Ice lolly challenge

Did you know?

Thermal insulation works by trapping heat energy. Penguins, like the ones in the animation, aren't the only animals that use it to keep warm. Polar bears have fur, whales have blubber and we use insulation in our walls and roofs to keep heat inside our houses. Materials that are poor conductors of heat – like fur, feathers and blubber – are good insulating materials.

Science scene-setter

As well as keeping things warm, we also use thermal insulation to keep things fresh for longer – cold temperatures slow down the growth of microorganisms that can spoil food or make us ill. Before the invention of the fridge, many large mansions had well-insulated ice houses in the garden to store ice and keep things cool. Many people still use insulated cool boxes or bags to carry shopping home or to keep a picnic cool.

Put it to the test

Challenge your child(ren) to make a cool box to store an ice lolly.

Have a competition with a few friends to see whose lolly melts last to declare a winner.

7-11

Energise Anything!

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Key activity steps

1 Research

Watch the animation The nature of insulation: eonenergy.com/primaryathome

- Can your child(ren) tell you what materials make good thermal insulators?
- What are the properties of those materials? Clue: they are often waterproof and thick or, like penguin huddles, made of more than one layer
- Look at cool boxes or cool bags at home or online. What materials are they made from?

2 Design

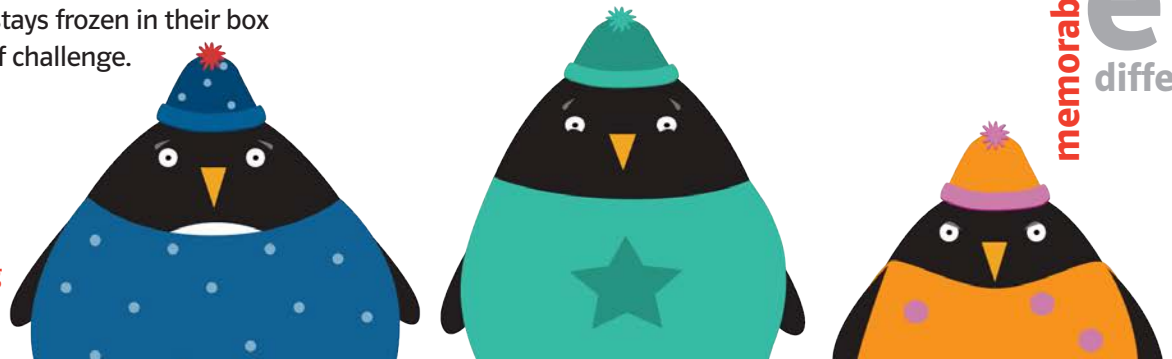
Challenge them to plan and design their own cool box.

- Try lining a cardboard box with different materials and measure the temperature with a forehead strip thermometer
- Which materials are most effective?
- Do more layers work better?
- Is a combination of materials the most effective?
- How can your child(ren) make their box easier to use? Can they think of a clever way of opening and closing the box?

3 Test

Test lots of different combinations to establish which material or combination of materials works best.

- Use the test results to select the best materials to line a cool box
- Time how long an ice cube stays frozen in their box
- Then try the ice lolly melt-off challenge.



Equipment and resources

- ☑ An old box
- ☑ Insulating materials to test: paper towels, bubble wrap, fabric, cotton wool, cardboard, wool, polystyrene, sawdust, grass, straw
- ☑ Sellotape, string or glue
- ☑ Ice cubes and lollies

E.ON's Energise Anything has already engaged over 25,000 young people. We asked some of their teachers to describe it in three words. Here's what they said most often!