

Table of Contents

Notes to the Teacher

Lesson 1: An Introduction to the Northern Abalone

Students are introduced to the abalone as a threatened species

Lesson 2: Food Chains and Ecosystems

Students look at the delicate balance of food chains and ecosystems

Lesson 3: Endangered Species

Students discuss what it means to be an endangered species and what can be done to help protect animals that are threatened

Lesson 4: Becoming Abalone Advocates

Students develop student-directed community action projects to help the plight of the abalone

Lesson 5: Reporting Back

Students report back to the Abalone Project via the Bamfield Marine Sciences Centre on the results of their community action projects

Lesson 6: Wrapping it Up

Students reflect on the unit and assess the impact learning about and trying to help a threatened species had on them as learners and would be environmentalist and conservationists

Curriculum Connections

ABALONE ADVOCATES: Notes to the Teacher

Objectives of this Unit

To introduce students to one of British Columbia's threatened species, the Northern Abalone, and for students to become Abalone Advocates in their community through self-directed, community action.

This unit serves the dual purpose of introducing students to the Northern Abalone, a threatened species native to the coast of British Columbia, and promoting environmental advocacy in our students. Students will learn about the complexities of ecosystems and natural balances. Connections are made between human actions and environmental impact and students are given an opportunity to design their own community environmental action to learn that they can make a difference in their communities and the larger world they live in.

What is the Abalone Project?

The Bamfield Huu-Ay-Aht Community Abalone Project is a joint effort between the Huu-Ay-Aht First Nation, the Bamfield Community School Association and the Bamfield Marine Sciences Centre whose mandate is to help protect and restore the declining abalone population. The Abalone Project consists of field studies and research, an abalone hatchery and education and awareness campaigns. By doing this unit, you and your class are taking part of the Abalone Project by increasing education surrounding abalone and why they are a threatened species.

The Abalone Project makes its home base in Bamfield, B.C., a small community on the west coast of Vancouver Island.

Resources

- Abalone Slide Show
- Abalone Odyssey Teacher's Guide
- <http://www.oceanlink.island.net/abaloneproject/index.htm>
- www.cosewic.gc.ca
- www.speciesatrisk.gc.ca
- www.pac.dfo-mpo.gc.ca/comm/pages/consultations/fisheriesmgmt/abalone/AbaloneRecovStrategy_e.htm

Activity 1: An Introduction to the Northern Abalone

Objective

To introduce the students to the Northern Abalone and the Bamfield Abalone Project

Abalone Slide Show

Showing the Abalone slide show as a beginning to this unit introduces the students to Northern Abalone and helps to get the students interested in this species which many of them may not have encountered before. The slide show has pictures of live abalone, abalone shells, an abalone food source, abalone habitat and also introduces the students to the work being done at the Bamfield Hatchery, through the Abalone Project.

(The slide show includes digital photos and a slide show script)

Four Corners Activity

This activity can be done as a closure to the first lesson of the Abalone Advocate unit.

Have four signs put up in the corners of the room labeled, *Strongly Agree*, *Agree*, *Disagree*, and *Strongly Disagree*. Read the statement “it is important for humans to protect abalone” to the class and have them stand in the corner that best matches the way their opinion. Once the students are in their respective corners, have them turn to someone in the group and share why they chose the corner they are standing in. Once the students have had a chance to discuss with the others in the group, have them pick one student to speak as a representative for the group to present their point of view to the rest of the class.

This activity will be revisited at the end of the unit.

Activity 2: Food Chains and Ecosystems

Objectives

To show that all organisms are important and that what affects one life form, affects all others

To understand how changes in the population of one species, affects other species

To generate discussion on food chains and ecosystems

Web of Life

Materials

- ball of yarn,
- ecosystem tags (one for each student, double up if needed): sunlight, water, oxygen, diatoms, plankton, algae, kelp, urchins, abalone, sea stars, otters, killer whales, humans

The Activity

Have the students stand in a circle and tell them that the class is going to make a model of an ecosystem with each person representing an element of the ecosystem and the yarn is to represent the connection between those elements.

