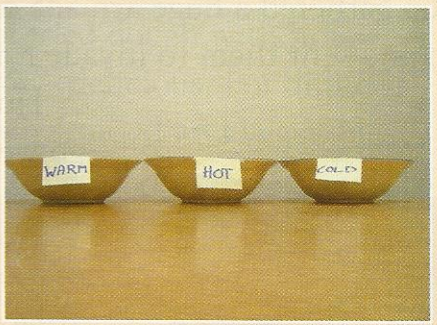
34 – Heat

Safety Alert: Always be very careful with hot tap water. Ask an adult to help with this experiment.

Experiment: Can you sort the bowls of water by feeling their temperature?

What you need: three small bowls, ice cubes, cold water, hot water, another team to work with



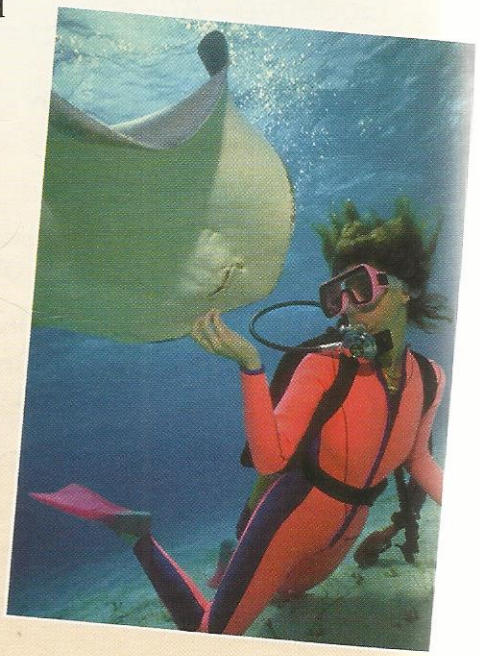
What to do:

1. Pour cold water into a bowl and add some ice cubes.
2. Pour hot water into another bowl.
3. Pour a mixture of hot and cold water into another bowl.
4. Make sure your bowls are not arranged in any particular order.
5. Ask another team to label your bowls of water from the coldest to the hottest, using their hands to test the water.

What happened: Did the other team label the bowls correctly? How did they test the water? Can you design a different test to check the temperature of water?

Heat Moves

If you leave the three bowls in the experiment for two hours you will notice that the water in each bowl will be the same temperature. This is because heat moves. Heat has moved from the room and made the cold water warmer. Heat has moved into the room from the hot water making the water colder. When you put your hand on metal, heat moves from your hand into the metal. You can feel your hand losing heat.



Staying Warm

We wear thick clothes to keep our bodies warm in cold weather. Woolly jumpers trap a layer of air next to our skin. This air warms up and stops heat from our bodies moving into the cold air.

A diver wears a wet suit to stay warm. The suit traps a layer of water next to the diver's skin. This water gets warm and stops the heat from the diver's body moving into the cold water.

Are You Cold?

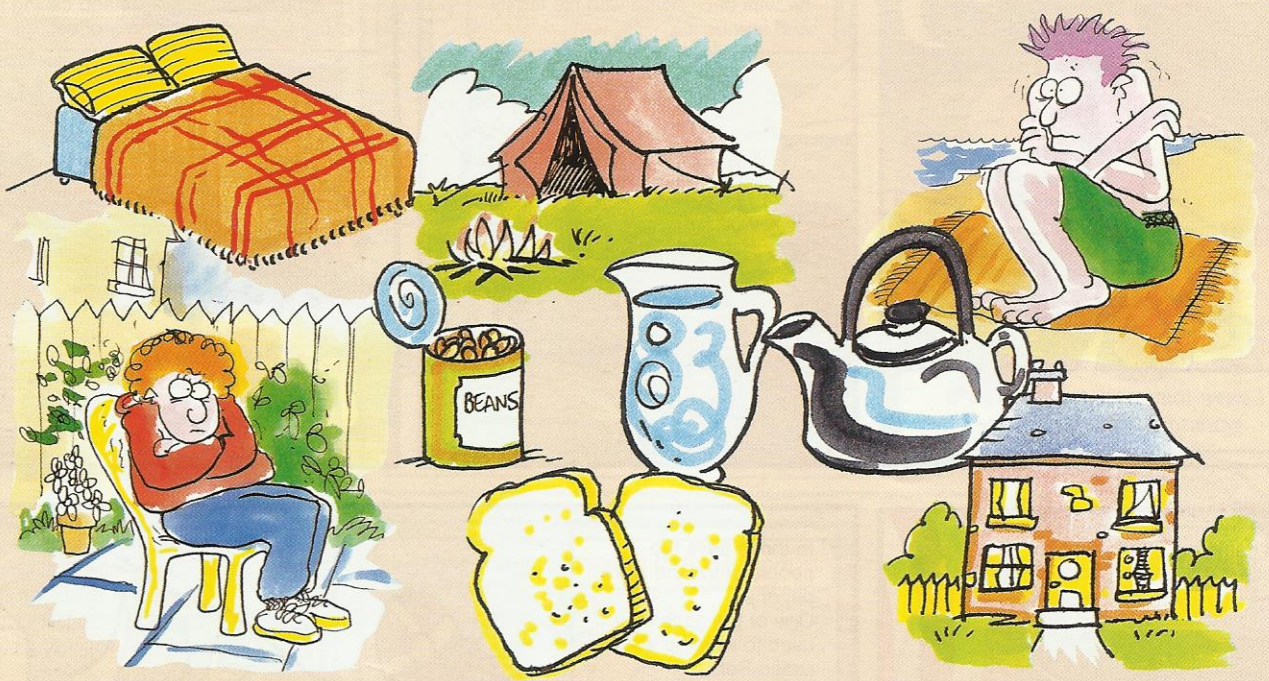
Your body plays a few tricks when it feels cold. First of all, the muscles in your skin tighten, making goose pimples. This makes your hair stand up straight so that it can trap some air to help keep it warm. If that doesn't work, the body starts to shiver. This makes your muscles work harder. When your muscles work, your body warms up, just as it does when you have played a game of football.

Heat From The Sun

The sun gives us lots of heat. Even on a cloudy day, the sun keeps our planet warm. The sun is really a star. It is much closer to us than any other star and so looks bigger in the sky. The surface of the sun is so hot that we can feel its heat 150 million kilometres away.

Ways of Heating

Look at the pictures below. In your copy, write down how each item might be heated.



Exercises

1. Does heat move from a cold object to a warm object or from a warm object to a cold object?
2. Name three things you wear to keep warm in cold weather.
3. What does a diver wear to stay warm?
4. Write about the two tricks your body can play when it feels cold.