



Heat - How do I boil an egg?

Fact

- To boil an egg you need water, a pot and heat.
- Heat is a form of energy and when something is heated the tiny particles it's made up of get excited and move around a lot.
- Heat from a stove element excites the metal particles in the pot and that heat energy is passed through to the water. When those water particles get all excited and heat up they pass the heat to the shell of the egg.
- When the molecules in the eggshell get all excited they heat up and pass that heat energy to the insides of the egg, first the egg white and then the yolk.
- Heat changes the protein particles in the egg. It causes a chemical reaction, which changes the egg white from clear to runny and makes it more solid.

Do you know

- Heat cooks food from the outside in. If you don't let a potato or a piece of meat cook for long enough the outside might be cooked but the inside will still be raw.
- Metal is a very good conductor of heat – it passes on heat from a stove element very quickly and easily
- Metals also have a high melting temperature – metal won't melt until it reaches about 500 degrees Celsius and a stove element never gets that hot. So that's why pots are made out of metal.

Experiments you can do

Boil an egg

What you need:

The help of an adult

2 eggs

2 eggcups

A stove

A clock or watch

A pot

Water

Large spoon

Teaspoon

What you do:

Get the adult to help you all the time you are working with the stove.

Turn on the element and let it warm up. Put the pot on the element and pour in about a litre of water. When the water begins to boil carefully put the eggs in the water using the large spoon.

Leave the eggs in the boiling water for about 3 minutes then have the adult carefully remove one with the large spoon and sit it in an eggcup. Leave the second egg in for 10 minutes then have the adult remove it with the large spoon and sit it in an eggcup. Tap the tops off the eggs with the teaspoon and compare them. Then eat them!

Other Investigations

Next time you're in the bath do some heat investigations

What you need:

A clean pot lid or a clean foil pie plate

A clean plastic ice cream container lid

A clean foam meat tray

A tray of ice cubes

What you do:

Get everything ready in the bath before you hop in with your tray of ice cubes. Float your heat conductors (the lids, meat trays and pie plates) on the water. Place an ice cube on each and see which ice cube melts the fastest and which takes the longest to melt. If an ice cube melts really fast on one of the conductors (like the pot lid) then that conductor is good at passing the heat of the water to the ice cube. If an ice cube takes a long time to melt then the conductor is not so good at passing the heat.