Each student gets a tag. Begin the web with the **sunlight**, **water** and **oxygen** tags. Next add the **diatoms**, **plankton**, **algae** and **kelp**. Then add the elements that eat the organisms such as diatoms and kelp, the **abalone** and **urchins**. Next add their predator, the **sea otters**, **sea stars** and **humans** and the sea otter's predator, the **killer whale**. As well, all the organisms need to connect back to sunlight, water and oxygen. Make as many other connections as you can think of and you should end up with a very tangled web with yarn going every which way.

This activity leads into many possible discussion points:

- Are all the elements of the web connected?
- What would happen if we removed or changed one element? (this could be represented by having one group drop their strings or shake their strings to create a ripple effect)
- Can one element be removed without affecting the others?
- What happens when one species is abundant or scarce?

- Who is affected in the food chain?
- What role do humans play?
- Different levels of the food chain
- We may not always understand the links and importance of a species, but each has their place in the web of life

After the Activity

Read about the plight of the abalone (*Why are Northern Abalone Threatened?* page in Abalone Odyssey Teacher's Guide) and discuss how its ecosystem may be affected by their decline. What would happen to the number of their predators? Their food source? This can be done as an individual or small group written response to assess how well the students understood the concepts discussed during the activity.

Activity 3: Endangered Species, an Internet Exploration

Objectives

To review the terms endangered, extinct, threatened

To discuss endangered species in Canada

To explore some of the reasons why species become threatened, endangered or extinct

To discuss what can be done to help species at risk

Introduction

Have the class come up with a definition for what they think it means for a species to be **threatened**, **endangered** and **extinct**. Write the definitions on the board to be revisited later.

The Activity

This activity is to be done with the aid of the internet. Students will explore three Canadian websites that are concerned with threatened and endangered species. Students will learn key vocabulary, **endangered**, **threatened** and **extinct**, and discover more about endangered and threatened species in Canada.

The following questions are to be answered by using these three websites:

- www.cosewic.gc.ca
- www.speciesatrisk.gc.ca
- www.pac.dfo-mpo.gc.ca/comm/pages/consultations/fisheriesmgmt/abalone/AbaloneRecovStrategy_e.htm

If there is time, students may wish to explore other websites with information about species at risk.

Questions for exploration

- What does it mean for a species to be threatened?
- What does it mean when a species is endangered?
- What does it mean when a species is extinct?
- What is COSEWIC?
- What is COSEWIC's mandate?
- What are some other threatened species in Canada? Name five.
- What can be done to help threatened species such as Northern Abalone?

Summing Up

After the students have done their internet research, review the information they have found. Emphasize what can be done to help threatened and endangered species and revisit the class' definitions of threatened, endangered and extinct species.

Activity 4: Becoming Abalone Advocates

Objectives

For the students to come up with an action plan for how they can become Abalone Advocates

Opening discussion

Tell the students that they are all going to become Abalone Advocates. To introduce the concept of becoming Abalone Advocates, the following questions can be used to start a discussion. Have the students discuss the questions in small groups and be prepared to share their opinions with the rest of the class. It may be helpful to define the word 'advocate' first.

- Why might the abalone need advocates?
- Why is it important to help abalone?

From previous lessons the students have learned that abalone are endangered and therefore need help and protection in order to survive. Students could conclude that it is important to help abalone because of the role they play in food chains and ecosystems, because of their economic value to humans, because of connections with traditional coastal First Nations ways of life and because all living things are unique and precious and should be protected whenever possible.

Getting the Ball Rolling

Start by doing a class brainstorm.

What can you do?

Educate other groups in your school or community by...

- A poster campaign
- Presentations
- Video/ public service announcement/ Canadian heritage minutes
- Consumer choices

These are some suggestions; however, the students will be able to take more ownership of the project if the ideas and direction come from them. It is importance for youth to feel that they are able to make a difference in this world

where they see so many problems. If possible, act more as facilitator and encourage the students to be the directors of their community action projects. This is a great opportunity to encourage leadership from your students.

