



Teacher Guide

for Peabody Museum Class

IGLOOS TO ADOBE

Grades 2–5

60 minutes

Integrates with studies of:

- ✓ First peoples and Native peoples, including the Wampanoag
- ✓ Human interaction with the environment and natural resources
- ✓ Basic needs: food, clothing, and shelter



PEABODY MUSEUM
of **ARCHAEOLOGY & ETHNOLOGY**

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IGLOOS TO ADOBE

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LEARNING OBJECTIVES

- Identify basic needs shared by all humans.
- Explore traditional lifeways in four culture areas of North America: the Arctic, the Southwest, the Northwest Coast, and the Northeast.
- Identify these regions on a map of North America.
- Investigate three different subsistence strategies: hunting, gathering, and agriculture.
- Demonstrate a modern native presence, particularly in the Northeast.
- Explore the link between culture and environment.
- Investigate traditional native technology.
- Utilize artifacts as a research tool.
- Encourage critical thinking.
- Foster an appreciation for our country's indigenous heritage.

MASSACHUSETTS FRAMEWORK CORRELATIONS

A. At the Museum -- “Igloos to Adobe” Class Correlations

History and Social Science Curriculum Framework, August 2003

- Grade 2 Standards 2.6, 2.8
- Grade 3 Standards 3.2, 3.12
- Grade 4 Standards 4.9, 4.11, 4.15, 4.21

Science and Technology/Engineering Curriculum Framework, October 2006

Earth and Space Science

- Grades 3-5 Standard ESS.9

Life Science

- Grade 2 Standards LS.1, LS.8
- Grades 3-5 Standard LS.8

Physical Sciences

- Grade 2 Standard PS.1

Technology/Engineering

- Grade 2 Standards T/E 1.2, 2.1
- Grades 3-5 Standards T/E 2.1

English Language Arts Curriculum Framework, June 2001

Language

- Grades 2-4 Standard 1.1

Arts Curriculum Framework, October 1999

Connections

- Grades 2-4 Standard 9.1

B. Back at School – Teacher Activity Correlations

Snow and Sun

History and Social Science Curriculum Framework, August 2003

- Grade 3 Standard 3.12
- Grade 4 Standard 4.15

Science and Technology/Engineering Curriculum Framework, October 2006

Earth and Space Science

- Grade 2 Standard ES.4

Life Science

- Grades 3-5 Standard LS.8

Physical Sciences

Grades 3-5 Standards PS.5, PS.12

Technology/Engineering

Grade 2 Standard T/E 1.2

Grades 3-5 Standards T/E 2.1, 2.3, 2.4

Local Produce

History and Social Science Curriculum Framework, August 2003

Grade 3 Standard 3.8

Science and Technology/Engineering Curriculum Framework, October 2006

Life Science

Grade 2 Standards LS.6, LS.8

Grades 3-5 Standard LS.1

Mathematics Curriculum Framework, November 2000

Measurement

Grade 2 Standards 2.M.4, 2.M.5, 2.M.6

Grades 3-4 Standards 4.M.1, 4.M.5

Data Analysis, Statistics and Probability

Grade 2 Standards 2.D.1, 2.D.2

Grades 3-4 Standard 4.D.1

English Language Arts Curriculum Framework, June 2001

Language

Grade 2 Standards 1.1, 2.1

Grades 3-4 Standards 1.2, 2.2

Grade 5 Standard 1.3

Composition

Grade 2 Standard 24.1

Grades 3-4 Standard 24.2

Grade 5 Standard 24.3

Comprehensive Health Curriculum Framework, October 1999

Nutrition

Grades 2-5 Standards 3.5, 3.7

Ecological Health

Grades 2-5 Standard 13.1

Home Sweet Home

History and Social Science Curriculum Framework, August 2003

Grade 4 Standard 4.15

Science and Technology/Engineering Curriculum Framework, October 2006

Life Science

Grade 2 Standard LS.8

Grades 3-5 Standard LS.8

Technology/Engineering

Grade 2 Standard T/E1.2

Grades 3-5 Standards T/E 2.1, 2.3

English Language Arts Curriculum Framework, June 2001

Language

Grade 2 Standards 3.1, 3.2

Grades 3-4 Standards 3.4, 3.5, 3.7

Grade 5 Standards 3.8, 3.9

Composition

Grade 2 Standard 25.1

Grade 3-4 Standard 25.2

VOCABULARY

These terms apply to both the museum class and the activities.

