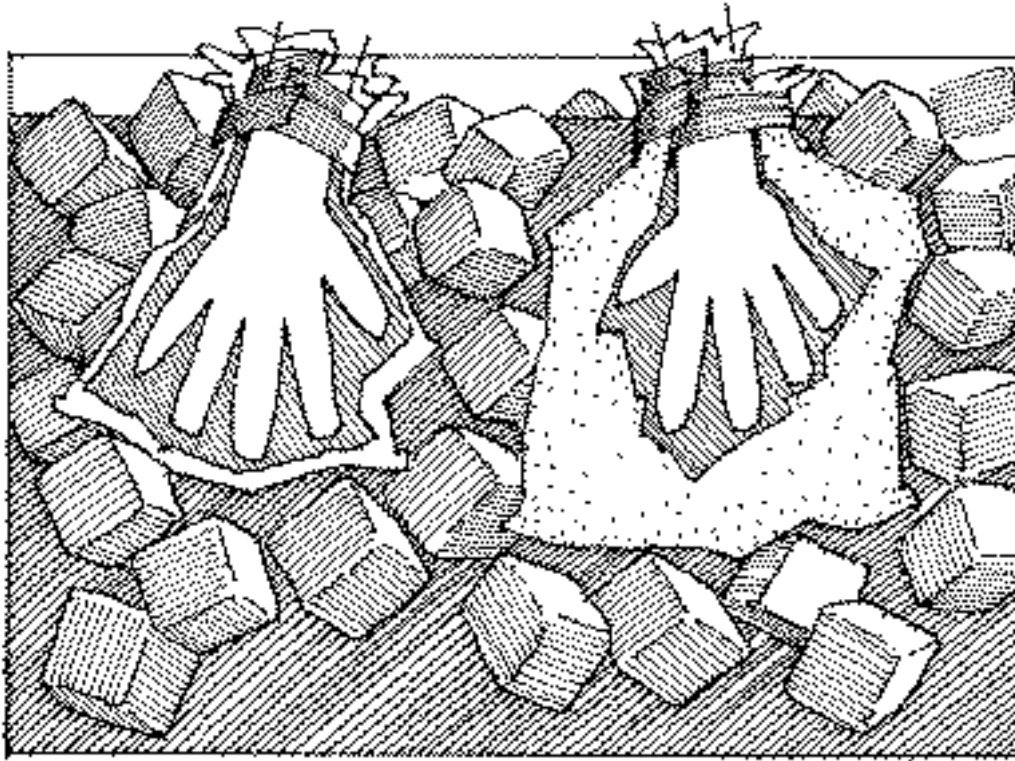


BLUBBER GLOVE ACTIVITY



An activity for Grades 3-5 (May be modified for grades 6-8)

Whales spend much of their lives in freezing cold Arctic and Antarctic waters. How do you think that these animals can survive in the cold water? Remember they are warm blooded mammals. This activity will help you understand how the blubber for the whale insulates them from the cold.

MA Science Frameworks

Give examples of how inherited characteristics may change over time as adaptations to changes in the environment enable organisms to survive Life Science 3-5 #6

Give examples of how changes in the environment can cause animals to die or migrate if they can not adapt Life Science 3-5 #7

Recognize that some animal behaviors are instinctive Life Sci 3-5 #8

Discussion Questions

1. Discuss with your students how our bodies are chilled in cold water. What do we do to stay warm?
<move around, wear insulating wetsuits, get out of the water>
2. Ask students to list ways in which animals are able to stay warm in cold water
<blubber, air in feathers, oil on fur, low surface area to volume ratio>

Make your own blubber glove and discover how blubber works.

Supplies:

- 4 sturdy 1 quart size zip-lock bags
- 1 can of vegetable shortening such as Crisco
- Duct tape
- 1 bucket of ice water
- Towels
- Stopwatch or Watch with a second hand

Procedure

1. Cover one hand with a plastic bag.
2. Put a generous amount of shortening into another bag. Have the student put the plastic-covered hand into the bag with the shortening. Knead the shortening to make sure the hand is completely surrounded by shortening.
3. Wrap duct tape around the portion of the bag covering your wrist to seal the bag (optional).
4. Cover the other hand with two plastic bags (without shortening). This is the "control." You are now ready to use your blubber glove to find out how blubber works
5. Have a student time how long each hand remains underwater.
6. Place the hand with two plastic bags in the ice water. How long does it take for the hand to feel cold?
_____ (t1)
7. Place that hand in the blubber glove into the ice water. How long does it take for this hand to get cold?
_____ (t2)
8. Calculate the difference in time. (t2 - t1)
9. Why do whales have blubber?
10. Which whales do you think have the thickest blubber? Why?
11. Devise other experiments using the blubber glove.

Blubber as a food reserve

Whales, Weddell seals, and penguins all have blubber.

Once penguins have laid their egg, the parents take turns incubating it. The parent that stays on the nest keeps the egg warm while the other is off feeding on krill and fish. Adelle penguins trade off every two weeks, while Gentoo penguins switch every day.

How are the Adelle penguins able to survive for so long while sitting on the nest? How are the Gentoo penguins able to find enough food to sustain themselves while remaining relatively close to shore? What strategies for nesting and incubating do other penguins species undertake?

Materials

13. Discuss how the solid shortening is like the blubber that these marine animals have.
14. Discuss what other advantages blubber gives marine animals besides warmth. <buoyancy>

Modified from an activity from the Gulf of Maine Research Institute with permission. Visit them at <http://gmri.org/> for additional marine science materials. Click on the Education section.