
SCIENCE

# Bears


In Year 1, you learnt all about bears!

Do you remember learning about polar bears?

Can you remember any facts about polar bears?

# Polar Bears

Did you remember these facts?

- A baby polar bear is called a cub
- Polar bears live on the sea ice of the Arctic Ocean
- They have a thick layer of body fat and a water-repellent coat that insulates them from the cold air and water
- They eat seals
- Their sea ice habitat is melting because of climate change so polar bears are now a threatened species.

# Ice

Sadly, the sea ice habitat is melting because of climate change so polar bears are now a threatened species.


You are going to carry out an experiment to see how long you can keep ice from melting using materials you will find in your house.

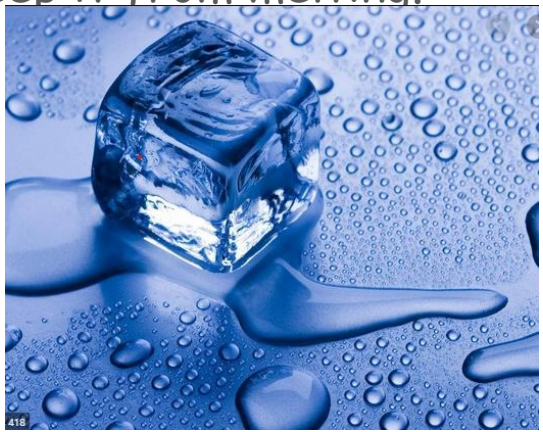
What happens to ice when you take it out of the freezer? Why?

What happens to ice when you take it out of the freezer? Why?

That's right it melts!

If we want to keep ice from melting, we need to insulate it!

Your job is to find materials which are good insulators and put those around the ice to keep it from melting.



solid liquid gas

# Insulator

A material or object that does not allow heat (and electricity) to easily travel through it.

Which materials do you think would be good insulators? Why do you think that?

bubble wrap

felt

cotton wool

towel

paper and card

wood shavings

# Experiment - Which material provides the best insulation to keep an ice cube from melting?

You are going to take part in an experiment to find out how to keep ice from melting!

<u>You will need</u>:

- A range of materials  e.g. bubble wrap, felt, cotton ball, small towels, wood shavings, paper, cardboard
- Scissors
- Ice cubes
- Containers e.g. square plastic food containers work well because they don't leak!

# Instructions

1. Decide which materials, or combination of materials, you want to use to insulate your ice cube. Maybe a layer of felt around the edge of the container, and then bubble wrap on the inside? Remember to have a control which should have no insulation.
2. Put your insulated boxes and control in an area away from sunlight or another direct heat source.
3. Check on the ice cubes every 10 minutes.
4. Record your results - there is a recording sheet attached.

Top Tip - Don't take the ice cubes out of the container when you check because it will speed up melting!

# Results

Record your results on the recording sheet or you could record your results in your own way!

# Conclusion

How long did it take the ice cube to melt completely with your best insulator?

Are there any other factors (besides the materials used for insulation) that could have affected how quickly the ice melted?

Which material provided the best insulation? Why?

How could a person use knowledge about insulation to create products in the real world?  What kind of products could the develop?