Adaptation – A change in body or behavior that allows for survival in a particular environment.

Agriculture – The science of growing crops or raising stock; farming.

Anthropologist – A scientist who studies individuals or groups of humans.

Arctic – A geographic location, encompassing parts of the state of Alaska and parts of Canada, Siberia and Greenland, that is characterized by long, cold winters, brief but mild summers and permanently frozen ground (permafrost). It is the traditional home of many indigenous tribes, including the Inuit and Aleut.

Artifact – Any object made or altered by people.

Basic needs – Five requirements that all animals must meet in order to survive: food, water, air, shelter, reproduction (mates).

Climate – The general temperature and precipitation patterns in a particular area. Climate is usually measured as the average weather over a 30 year period.

Hunting – The process of capturing and killing wild animals for use as food and raw materials.

Gathering – The process of collecting wild plants and other natural resources for use as food or raw materials.

Indian – A term for the original inhabitants of the Americas and their descendants, given incorrectly by European explorers but still used today by many people.

Indigenous – Originating and living in or occurring naturally in an area or environment.

Native Americans – A term sometimes used for the original inhabitants of the Americas and their descendants.

Northeast – A geographical location in North America extending from the Atlantic Coast on the east, westward to the Great Lakes and south to the Mason-Dixon line, that is characterized by a temperate deciduous forest and four seasons. It is the traditional home of many indigenous tribes, including the Wampanoag and Iroquois.

Northwest Coast – A geographical location in North America extending along the ocean coast from the tip of northern California through British Columbia, and up into southern Alaska, that is characterized by a temperate rainforest and abundant ocean life. It is the traditional home of many indigenous tribes, including the Kwakiutl and the Tlingit.

Southwest – A geographical location in North America, encompassing Arizona and New Mexico and parts of Texas, California, Nevada, Utah and Colorado, that is characterized by a very dry climate with seasonal changes from mild winters to hot summers. It is the home of many indigenous tribes, including the Hopi and the Navajo.

Weather – The state of the local atmosphere at any particular time.

RECOMMENDED RESOURCES

Books for Teachers

Buffalohead, Priscilla. (1987)

Plants and their Uses by the Chippewa Indian People. Anoka-Hennepin Independent School District No. 11: Minneapolis.

Caduto, Michael and Joseph Bruhac. (1991)

Keepers of the Animals: Native American Stories and Wildlife Activities for Children. Fulcrum Publishing: Golden, CO.

Caduto, Michael and Joseph Bruhac. (1994)

Keepers of Life: Discovering Plants through Native American Stories and Earth Activities for Children. Fulcrum Publishing: Golden, CO.

Caduto, Michael and Joseph Bruhac. (1996)

Native American Gardening: Stories, Projects and Recipes for Families. Fulcrum Publishing: Golden, CO.

Davis, Mary B., ed. (1996)

Native America in the Twentieth Century: An Encyclopedia. Garland Publishing: New York.

Keoke, Emory D. and Kay Marie Porterfield. (2005)

American Indian Contributions to the World: 15,000 Years of Inventions and Innovations. Facts on File, Inc.: New York.

Meltzer, David J. (1993)

Search for the First Americans. St. Remy Press: Montreal.

National Museum of the American Indian. (2007)

Do All Indians Live in Tipis? Questions and Answers from the National Museum of the American Indian. Smithsonian: Washington, D.C.

Reid, Betty and Ben Winton. (2004)

Keeping Promises: What is Sovereignty and Other Questions about Indian Country. Western National Parks Association: Tucson.

Russell, Howard S. (1980)

Indian New England before the Mayflower. University Press of New England: Hanover, NH.

Seale, Doris and Beverly Slapin, eds. (2005)
A Broken Flute: The Native Experience in Books for Children. Oyate Publications: Berkeley.

Seale, Doris, Beverly Slapin and Carolyn Silverman, eds. (1998)
Thanksgiving: A Native Perspective. Oyate Publications: Berkeley.

