls – protecting themselves from prey.

Chitons are black, red, and brown in color. Some chitons have spots and stripes of many colors.



Activities

Activity #1 Elder Visit

Prior to the Elder visit gather some gumbots or collect some jarred gumbots for the Elder to use. Getting fresh gumbots allows the Elder or Tradition Bearer to demonstrate traditional cooking techniques for gumbots. Ask the Elder to talk to students about traditional gathering times and the tools used. Ask him/her to tell a story about a time he/she remembers about gathering gumbots with a family.

Ask the Elder to cook and clean fresh gumbots. He/she will steam the gumbots in steaming basket inside a water filled pot. The Elder will explain to students that the gumbot curls up – not unlike when protecting themselves from their prey.

<i>Shaawdáx na.óos' wé l'éiw.</i>	Wash the sand off the gumbots.
<i>Shaaw gatoosa.ée.</i>	Let's cook gumbots.

Once the gumbots have curled they are removed from the pot and the eight back plates are removed.

If there are enough gumbots to go around, students can scrape the back plates out with a spoon. If not, the Elder can demonstrate how to scrape the plates in front of the class. Have the students count the shells to make sure they are all removed.

<i>Kaxtoolnóox'ákw.</i>	Let's remove the shells.
<i>Nóox' naytoow.</i>	Count the shells.

Introduce the Lingít word for gumbot – *shaaw* - and have the class practice repeating it.





Activity #2 Eating mollusks

Students should understand that gumboots are a traditional Tlingit food. In addition they need to understand that Tlingit people believe everything has a spirit which means we must show respect for everything that nature provides.

Shaaw gatooxaa.

Let's eat gumboots.

Tell the class that each person is expected to try a small taste of the gumboots your guest has cooked. As a snack, pass out a taste of gumboot and baby smoked clams along with a cracker.

Ch'a tlákw at yaa ayageení.

Always be respectful.

Explain there should not be any rude remarks because that would be disrespectful. As they taste the gumboots ask children to describe the taste and compare it to other sea creatures and/or fish they have eaten. Ask them comparative questions about taste, texture, size, etc.

After the snack ask the class to contribute to a thank you card for the visiting Elder/ Tradition Bearer using *Lingít* and English words.

Assessment

Each student writes 2 sentences about the steps of cleaning and cooking gumboots that he/she learned from the Elder or Culture Bearer.





Lesson #10 Beach Field Trip

Objectives

Students:

- Find and investigate the inter-tidal zones where beach creatures are found
- Record observations inter-tidal findings

Time

4 – 5 hours

Materials

- *I Went to the Beach* mini-book in *Lingít* and English
- Beach activity book
- Pencils
- Sandwich size ziplock bags

Vocabulary

Lingít

éek.átx'i
s'áx
yéin
yabooleit
noow s'áawk'w
k'áach'
yéil ts'áaxu
yaak
nées'
tayataayí
s'ook
shaaw
ts'ésx'w
gáal'
léin héeni
wéix'
yan uwaláa
yan kát uwadáa
x'úx'

English

beach creature
sea star
sea cucumber
cockle
hermit crab
ribbon seaweed
limpet
mussel
sea urchin
sea anemone
barnacle
gumboot/chiton
snail (whelk)
clam
tidepool
sculpin
low tide
high tide
book



Lingít Phrases

Éekdei gaxtoo.áat.
Kaa yáa kei ayagaxtoonéi.
(Éek.átx'i) aḡaa kugaxtooshée.
Wooshteen nay.á.
Té a t'ayee ax' anayeelgín.
A eetí kúxdei yan tí wé té.
At eelgein!
Daa sá kaḡ keeyashee?
Daa sá tléil kaḡ keeyashee?
(S'áx) kaḡ kuxwaashee.
(Wéix') tléil kaḡ kuxwaashee.
Woosh kaanáx gaxtuda.aat.
(Nóox') naytoow.
Daak nadéin.
Yei naléin.

We are going to the beach.
 We will be respectful.
 Go look for (beach creatures).
 Stay together.
 Look under rocks.
 Put the rocks back in place.
 Look at this!
 What did you find?
 What didn't you find?
 I found a (sea star).
 I didn't find a (sculpin).
 Gather together.
 Count shells.
 The tide is coming in.
 The tide is going out.

Activities

Activity #1 Creature Search

Make arrangements to walk or take a bus to the beach for a half-day field experience. Invite and encourage an Elder or two to join the class on this outing. They will add a wealth of traditional knowledge as children investigate a local beach environment. This trip should, of course, be during a low tide. The lower the tide, the more students will see.

At the beach gather students in a central meeting place. Discuss the beach environment and any dangers to avoid. Have students take note of where the tide is. Point out areas like small points of land that become islands when the tide comes in. Have students watch for changes in the tide throughout the activity.

Daak nadéin.
Yei naléin.

The tide is coming in.
 The tide is going out.

Share pictures of beach creatures you expect to see on this outing. Explain that the students' job is to check off each beach creature they find in the pocket book that you will give to them. Have students point out the different beach zones and predict which creatures they will find in each area.

Divide students up into small beach explorer groups.

Wooshteen nay.á.

Stay together.

Prior to starting their beach exploration remind students to be respectful. Remind them that their goal is to leave the beach in the same condition as it was when they arrived. For example, if anyone turns over a rock to find creatures, they **MUST** put the rock back in the very same location.

A eetí kúxdei yan tí wé té.

Put the rocks back in place.



Encourage students to use the Tlingit names and phrases with each other as they search for beach creatures.

At eelgein!

Daa sá kax̣ keeyashee?

(S'áx) kax̣ kux̣waashee.

Look at this!

What did you find?

I found a (sea star).

After a designated period of time gather all students back in the central meeting area.

Woosh kaanáx̣ gax̣tuda.aat.

Gather together.

As time allows, talk about what was found, what was most interesting and what observations they made.

Daa sá tléil kax̣ keeyashee?

(Wéix') tléil kax̣ kux̣waashee.

What didn't you find?

I didn't find a (sculpin).

Activity #2

Recording beach creatures found

Upon returning to the classroom, students complete the beach trip activity book included in the Resources. Circulate around the room asking questions about their experiences at the beach and clarifying any misunderstandings about the creatures they saw/found.

Students share their books and what they learned about the creatures of the tides with each other in class and then with their families at home.

Assessment

Check student beach activity books to assess individual student knowledge and understanding of beach life. Meet with each student and ask questions about the contents of his/her book. Check students' knowledge of Lingít names for beach creatures.

