

Cultural Connections

Overview

Humans hold special relationships with the natural resources by which they are surrounded. These connections are increasingly being challenged by changing climate patterns, availability of resources, and societal changes. In this activity students will investigate the cultural importance of an Arctic plant or animal. Each student will create a carving and research traditional uses, geographic range, and natural history of an Arctic plant or animal. This lesson was inspired by Sandra L. W. Thornton's experiences as a PolarTREC Fellow/NOAA Teacher at Sea during the Hidden Ocean 2016: Chukchi Borderlands expedition and especially after viewing the beautifully constructed and detailed artifacts at the Anchorage Museum and the Alaska Native Heritage Center, both located in Anchorage, Alaska.






Objectives

Students will be able to describe geographic range, natural history, and cultural importance of an Arctic plant or animal.

Lesson Preparation

This lesson may be used to introduce or assess a unit on ecology, adaptations, or the Arctic. Because students will use their own research when constructing their models, no specialized prior knowledge is needed to begin this lesson. Examples of Arctic carvings may be found at the Anchorage Museum website (<https://www.anchoragemuseum.org>).

Details

-  Lesson
-  Arctic
-  Less than a week
-  Download, Share, and Remix
-  All Ages

Materials

Carving tools (plastic or wood are recommended; plastic knives and spoons may serve as inexpensive alternatives)
Bar soap (Ivory is recommended because it is very soft and easily carved.)
Cardstock or paper for table tents
Markers, colored pencils, and other art supplies
Internet access or other materials to facilitate the research component of the assignment

Instructor should emphasize that students will be assessed on the quality of their research rather than their artistic ability.

Procedure

Initial

1. Students will choose a plant or animal found in the Arctic. Students should be encouraged to choose from plants, birds, marine animals, and land-based animals. Depending upon placement within an instructional unit, students may need to conduct initial research to become more familiar with Arctic plants and animals.

Production

1. Students will conduct research to determine:
 - a. Scientific name, traditional uses, cultural significance, geographic range, and natural history of the plant or animal.
 - b. Students will prepare a table tent display card showing the information for their plant or animal.
2. Students will create a soap carving of their plant or animal. See “Student Handout” for instructions on how to create a soap carving.

Extension

- As an alternative to soap carving, students may construct models using clay, fabric, papier mache’, water colors or other media depending upon student skills and availability of resources.
- Students may choose to research and compare an Arctic plant or animal to a plant or animal that is significant in their home community or culture.
- It is recommended that carvings and display cards be placed in a central area where others may view student work. Libraries, banks, museums, community centers,

Standards

Next Generation Science Standards (NGSS)

This lesson supports the Next Generation Science Standards by challenging students to research Arctic organisms, construct models, and communicate the results of their research.

Elementary School

2-LS4-1 Biological Evolution: Unity and Diversity. Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS4-3 Biological Evolution: Unity and Diversity. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

4-LS1-1 From Molecules to Organisms: Structures and Processes. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Middle School

and local businesses are often willing to display student work.

Resources

- www.polartrec.com
- <https://www.polartrec.com/expeditions/chukchi-sea-borderland>
- <http://www.alaskanative.net/en/main-nav/plan-your-visit/artist-schedule/>
- <https://www.anchoragemuseum.org>

Assessment

Students will be assessed on the quality of their research product. This lesson provides opportunities for students to locate resources and determine the factual merit of these resources. Because the aesthetics of artistic products is subjective, it is recommended that assessment be based on quality and scope of student research. A suggested rubric has been provided with the “Student Handout”.

Author / Credits

This lesson was created by Sandra L. W. Thornton (slwthornton@gmail.com).

MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

High School

HS-LS4-5 Biological Evolution: Unity and Diversity. Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

Cultural Connections

Overview: Humans hold special relationships with the natural resources by which they are surrounded. These connections are increasingly being challenged by changing climate patterns, availability of resources, and societal changes. In this activity you will investigate the natural history and cultural importance of an Arctic plant or animal, and use what you have learned to create a soap carving of the Arctic or Antarctic animal and a display card identifying the organism, scientific name, traditional uses, geographic range, and natural history.

Options:

As an alternative to soap carving, you may construct a model using clay, fabric, papier mache' or other media.

Materials and Equipment:

- Carving tools (plastic or wood are recommended; plastic knives and spoons may serve as inexpensive alternatives)
- Bar soap (Ivory is recommended because it is very soft and easily carved.)
- Cardstock
- Markers, colored pencils, and other art supplies
- Internet access or other materials to facilitate the research component of the assignment.

Procedure:

1. Follow the procedure on the "carving" handout to create your model.
2. Prepare a table tent that includes:
 - a. Organism, scientific name, traditional uses, geographic range, and natural history.
 - b. This table tent will be displayed with your carving and should reflect exhibition-level work. You will be evaluated on the following criteria:
 - i. Table tent includes all required information.
 - ii. Table tent is neat, legible, and attractive.
 - iii. Table tent is suitable for display.

Scoring Rubric

Category	Included & Properly Formatted 3	Included; Improperly Formatted 2	Not Included 0
Organism			
Scientific Name			
Traditional Uses			
Geographic Range			
Natural History			
Life Span			
Food Supply			
Role in Ecosystem			
Special Adaptations			
Fecundity			
Current Threats			
	Standard Met 3	Standard Met; Minor Revisions Needed 2	Standard Not Met; Requires Significant Revisions 0
Table Tent			
Required Information			
Neat, Legible, Attractive			
Suitable for Display			
Total Score			

Soap Carving

1. Preparing the Materials
 - a. Gather carving equipment. Carving tools or metal or plastic cutlery work well. Small wooden skewers and sharpened pencils work well for adding details to the carving.
 - b. Sketch an outline of the plant or animal that will be carved. The outline should fit on the bar of soap.
 - c. Place the outline on the soap and use a pencil to trace over the outline. A small amount of pressure will allow the outline to be impressed into the soap surface.
2. Carve around the outline and then add details. Begin with larger details and then work to finer details. Be sure to shave off any logo that may be on the soap.
3. Use a soft cloth to gently polish the carving.