Slapin, Beverly, Doris Seale and Rosemary Gonzales. (1995)
How to Tell the Difference: A Guide to Evaluating Children's Books for Anti-Indian Bias. Oyate Publications: Berkeley.

Slapin, Beverly and Dorie Seale, eds. (1987, 2006)
Through Indian Eyes: The Native Experience in Books for Children. Oyate Publications: Berkeley.

Snow, Dean R. (1989)
The Archaeology of North America. Chelsea House Publishers: New York.

Books for Students

Ancona, George. (1993)
Powwow. Harcourt Brace Jovanovich: San Diego.

Bruchac, Margaret M. and Catherine Grace O'Neill. (2001)
1621: A New Look at Thanksgiving. National Geographic Society: Washington D.C.

DK Publishing. (1995)
Children Just Like Me. Dorling Kindersley Limited: London.

Ekoomiak, Normee. (1988)
Arctic Memories. Henry Holt and Co.: New York.

Gustafson, Angela. (2003)
Imagine A House. Out of the Box Books: Minneapolis.

Hunter, Sally M. (1997)
Four Seasons of Corn: A Winnebago Tradition. Lerner Publications: Minneapolis.

Jennings, Paula. (1991)
Strawberry Thanksgiving. Modern Curriculum Press: Cleveland.

Ortiz, Simon. (2004)
The Good Rainbow Road/Rawa' Kashtyaa'tsi Hiyaani/El Buen Camino del Arco Iris. University of Arizona Press: Tucson.

- Peters, Russell M. (1992)
Clambake: A Wampanoag Tradition. Lerner Publications: Minneapolis.
- Roessel, Robert and Dillon Platero, eds. (1974, 2003)
Coyote Stories of the Navajo People. Navajo Curriculum Center Press: Phoenix.
- Seltzer, Ulli. (1995)
Building an Igloo. Henry Holt and Co.: New York
- Sterling, Shirley. (1992)
My Name is Seepeetza. Douglas and McIntyre: Vancouver.
- Swamp, Chief Jake. (1995)
Giving Thanks: A Native American Good Morning Message. Lee & Low Books: New York.
- Waldman, Carl. (1985, 2000)
Atlas of the North American Indian. Facts on File, Inc.: New York.
- Wittstock, Laura W. (1993)
Ininatig's Gift of Sugar: Traditional Native Sugarmaking. Lerner Publications: Minneapolis.

Websites

- www.nativeyouthmagazine.com – The online magazine for Native Youth.
- www.nmai.si.edu – The website of the National Museum of the American Indian.
- www.oyate.org/aboutus.html -- Oyate is an Indigenous organization that seeks to ensure that the lives of Native Peoples are portrayed honestly. This website is a wonderful resource for recommended (and not recommended) books, curricula, and other resources.

SNOW AND SUN

Students investigate how the Inuit, and other indigenous groups in the far north, adapted to the bright arctic sun.

Materials:

- Copies of Attachment #1, “Glaring problem – daring solution!”, one per student
- Scissors
- Toilet paper rolls, two per student
- Colored pencils, markers, or crayons
- String
- Black and white construction paper, one sheet of each.
- Infant stick-on thermometers (optional).

Instructions:

