

**Polar Quest
Grades 1-3
Teacher Packet**

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Polar Quest Background Information

POLAR BEAR

Size: Males - 8-10 ft; 770-1,500+lbs
Females - 6.5-8 ft; 330-550 lbs

Distribution: Arctic coasts, islands, and adjacent sea ice of Eurasia and North America

Prey: Ringed seals, sea birds, carcasses of stranded marine mammals, small land mammals, reindeer, fish, and vegetation

Predators: No natural predators except man

Fun Fact: At birth, polar bear cubs weigh only about two pounds

PACIFIC WALRUS

Size: Males - 9-11 ft; 1,760-3,750 lbs
Females - 7.5-10 ft; 880-2,750 lbs

Distribution: Arctic Pacific

Prey: Clams, mussels, snails, crabs, shrimp, squid, sea cucumbers, worms, occasionally fish, and some eat seals

Predators: Killer whales and polar bears

Fun Fact: The sensitive, bristly whiskers (or vibrissae) of the walrus are used to feel for mollusks on the ocean bottom.

ALASKAN NORTHERN SEA OTTER

- Size:** Males – up to 5 ft and 100 lbs
Females – up to 4.5ft and 75 lbs
- Distribution:** Alaska, including the Aleutian Chain, British Columbia, and Washington
- Prey:** Sea urchins, abalone, mussels, clams, crabs, snails, and about 40 other marine species
- Predators:** Humans (oil spills, habitat loss, gill net entanglement, conflict with shellfish fisheries), sharks, hawks, sea lions, orcas
- Fun Fact:** The sea otter has the thickest fur in the animal kingdom.

Vocabulary

adaptation--any alteration to a physical structure, physiological process, or behavioral pattern that makes a species more fit to survive and reproduce in its environment

Arctic--the ocean and land surrounding the North Pole, including parts of Alaska, Canada, Russia, Greenland, Iceland, Norway, Sweden, and Finland

blubber--an insulating layer of fat just below the skin of most marine mammals

conservation--taking care of our environment by wisely managing its resources

pollution--substances that affect the environment in a negative way, such as chemicals that poison water supplies or trash that kills ocean wildlife

tree line--the upper limits of tree growth in mountains or at high latitudes

tusks--a pair of elongated, pointed teeth projecting outside the mouth of an animal (like a walrus)

vibrissae--stiff, sensitive whiskers on the face or head of an animal (like a walrus)

Suggested Reading List

A Polar Bear Journey by Debbie S. Miller
The World of the Polar Bear by Thor Larson
Arctic and Antarctic by Barbara Taylor
Little Walrus Warning by Carol Young
Lootas Little Wave Eater: An Orphaned Sea Otter's Story by Clare Hodgson Meeker

Related Websites

<http://www.enchantedlearning.com/Home.html> educational website with simple scientific information and search field
<http://www.polarbearsinternational.org/> basic info, FAQ, and a link for teachers
<http://www.mbayaq.org/> website for Monterey Bay Aquarium with a page dedicated to teachers and kids

Pre-Visit Activity
Polar Quest Word Find

T F D S J N W B O G G Z B P U T G A I B
Y L T Y Z O H Q I C I L H L J O D O R D
U K V Y U I I Z Z K S F C U U K S U H N
Z K I W N T J I T O O Y K H J B W W D C
I T D F T U T R E E L I N E M A B F L Z
N F G G S L Z H R E L Q Q N L C Y E C G
P H O Q R L R W C R A E B R A L O P R R
M E M S J O P J O Z D Q U G O S C U E L
T A W W E P E I N U K S O I X E H T I A
K J X Z I L P R S E C O X W J P T Q D S
C I T C R A G T E Z A Z J N T O U A L E
Q H N N Z V T S R S Z S J P A U P D D A
A A L R J G C W V L K G S E Q T T N H S
D R S X S W U C A H V S S I A M D Q J T
O C S V Q A Z J T G N I U T R L W G L A
D Y Y U H H S J I Z Y Q I T O B D J E R
H I L H A C O Y O F I O T C O X I W L Q
A V O F N N A M N A N O N O M I V V A S
C L A M R Z V J A I W F Y N R V F N E L
M S A E Z J O D F I B Y J K F I X Y S P

ADAPTATION
ARCTIC
BLUBBER
CLAM
COLD

CONSERVATION
POLAR BEAR
POLLUTION
SEAL
SEA OTTER

SEA STAR
TREE LINE
TUSKS
VIBRISSAE
WALRUS

In-Zoo Activity—ZOO CLUES

Directions:

Find out which animal can be 10 feet tall, weigh over 1000 pounds, and be found on both land and in water!

To find out, answer the questions by searching through the zoo for certain animals. Move the squared letter from your answer to the squares in the final answer below.

1. I am black and white and “fly” through the water. (found in PPG Aquarium)

_ _ _ _ _

2. I am a cat that lives on rocky terrain in the Himalayas. (found in Asian Forest)

_ _ _ _ _ _ _ _

3. I love to swim through the kelp forests, where I can find my favorite snack – sea urchins! (found in Water’s Edge)

_ _ _ _ _ _ _

4. Thick fur keeps me warm and stripes help me hide. (found in Asian Forest)

_ _ _ _

5. I am a Pennsylvania rodent known for being a great architect. (found in Kids Kingdom)

_ _ _ _

6. I am a rare species of leopard, native to Russia, seen right here in the Pittsburgh Zoo! (found in Asian Forest)

_ _ _

7. I am the only kind of deer where both males and females have antlers. (found in Kids Kingdom)

_ _ _ _ _

Answer Squares:

Answer Key: 1. Penguin 2. Snow Leopard 3. Sea Otter 4. Tiger 5. Beaver 6. Amur 7. Reindeer

Post-Visit Activity:

Scrimshaw on Soap

Background:

Scrimshaw is the name given to handiwork created by whalers made from the byproducts of harvesting marine mammals. It is most commonly made out of the bones and teeth of whales, and the tusks of walruses. It takes the form of elaborate carvings in the form of pictures and lettering on the surface of the bone or tooth, with the engravings highlighted using a pigment, or small sculptures made from the same material. The making of scrimshaw began on whaling ships around 1820 on the Pacific Ocean, and survived until the ban on commercial whaling.

Purpose:

To supplement the study of the Walrus and the use of ivory by Arctic peoples, students draw pictures to replicate scrimshaw work on ivory.

Materials:

One bar of soap (Ivory works well) for each student, tools that could be used for cutting the soap

Procedure:

1. Have students draw onto the bar of soap an arctic scene or animal.
2. Use the tools to scratch or lightly cut the picture into the soap. Remember, scrimshaw is worked onto the soap; it doesn't change the shape of the soap.
3. To make the carving stand out, go over the work lightly with shoe polish or furniture scratch cover. After it is down in the cut areas, wipe it off of the face of the soap.

Summary:

Discuss the effects of using ivory from walruses as a medium for art. What do you have to do to get the tusks from walruses? Is it worth it? What alternatives are there for your artwork?