

Nisga'a Fisheries: Marine Conservation Youth Stewardship Lesson Plan

Date Fall 2009

Unit Overview

Title: A British Columbia Teacher Curriculum Guide for the theme: Marine Ecosystems, Habitat Protection & Conservation, and Abalone Species at Risk.

Lesson: Build an Underwater Viewing Chamber (Water Scope) & Tidal Pool Habitat and Ecosystem Art Session

Arts and Crafts Lesson: Students will enjoy making this underwater viewing chamber to see aquatic snails, seaweed, and other marine organisms when they visit the beach on low tide! We used recycled large coffee tins to make a large underwater viewing chamber. Remember to use waterproof tape or else the plastic wrap will come off.

This craft takes only a few minutes to make. Have the students use the remainder of the time for this session to draw, paint, and colour their own "Tidal Pool and Beach Marine Habitat Ecosystem Art" that they might see on their field trip to the beach!

<http://www.squiglyplayhouse.com/ArtsAndCrafts/Crafts/WaterScope.html>


Squigly's Water Scope

What you need:

- ✓ Empty juice can (large)
- ✓ Can opener
- ✓ Water proof tape (duct tape)
- ✓ Elastic band
- ✓ Clear plastic food wrap

What you do:

1. Ask an adult to help you remove both ends of the can.
2. Carefully tape over sharp edges.
3. Tightly put plastic wrap over one end of the can.
4. Secure the plastic with elastic, and then tape edges of plastic to can.

 Now you are ready to watch some water bugs. Make sure you only submerge the end of the can with the clear plastic. What do you see?

Nisga'a Fisheries: Marine Conservation Youth Stewardship Lesson Plan

Lesson Summary: In this lesson the students will practice environmental stewardship which is one of "The Seven Paddles of Our Ocean Canoe". This is a chance for the students to reuse coffee and orange juice cans to make an underwater viewing camera for their field trip!

A wealth of marine information will be gained by the students as they discuss and look at the supplemental resources of books, marine photo cards, colouring book, and "Sea Life" felt set. To enhance their learning experience, the students will express themselves with art. They can draw, paint, colour and create their own "Tidal Pool and Beach Marine Habitat Ecosystem Art"!

Subject Area(s): Environment and Sustainability Across BC's K-12 Curricula: Science, Language Arts, Fine Arts: Visual Arts

Grade Level: Our summer camp chose to host students 6-12 years old in age. This unit is designed for teachers to adapt the unit for elementary, middle, and high school.

Standards: See Below

BC Ministry of Education Curriculum Prescribed Learning Outcomes:

Science:

- Analyze the roles of marine organisms as a part of interconnected food webs, populations, communities, and ecosystems.
- Describe how the basic needs of marine plants and marine animals are met in their ocean environment.
- Analyze simple food chains.
- Analyze how different marine organisms adapt to their marine environment.

Visual Arts:

- Create images in response to objects and other ocean and marine images that they have experienced.
- Compile a collection of ideas for marine images drafted using feelings, observation, memory, and imagination.

Language Arts:

- Developing Oral Language (Speaking and Listening) Abilities
- Developing Reading and Viewing Abilities
- Developing Writing and Representing Abilities

Lesson Objectives:

Students will:

- Make an underwater viewing chamber out of recycled materials to prepare for their field trip to the beach and tidal pool.
- Discuss and look at the supplemental resources of books, marine photo cards, colouring book, and "Sea Life" felt set.
- Draw, paint, colour and create their own "Tidal Pool and Beach Marine Habitat Ecosystem Art".

Nisga'a Fisheries: Marine Conservation Youth Stewardship Lesson Plan

Lesson Scope and Sequence: This lesson helps the students to prepare for their field trip to the beach at low tide. When on your field trip, have the students use this underwater viewing chamber to identify marine organisms that live underwater.

These are great ocean visuals that can first be introduced to the students. Once introduced to the students, place the Ocean Animal Clue Cards and Pacific Coast Information Cards on each of the student tables where they can have access to these cards at any time. Photocopy some of the colouring pages from High Tide, Low Tide to give to the students.

We discovered that some of the youth wanted to photocopy the cards to take them home! The youth became experts in ocean and marine biodiversity of animals after using these supplemental resources! When we visited the beach, the students were so excited to be able to identify some of the marine organisms that they looked at in these books and marine photo cards.

As the students gain more knowledge and information about the diversity of marine organisms, their artwork gets better and better each day!

Student Assessment:

- Set criteria and make a fun game of how durable the students think their underwater viewing chamber (scope) will be when actually put to the test of dunking it underwater. Have the students make a hypothesis... When put to the test, I think that my underwater viewing chamber will _____. Did they use enough waterproof tape so that there are no leaks? Did their plastic wrap fall off in the water? How many students think that the water will be clear and transparent to see underwater marine organisms? How many students think that the water will be cloudy and murky?

