

How Do Polar Animals Stay Warm in Icy Water?

Science Experiment

Method

1. Start off by talking about the toy animals you have and where they live. What is the weather like where they live? (Penguins live in the Antarctic in the South Pole, polar bears live in the Arctic in the North Pole.)
2. How do the children think the animals keep warm? Listen to the children's suggestions.
3. Show the children the bowl of icy water and let them feel how cold it is for themselves.
4. It is possible that one of the children may have suggested that the animals have thick fur coats to keep them warm, so let the children wear a woollen glove each.
5. Do the gloves keep the children warm? What happens when the ice starts to melt? The gloves get wet and hands start to get cold.
6. The explanation of fat keeping the animals warm can be demonstrated in 2 different ways:
 - Fill 2 zipper storage bags with vegetable oil and seal them. Then put those 2 bags inside another small bag and get the children to put their hand inside between the two bags of oil. They then put both hands in the bowl of ice to see the comparison in temperature.
 - Put a plastic glove on each child and then cover the glove in lard. Again, put both hands in the water and feel the difference in temperature
7. Conclusion - Polar animals stay warm when it's dry with their thick fur coats. When it's wet they have a layer of fat that insulates their bodies from the cold and even water.

You will need:

A bowl of icy water with ice cubes in

A selection of toy polar animals

Wool glove

Version 1:

Vegetable oil

3 zipper storage bags

Version 2:

Latex/plastic glove

Lard

