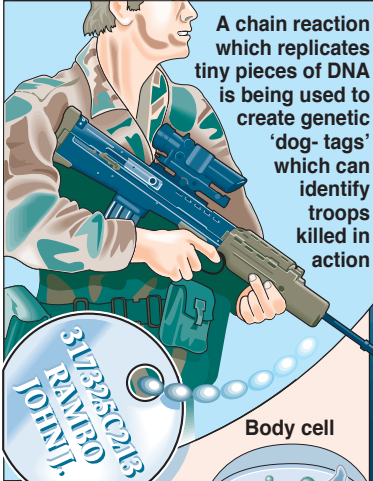
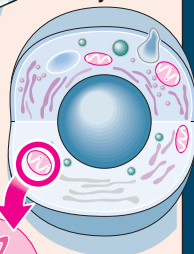


DNA 'dog-tags' identify unknown warriors

A chain reaction which replicates tiny pieces of DNA is being used to create genetic 'dog-tags' which can identify troops killed in action



Body cell

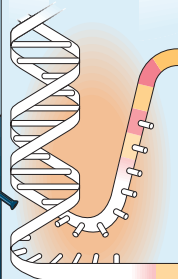


Mitochondrion

1 A minute sample of genetic material (DNA) is recovered from any of the mitochondria which exist within the body's cells

Mitochondrial DNA, inherited through the maternal line, can survive for many years

Target DNA



2 Heating causes the small piece of DNA molecule to unwind, breaking the bonds holding the strand together



DNA building blocks

DNA strand

Primer

Primer

3 The sample is cooled enabling primers – short sequences of DNA – to attach themselves to either end of the targeted strip. The primers determine where the copies will start

Polymerase

4 Polymerase enzyme triggers the building of two complete DNA strands. Heat breaks the bonds of the new strands and the process begins again

5 Billions of copies of the DNA are created within hours. Genetic typing allows a positive identification to be made