Lesson Implementation

| Instructional Strategies | Grouping Options | Scaffolds/ |
|---|---------------------------------------|---|
| Anticipatory Set: Have the students use supplemental resources with books, colouring books, ocean animal photo cards, and "Sea Life" felt set. | Individual, pairs, and/or whole group | C:\Documents and Settings\Tracey\My Documents\NF Project 2009\NFAbalone2009\extra resources\Ocean Link Lesson # 4\Nisga'a Fisheries Supplemental Resources_011Jan10_tb.doc |
| Introduce the unit: | Pairs | Students make an underwater viewing chamber (Water Scope). They bring the recycled items from home. |
| Practice: | Individual, pairs, and/or whole group | Students discuss and learn about tidal pool and beach ecosystems by using the supplemental resources. |

Nisga'a Fisheries: Marine Conservation Youth Stewardship Lesson Plan

| | | |
|----------------------------------|---|---|
| Practice: | Individual | Students will practice drawing, colouring, and painting their underwater ocean scene. |
| Homework Assignment: | | No homework for this specific session. |
| Review: | Whole Group | <p>Students share with the class their underwater viewing water scope chamber, and what the predictions they made.</p> <p>Students practice using leadership and self-confidence skills by showing and explaining their art work.</p> |
| Action Project: | Individual | Students show environmental stewardship by bringing recycled materials from home to make an underwater viewing chamber (water scope). |
| Application/Work time: | Individual, pairs, and whole group | <p>Students will use the 1 hour session to make an underwater viewing chamber (water scope), and paint a "Tidal Pool and Beach Marine Habitat Ecosystem Art".</p> <p>They may use more sessions to finish off their artwork.</p> |
| Self-Evaluation and Critique: | | <p>We have provided you with a different website and instructions to make a different water scope than the one we used. Much to our surprise, none of the underwater viewing chambers that the students made in class worked. The plastic tore off.</p> <p>One of our 9 yr old students took the initiative to make one at home. He used many layers of plastic wrap for the viewer, and used a very good waterproof duct tape. This student was so proud that his homemade water scope was the only one that worked!</p> <p>This youth showed environmental stewardship, leadership, and taking action at it's finest!</p> |
| Accommodation Options: See Below | | |
| ELL / IEP Students: | Supervise these students to make sure they provide many layers of plastic wrap for the viewer. Give them any assistance to tightly wrap the waterproof duct tape around the can. | |
| Highly-Capable Students: | Challenge these students to build another underwater viewing chamber (using a different sized can) at home to bring on their field trip. Have them show the class and make predictions of which one they think will have more clarity underwater. | |

Nisga'a Fisheries: Marine Conservation Youth Stewardship Lesson Plan

Management/Organization Tips:

- Provide a can opener, plastic wrap, waterproof duct tape, and cans to every group.
- Art supplies for the remaining time to have an art session. Your choice!
- See "Materials and Resources Required for Lesson" below.

Approximate Time Needed: Ten minutes to organize and make the underwater viewing chamber. This craft is simple and fast to make. For the remaining 50 minute session, have the students look at the supplemental resources. The students can then have art time and draw, colour, and/or paint a tidal pool and beach marine habitat and ecosystem.

Provide additional time if needed for the students to finish their "Tidal Pool and Beach Marine Habitat Ecosystem" art.

Prerequisite Skills: Discuss with the students about different types of marine organisms they may see at the beach during low tide. Support learning visually by showing the books, marine photo cards, colouring book, and felt set.

C:\Documents and Settings\Tracey\My Documents\NF Project.2009\NFAbalone2009\extra resources\Ocean Link Lesson # 4\Nisga'a Fisheries Supplemental Resources_011Jan10_tb.doc

Materials and Resources Required for Lesson:

- See Supplemental Resources below.
- To make the underwater viewing chamber (water scope) use the following items:
 - ✓ Empty juice can (large)
 - ✓ Can opener
 - ✓ Water proof tape (duct tape)
 - ✓ Elastic band
 - ✓ Clear plastic food wrap
- Photocopies of the "High Tide, Low Tide, A Children's Coloring Story and Activity Book.
- Pencil crayons, pencils, wax crayons, felt markers, art paper for drawing and painting on.
- An assortment of paint brushes and a variety of different coloured paints.
- Smocks or old t-shirts for painting.

Adopted and other Audio/Visual: none

Supplemental Resources (including Internet resources):

C:\Documents and Settings\Tracey\My Documents\NF Project.2009\NFAbalone2009\extra resources\Ocean Link Lesson # 4\Nisga'a Fisheries Supplemental Resources_011Jan10_tb.doc

Supplies: See Materials Above

Technology – Hardware (Click boxes of all equipment needed.)

| | | |
|--------------------------------------|---|---|
| <input type="checkbox"/> Computer(s) | <input type="checkbox"/> VCR | <input type="checkbox"/> Projection System |
| <input type="checkbox"/> Printer | <input type="checkbox"/> Video Camera | <input type="checkbox"/> Camera |
| X Digital Camera | <input type="checkbox"/> Scanner (optional) | <input type="checkbox"/> Video Conferencing |

Technology – Software (Click boxes of all software needed.)

Nisga'a Fisheries: Marine Conservation Youth Stewardship Lesson Plan

| | |
|---------------------------------|--|
| | |
| Optional Technology Extensions: | <ul style="list-style-type: none">▪ We like to take lots of digital photos of the youth having fun while they make their arts n' crafts! Take photos of the youth holding their underwater viewing chambers and tidal pool art. Present in a slide show to the youth at the end of the unit theme! |

| Author | |
|---------------------|---|
| First and Last Name | Tracey Bussanich (B.Ed.) – Educator Inspirus Education (Pronounced Inspire Us) |
| Email Address | inspirusgroup@gmail.com |