Touch - How can you feel hot and cold?

Fact

- Your skin has thousands of sensory nerves that detect different things like, pain, tickling, roughness, softness, heat and cold.
- Those sensory nerves detect the sensation then send the message to your brain as an electrical pulse along your nervous system.
- Your spinal cord, which sits in your spine, works as a conveyor belt sending the messages to your brain.
- But in the case of an emergency, like if you touch something really hot with your hand, your brain takes the message and it orders your hand to move away from the hot thing – then it lets the pain message get through. Your brain translates the message as OUCH!

Do you know

- Your body has a lot more pain sensors than any other sensory nerves so you feel pain quickly.
- Different parts of your body have more sensory nerves than others.
- Your hands have a lot of sensory nerves because of all the work you need them to do. (have you ever tried picking something up when you've been lying on your hand and it's "gone to sleep" – it's really hard because you're hand can't feel things easily)
- Your hair and nails don't have any sensory nerves because the parts you can see are actually dead. You can cut your hair and nails without even noticing it.
- If you were to pull a hair out of your head it's sensory nerves in the skin around the hair follicle and the hair root that sense the feeling and advise your brain that you are experiencing pain.

Experiments you can do

Test your sensory nerves

What you need:

The help of a friend

Several household items that you're both familiar with (like a nail brush, a damp dish cloth, some toys, in ice cube and so on – things with different shapes, edges and textures are good. Make sure there are some metal objects which will feel cooler than plastic or wooden objects)

A piece of material to use as a blindfold

What you do:

When one person wears the blindfold the other person gets the items ready to test. Try guessing what an object is by using your feet first, then maybe the skin on your forearm (the bit of your arm between your wrist and your elbow) then your hands. Which part of your body has a more accurate sense of touch?

Other Investigations
Sensory test number 2
What you need:
The help of a friend
One short twig
Two short twigs taped together, side by side.
A piece of material to use as a blindfold

What you do:
Put your blindfold on and get a friend to gently put both tips of either the single twig or the two twigs taped together against your skin on your arm. How many twigs can you feel? Get them to tell you if you were right then try it again using your hand. How many twigs can you feel? Then swap with your friend and try the sensory test on them.

You should be able to tell how many twigs are touching you with your hand because you have more sensory nerves in your hand than you do in your arm.

Jokes

What did one nerve say to the other one? I don't know about you but I'm feeling a bit nervous!