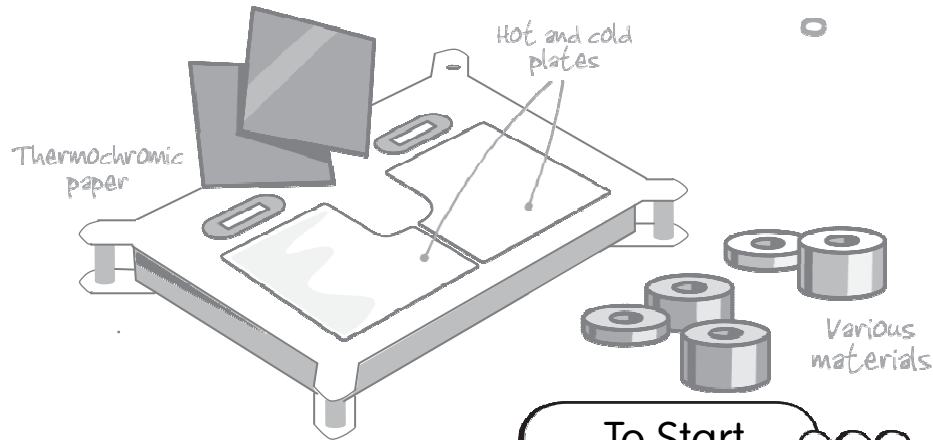
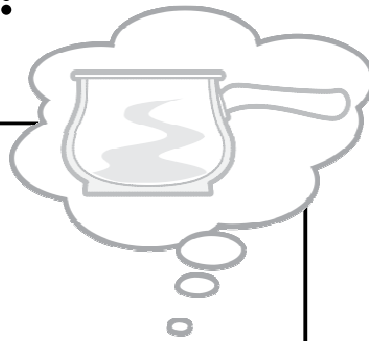


HOT OR COLD?

Challenge



You are provided with:

- 3 x '25-30°C' thermochromic tiles
- 3 x '30-35°C' thermochromic tiles
- 3 x aluminium disks of different thickness
- 1 x wooden block
- 1 x plastic block

HOT OR COLD?

1. Place your hands on the two plates
Complete the paragraphs below:

The hot plate feels _____ because it is _____ the temperature of my skin, so _____ energy transfers from the _____ to my hand.

The cold plate feels _____ because it is _____ the temperature of my skin, so _____ energy transfers from my _____ to the plate.

2. Different materials, same thickness.

- a) Place a wooden block, plastic block and aluminium disk of the same thickness on the hot plate.

Place a '25-30°C' thermochromic tile on each material.

In the boxes below, show the order in which the tiles changed colour.

1st _____ 2nd _____ 3rd _____

- b) Can you explain why (using the words in box below)

HOT OR COLD?

c) Replace the tiles with '30-35°C' ones.

What do you notice?

Imagine you were designing a saucepan.

Which material would you use for the pan? _____

Why?

Which material would you use for the handle? _____

Why?

3. Same materials, different thickness

Place the 3 aluminium disks on the hot plate and cover each one with a '30-35°C' tile.

Time how long each one takes to turn blue.

	Time (s)
Thick	
Medium	
Thin	

HOT OR COLD?

Why are the times different?

4. Place one aluminium disk on the cold plate.

Read the temperature on the red display and place the relevant tile on the disk.

Why does it not change colour?