The Action Plan

Once you have decided on an idea, you need a plan of action. Developing the action plan can be an involved process. Students may want to group off into different committees and each plan a different part of the project or you may wish to develop your plan as a class and then designate different groups for different tasks. Good Luck!

Activity 5 Reporting back

Objective

To report back to the Abalone Project on your work as Abalone Advocates

The Report

After doing your Abalone Advocate community action, your next step is to report back to the Abalone Project in Bamfield, British Columbia. You have become a part of a larger Abalone Advocate movement and it is important to share what you have learned and accomplished so that others can learn from you and create their own community action.

This report can take the form of a formal report, a letter or a webpage to be added to the Abalone Project web page (any word document can be saved as a webpage document). Be sure to include the following:

- Who you are (what school are you from, your grade, your city, etc)
- How you found out about the Abalone Project
- What you learned by doing this project
- What you did to become abalone advocates
- What were your challenges
- What was the best thing about doing this project

- Any advice for other groups becoming Abalone Advocates
- Plus, any other information you would like to add

By having students work on the report collaboratively, the communal nature of the project is reinforced and each student continues to take ownership over a portion of the group's work.

Activity 6: Wrapping it up

As a closure to this project, have the students do the same four corners activity they did when the unit was started: "Do you think it is important for humans to protect abalone?" Then discuss the results of the activity.

After the students pick a corner, ask the students to think back to what corner they selected on the first day. If the students changed their corner, why did they change? If the students did not change corners, why not? Doing this activity helps focus both the students and teachers on the process that was undergone during this unit and the impact doing this project made on the students.

Other questions for discussion:

- How were students impacted by this unit?
- What did they learn?
- Will their involvement in this project change how they act or think about environmental issues in the future?
- Did they feel they were able to make a difference? Why or why not?

Extensions:

You may wish students to write a reflection on the unit as another way to end the unit.

Thanks for becoming Abalone Advocates!!!

Curriculum Connections from the Alberta and British Columbia Curriculum Guidelines

British Columbia Curriculum Connections

Science

Grade 5 Life Science (BC's Living Resources)

- identify living resources in the local environment
- describe how humans use BC's living resources
- describe the known and potential environmental impacts of using BC's living resources
- devise a strategy for sustaining a living resource

Grade 7 Life Science (Ecology)

- describe all organisms in terms of their roles as part of interconnected food webs
- describe ways in which species interact with each other
- determine the limiting factors for local ecosystems
- outline the stages of recovery of a damaged local ecosystem

Grade 8 Life Science (Diversity)

- compare the roles and interrelationships of senses in interpreting the environment
- compare and contrast how various organisms have adapted to the conditions in each biome and how these organisms interact with each other

English Language Arts

Grade 4 - Self and society (Community)

- demonstrate a willingness to work with others toward a common goal
- demonstrate an awareness of the diverse languages, ideas, opinions, cultures, and contributions of their peers

- demonstrate an awareness of how to use language to connect their own understanding and experience to those of others

Grade 5 - Self and society (Community)

- demonstrate a willingness to communicate with others to reach common goals within the classroom
- demonstrate respect for the diverse languages, ideas, opinions, cultures, and contributions of their peers
- demonstrate an awareness of how they can use language to display empathy and make connections with others

Grade 6 - Self and society (Community)

- demonstrate a willingness to interact with others in a variety of classroom and school activities involving communication
- use language to display empathy and make connections with others
- describe the diverse ideas, opinions, cultures, and contributions of their peers

Grade 7 - Self and society (Community)

- use language to demonstrate consideration of others' perspectives and to invite participation
- use language to display empathy, acknowledge others' viewpoints, express the value of others' ideas, and invite participation
- demonstrate respect for the diverse languages, ideas, opinions, cultures, and contributions of peers and the wider community
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Grade 8 - Self and society (Community)

- interact purposefully, confidently, and respectfully in a variety of situations

Grade 9 - Self and society (Community)

- interact purposefully, confidently, and appropriately in a variety of situations

Grade 10 - Self and society (Community)

