

Blubber Gloves Experiment

Explore how blubber keeps animals warm in cold water!

Blubber is the thick layer of fat under the skin of marine mammals such as whales, seals, and walruses. It keeps them warm and provides energy.

Materials Needed:

Blubber and Marine Mammals

Blubber is the thick layer of fat under the skin of marine mammals such as whales, seals, and walrus. For these animals, blubber has several uses, helping them survive in icy Arctic waters.

Keeping Warm Blubber is like a warm winter coat. Fat is a good insulator: it keeps heat in and cold out. In marine mammals, the layer of blubber provides heat in, keeping the animal warm. Depending on species, the blubber layer can be 2 inches (5 cm) to 12 inches (30 cm) thick!

Bearded Seal Image: NOAA/John Jansen.

Blubber also contains many more blood vessels than the fat in land animals. These blood vessels constrict, or get smaller, in cold water. Constricted blood vessels decrease the amount of blood flow and conserve body heat.

Providing Energy Blubber stores a lot of energy in the form of proteins and lipids (a type of fat). The animal can use this energy when food is scarce. For example, nursing mothers build up thick stores of blubber before giving birth.

Right: Beluga whale blubber Image: Marci Trana, fisheries.org.

Floating: Blubber is less dense than the ocean water surrounding it, so animals with blubber naturally float. This allows the animal to conserve energy while swimming, and float near the surface to breathe while resting.

In many Arctic cultures, including the Inupiat and Yup'ik peoples, blubber is an important part of their diet. It is an important source of energy, vitamin D, and vitamin C. Thick slices of whale blubber and skin