

# 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, called blubber, 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:

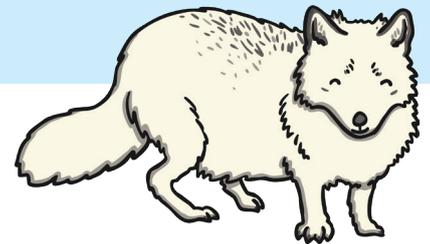
Vegetable oil

3 zipper storage bags

### Version 2:

Latex/plastic glove

Lard



We hope you find the information on our website and resources useful. The activities set out in this resource are potentially hazardous. The activities are not suitable for all children and adult supervision may be required for some of the activities. It is your responsibility to assess whether the children in your care are able to safely carry out the activities and whether the children require adult supervision. You are responsible for carrying out proper risk assessments on the activities and for ensuring that activities can be carried out safely. We are not responsible for the health and safety of your group or environment so, insofar as it is possible under the law, we cannot accept liability for any loss suffered by anyone undertaking the activity or activities referred to or described in this resource. It is also your responsibility to ensure that those participating in the activity are fit enough to do so and that you or the organisation you are organising for has the relevant insurance to carry out the physical activity. If you are unsure in any way, we recommend that you take guidance from a suitably qualified professional.