

2. BLUBBER GLOVES

AGE 5-11

Resources

- Children sheet 4d
- Photos and videos in Frozen ocean (primary) with insulation bit.ly/FO_INS



Large container



Lots of ice



Stopwatch



Gaffer or parcel tape (method 2 only)



Fat (eg margarine or animal equivalent, suet, butter, lard)



Two freezer / self-seal bags



Large rubber gloves (method 2 only)

Unit summary

In this lesson children investigate the insulating properties of blubber and consider how the adaptations of Arctic organisms help develop these.

Introduction (10 mins)

Children imagine what it would be like to live in a really cold place like the Arctic. How would they keep themselves warm?

There are animals like walrus and polar bears that live in places like this. They can't wear warm clothes so they grow a thick layer of fat, or blubber, to keep out the cold.

Activity (10 mins)

The children are to pretend to be an animal in the Arctic and find out whether a layer of fat really can keep out the cold. There are two ways of doing the experiment. The first might be a bit messy, so children could choose which they would prefer to complete.

The messy way

1. Fill a large container with lots of ice and water.
2. Put one hand in the cold water and time how long you can keep it there before the cold becomes unbearable.
3. Make a note of the time you lasted.
4. Now smear your hand with lots of fat and repeat the experiment, timing how long you can keep your fatty hand in the water.
5. Compare the two times.

The clean way

- Follow steps 1, 2 and 3 in the first method. Then...
4. Fill one of the bags or gloves two thirds full with fat.
 5. Put one of your hands in the other bag or glove then push it into the fat filled-bag or glove. Hey presto! A blubber glove.
 6. Roll the ends of the bags or gloves together and seal with tape to stop any fat escaping.
 7. Put your blubber glove in your freezing cold water and compare times as before.

Plenary (5 mins)

What did you discover?

Imagine what it would be like to live in a really cold place like the Arctic? Brrrr! How would you keep yourself warm? There are animals like walrus and polar bears that live in places like this. They can't wear warm clothes so they grow a thick layer of fat, or blubber, to keep out the cold.

Your mission

Pretend to be an animal in the Arctic and find out whether a layer of fat really can keep out the cold. There are two ways of doing the experiment. The first might be a bit messy, so make sure you get a grown up to help.



What you'll need

- 1 large container
- Lots of ice
- Stopwatch
- Gaffer or parcel tape (method 2 only)
- Fat, such as margarine or animal equivalent suet, butter, lard
- Two freezer / self-seal bags or over large rubber gloves (method 2 only)

The messy way

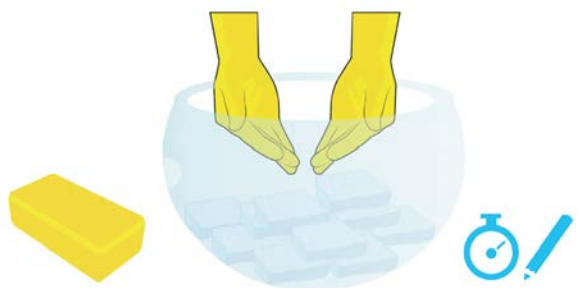
1. Fill a large container with lots of ice and water.
2. Put one hand in the cold water and time how long you can keep it there before the cold becomes unbearable.
3. Make a note of the time you lasted.
4. Now smear your hand with lots of fat and repeat the experiment, timing how long you can keep your fatty hand in the water.
5. Compare the two times.



The clean way

Follow steps 1 & 2 in the first method. Then...

3. Fill one of the bags or gloves two thirds full with fat.
4. Put one of your hands in the other bag or glove then push it into the fat filled-bag or glove, Hey presto! A blubber glove.
5. Roll the ends of the bags or gloves together and seal with tape to stop any fat escaping.
6. Put your blubber glove in your freezing cold water and compare times as before.



What did you discover on your fat-finding mission?