Insulation of Antarctic Animals

**Aim**

Antarctic animals such as whales, seals and penguins in the biosphere, use insulation of fat and blubber to help reduce the heat reduction through their body. This activity will help students to understand how effective this layer of blubber and fat is.

**Equipment needed**

* Bucket
* Ice
* Water (as cold as you can get it)
* Rubber gloves
* Vegetable shortening or butter
* Food storage bag or plastic bag

**Instructions**

1. Put ice in the cold water in a bucket
2. Coat one glove with vegetable shortening or butter and one glove without
3. Put each gloved hand in a separate food storage bag
4. The student is to then place both hands in the bucket of icey water

**Question**

Answer the following questions to make sure that you understand the activity and the reasoning behind it.

* Which hand gets cold first? Why is this?
* How does this experiment show how the insulation layer of fat and blubber protect the animals from the cold?
* What would happen if the water was hot?
  + Would the insulation still work?
  + What would this mean for the animal?
  + Could you apply this knowledge to the increasing of temperature from climate change and its effects on the biosphere. Why/why not?