IRREVERSIBLE CHANGES

Some changes are reversible, like the freezing and melting of water. But why are some changes irreversible?

YOU WILL NEED

- 4 apples
- 2 bowls
- A saucepan
- A knife
- Water

⚠ This experiment must be done under the **supervision of an adult** to ensure safety when cooking.

WHAT YOU DO

Step 1

Skin the apples at cut each one in half.

Step 2

Place four apple halves in a bowel of water and set aside.

Step 3

Place the remaining four halves in a saucepan and add the same amount of water, then heat the saucepan of apples for 10-15 minutes on the hob.

Step 4

When the apples in the saucepan have softened, remove them and place them in a bowl. Using a masher or a fork, mash and stir the apples that were cooked into applesauce. If you would like to eat the applesauce, try adding some sugar and cinnamon to make it taste better!

Step 5

Remove the water from the bowel of uncooked apples and see if you can mash and stir them, although you probably won't be able to!

THE SCIENCE BEHIND IT

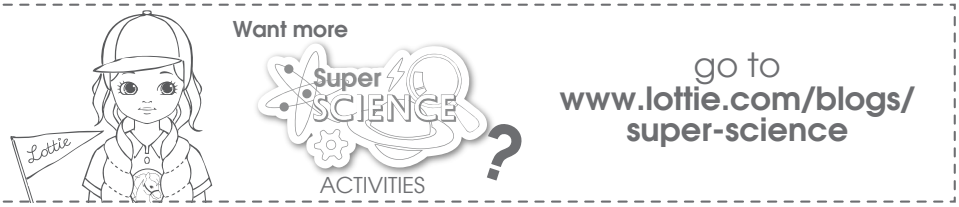
Everything is made from atoms. Atoms are like tiny little building blocks that are so small you cannot even see them with a microscope! Atoms join together to make molecules.

The apples you used in this experiment are made up of lots of different molecules, which all add up to keep the apple in shape. However, when you cooked some apples in water, heat from the hob broke down these molecules into little bits, and so the apples lost their shape and could easily be mashed into applesauce. However, the apples that were not heated stayed the same.

Therefore, this is an example of an irreversible change because once it has changed it cannot be undone, and there are lots of other examples. For example, when you boil an egg you cannot change it back, and the same is true when you bake a cake.

The most important thing about irreversible changes is that something new is always made from something else. In these examples, new molecules are made from other molecules, but in reversible changes nothing new is made.

For example, when you freeze water the water molecules do not change by breaking down or adding together, they stay exactly the same, which is why it can melt and form liquid water again!



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