- Ask students to list some of the technology the peoples of the arctic invented to deal with the extreme environment of the far north. Examples include kayaks, parkas, harpoons, sleds, igloos, visors, and also...sun goggles!
- We usually associate sunglasses with sunny summer beaches. Why would people in the arctic invent sun goggles for a cold, snowy place? Especially during the late winter and early spring when the sun is high in the sky, snow reflects light, creating intense glare from which it is impossible to shade your eyes. In fact, the bright light can actually cause a condition called “snow blindness,” a sunburn of the eyes that can cause intense discomfort and temporary (or even permanent, depending on the severity of the burn) blindness.
- To demonstrate how color affects the reflection of light, perform a simple experiment. Set the two pieces of paper, one white and one black, side by side in the sun (either outside or on a window ledge). Ask students to predict which color paper will be warmer after sitting in the sun. Return to the papers in about 30 minutes.
- When you return, ask students to touch each piece of paper (*optional: stick an infant thermometer onto each paper and measure the temperature*). Whose predictions were correct? Why? The black papers should be warmer because the color black absorbs light (thus making heat). The white papers, which reflect light (and heat), should be cooler.
- Distribute the Attachment “Glaring problem – daring solution!” and the toilet paper rolls to each student. Ask students to flatten their rolls and to follow the instructions for cutting out the nose and string holes. Then ask students to cut extremely narrow eye slits on one of the rolls (the narrower the better!) and larger, wider eye holes on the other roll. Encourage students to decorate their goggles and attach the strings.
- After their goggles are ready, allow students to try them out! Go outside and ask students to put on their goggles with the large eye holes. Then ask them to try on the goggles with narrow eye slits. Is there a difference? Discuss the fact that the narrow slits cut down on the sun’s glare by reducing the amount of light that hits the eye. Ask students if they can see objects in the distance better with the narrower slits. The narrow slit has the added advantage of improving distance vision by focusing the light, similar to the

way a pinhole camera can be used to view an image in the distance. This would certainly be an advantage to a hunter in the arctic!

Other Topics for Discussion:

- Because black absorbs heat, it makes sense that, in order to stay warm in the arctic, you'd want to wear black. Why are so many arctic animals white? (Hint: camouflage!)
- The arctic polar bear actually has black skin. Why is this an advantage?
- In many outdoor sports, such as football and baseball, players put black smudges under their eyes. Why do you think they do this? Do arctic animals have any adaptations for protecting their eyes from the sun? (Hint: look for black markings around or in the eyes, bushy eyebrows, etc.)

LOCAL PRODUCE

Many indigenous people in North America collect wild foods to supplement their diets. Some of these foods can be found in urban areas, where they are commonly thought of as “weeds,” despite their high nutritive value. In this activity, students gain an appreciation of the wild foods that grow in their neighborhoods by compiling their own field guide.

Materials:

- Field guide to plants in the Northeast, one per every three students, if possible
- Large map or (preferably) aerial photo of school and neighborhood (these can be taken off the web)
- Clipboards, two per every three students (these are easily made by attaching a binder clip to a 9”x12” piece of cardboard)
- White office paper
- Pencils and colored pencils
- Rulers, one per every three students
- List of edible and poisonous wild plants (lists can be found online at websites like www.edibleplants.com/)
- 3 ring binder
- 3 hole punch
- Camera
- Wild plant cookbook (there are also many wild plant recipes online)

Instructions:

- Ask students if they’ve ever eaten “weeds.” Many of the plants that grow wild on the side of the road are edible, and in fact very nutritious! Ask students if they would enjoy harvesting food growing right outside of their front doors.
- Discuss with students the importance of being able to identify plants before eating them. Many wild plants are edible, but many, *including parts of some edible plants*, are also poisonous. Make sure that students understand that they should never eat a plant unless they are sure what it is. A helpful online resource for this discussion can be found at www.natureskills.com/edible_wild_plant.html.
- Demonstrate how to use a field guide. Tell students that they will be creating their own field guide to local edible wild plants.
- Look at the photo/map of your school and neighborhood with the students. To connect students to the image, ask them to help you identify the school and several well-known landmarks. Together, define the area your field guide will encompass. Try to include some “wild” spaces in your field guide area. Shorelines and designated nature sanctuaries are wonderful, of course, but any weedy plot will do (it’s useful and wise to explore these wild areas on your own before bringing students). Remember: you are creating a field guide for your neighborhood. Any wild plants in the area qualify.

- Divide students into groups of 3. Ask groups to designate a note-taker, a measurer, and an illustrator. Distribute clipboards, pencils, rulers and field guides to the groups.
- Take a series of trips into the field to explore the plants in your neighborhood. Ask groups to take notice of every “weed” they see and to document the plants by taking measurements, writing descriptive notes and making illustrations. Remind students to ignore plants in cultivated gardens AND TO REFRAIN FROM TOUCHING PLANTS AS THEY STUDY THEM. In addition to the allergenic oils some plants produce, roadside weeds can also be covered in herbicides.
- In the classroom, have regular check-in sessions between groups to compare plants. Soon, students will start to recognize plants they or other groups routinely come across. Once everyone feels that they can recognize most plants on sight, compile the data (group by plant). Redistribute the resulting “plant packs” to the groups for identification. Distribute the field guides and edible/poisonous plant lists and help groups identify each plant, edit a description, and choose an illustration. Make a special notation for plants that are edible or poisonous.
- Take one last trip into the field to photograph each edible and poisonous plant.
- Compile your binder. Arrange plants alphabetically and number pages. Enjoy your field guide!
- *Optional:* Distribute copies of some wild plant recipes and encourage students to enjoy some of these edible plants at home.