- interact purposefully, confidently, and respectfully in a variety of situations
- demonstrate an awareness of the relationship of language to group and community membership
- acknowledge and paraphrase views that differ from their own and reassess their own viewpoints
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Grade 4 - Communicate Ideas and Information (Composing and Creating)

- share what they know about chosen topics
- gather information for specific purposes and identify sources, including people, print, audio-visual media, and electronic media
- identify the purpose of and audience for oral, written, and visual communications
- apply various strategies to generate and shape ideas

Grade 5 - Communicate Ideas and Information (Composing and Creating)

- identify what they know about topics selected by the class or by groups of students
- identify and use sources of information, including people, print, audio-visual media, and electronic media
- select and shape information appropriately for specific audiences and purposes
- apply various strategies to generate and shape ideas

Grade 6 - Communicate Ideas and Information (Composing and Creating)

- describe what is known about topics or issues and check for gaps in the information available
- locate, gather, select, and record information for specific purposes from various human, print, and electronic sources
- identify the purpose, audience, and form for each of their communications
- describe and use strategies for generating and shaping ideas

Grade 7 - Communicate Ideas and Information (Composing and Creating)

- summarize what they know about specific topics or issues and identify and address gaps in the information available
- locate, gather, and select information for specific purposes from a variety of human, print, and electronic sources
- select a means of organizing information and ideas that is appropriate for their purpose and audience
- use expository and persuasive styles to shape and structure language in stories, character sketches, posters, and other forms of communication
- describe and use strategies for generating and shaping ideas

Grade 8 - Communicate Ideas and Information (Composing and Creating)

- compose or create works of communication for specific audiences and purposes, including to entertain, persuade, or inform
- locate, access, and select relevant information from a variety of sources (including technological sources) for defined purposes
- organize and structure information in a variety of literary, expository, persuasive, and other forms
- identify the purposes and audiences for their communications
- acknowledge sources in their written work
- apply various strategies to generate and shape ideas

Grade 9 - Communicate Ideas and Information (Composing and Creating)

- locate, access, and select appropriate information from a variety of resources (including technological sources)
- analyse the audience and purpose of their writing to make decisions about content and format
- use a variety of planning tools and strategies to focus and organize communications for various purposes and audiences
- apply various strategies to generate and shape ideas

Grade 10 - Communicate Ideas and Information (Composing and Creating)

- demonstrate an awareness of the characteristics, needs, and preferences of specific audiences
- locate, access, and select appropriate information from a variety of resources and consider the quality, currency, and accuracy of each source
- organize their ideas, and adjust their style, form, and use of language to suit specific audiences and achieve specific purposes
- apply various strategies to generate and shape ideas

Grade 4 - Self and Society (working together)

- assume a variety of assigned roles when communicating in groups
- demonstrate a willingness to improve their understanding by seeking clarification from others
- demonstrate respect for others by communicating their ideas and information in an orderly fashion
- listen to and show respect for the ideas of others
- review their contributions and communications within the group

Grade 5 - Self and Society (working together)

- assume a variety of roles when interacting in groups
- use the language of praise and constructive feedback when working with others
- listen to and express interest in the ideas of others
- assess their own communications and their contributions to the group

Grade 6 - Self and Society (working together)

- demonstrate a willingness to assume a variety of roles in group interactions

Grade 7 - Self and Society (working together)

- share responsibility for the effective functioning of groups
- elaborate on others' ideas
- encourage others to participate
- develop strategies for resolving conflict and solving problems

Grade 8 - Self and Society (working together)

- use various strategies to resolve conflicts, solve problems, and build consensus
- evaluate group processes and their own contributions to them by using established criteria

Grade 9 - Self and Society (working together)

- use language to prompt and support others
- use a variety of ways to express their opinions effectively
- use a variety of strategies to solve problems, resolve conflicts, and build consensus

Grade 10 - Self and Society (working together)

- demonstrate their commitment to collective goals
- show a willingness to consider and elaborate on others' ideas or viewpoints
- make effective use of strategies for resolving conflicts, solving problems, and building consensus
- establish and use criteria to evaluate group processes, their own contributions to them, and the results of their work

Alberta Curriculum Connections

Science

Language Arts