HOME SWEET HOME

From the raised houses of the southeastern coasts to the igloos of the far north, the house designs of indigenous North Americans are ingenious design solutions to climate. In this activity, students look at houses from North America and around the world and use them as inspiration for their own house-as-climate-solution designs.

Materials:

- Drawing paper/sketch books
- Pencils, colored pencils, markers
- *Optional:* craft supplies for house models (e.g. modeling clay, balsa wood, felt or other cloth, etc.)

Instructions:

- Discuss with students the fact that, in much of the world today, house design is a function of environment. People across the world build houses that work in their climates and that also take advantage of the building materials they have naturally available. *Optional:* If you are using this activity post museum visit, discuss with students how the houses they learned about in the *Igloos to Adobe* class served as climate solutions for their inhabitants.
- With students, research other house designs from different climates in North America and around the world (see *Recommended Resources* for some suggestions). Look closely at the different features that make those houses work in their environment: moveable houses, boat houses, houses on stilts, houses that take advantage of warming/cooling properties (such as beehive houses and igloos). Point out the fact that in many warm parts of the world, cooking is done outside. By contrast, in colder areas, the main cooking area forms the center of the house. Why?
- Tell students that they will be designing a house for a particular location. This can be a location that you, the teacher, create for all of the students to work from, or you can ask the students to create their own places. Lay out the parameters of the climate and relevant local geography (e.g. tropical climate with rainy and dry seasons, flooding common during rainy seasons, etc.). Include other factors that might influence house design (e.g. perhaps inhabitants only spend certain parts of the year in the house).
- Have students brainstorm housing solutions for the given climate. Encourage them to take inspiration from the houses they saw during their research. Ask them to also consider energy needs and possible solutions.
- Ask students to make detailed drawings of their houses. Design elements that are not clear or are obscured in some way (such as an element contained within the structure) should be noted on the drawing, either through text or through the use of smaller pictorial representations.

- *Optional:* Ask students to construct models of their house designs using appropriate materials (including found materials such as grasses, bark or stones).
- Have students present their final drawings/models and explain their solutions to the class (*optional:* Invite other classes or parents to observe the students' presentations). Encourage students to discuss the different house designs. Did any of the designs lend themselves to our local climate?
- Encourage a discussion on house design solutions for our climate, geography, and lifestyle. What ideas should we be making use of when we build houses in the Northeast?

GLARING PROBLEM - DARING SOLUTION!

True or False? Staying outside all day in the arctic can blind you.

The answer? True, if it's a sunny day!

Snow blindness results if you expose your eyes for too long to the glare of sun off of snow and ice. You actually burn the lens of your eye and it really hurts!



The Inuit spend long hours outside in the snow and sun. How do they prevent snow blindness (circle one)?

- a. Umbrellas b. Eye drops c. Grease for eyes d. Sun goggles e. Fur trim on hoods

If you circled sun goggles, you're correct! The Inuit were the first to invent *sun glasses*!

The Inuit made their sun goggles from either bone or driftwood... why?

(Hint: Think about whether the Inuit have traditionally had access to glass, plastic, or metal.)

Why driftwood? Do many trees grow in the arctic?

Instructions for making your Sun Goggles:

- Using a pair of scissors, take your flattened toilet paper roll and cut a nose hole that allows the goggles to fit comfortably on your face. With a pencil, mark the approximate location of your eyes.
- Fold the sides of your toilet paper roll in to meet at the center and carefully cut thin eye slits.
- Unfold your goggles. With a hole punch, make holes on either edge of your goggles.
 - Attach string to the holes. Enjoy your new sun goggles!

