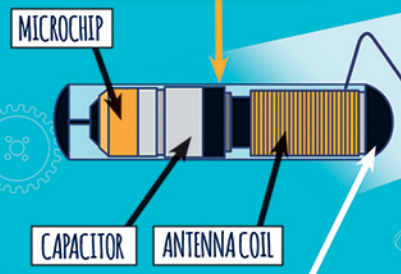
HOW STUFF WORKS

PET MICROCHIPS

In the last few years, microchips have replaced tags on collars as the best way to identify pets. As well as helping to reunite thousands of lost pets with their owners every year, they can also act as a pet's own front door key!

1 Using a very sharp needle, a tiny microchip, about the size of a grain of rice, is **IMPLANTED** under the pet's skin, usually in the back of the neck. Because there are few pain-sensing nerves in this part of the skin, the injection doesn't usually hurt them.

2 The microchip is made of glass and contains a **SILICON MICROCHIP**, **TUNING CAPACITOR** and **ANTENNA COIL**. They are sterilised and designed so that they don't cause infections or reactions in the animal.



3 Some microchips have a special plastic end cap that encourages connective tissue to grow around it to hold the chip in place and stop it moving around under the skin.

4 Special **SCANNERS** are needed to read the chip. These can be hand held, or mounted in devices such as cat flaps.

5 A field of **ELECTROMAGNETIC ENERGY** from the scanner is picked up by the **TUNING CAPACITOR** inside the microchip and converted into electrical energy. This energy is then used to broadcast the chip's unique identification number stored in its **SILICON CHIP**, using the **ANTENNA COIL** to create a radio signal.

6 The scanner picks up the **RADIO SIGNAL** from the microchip and displays the number on the screen. This number can then be checked against the database where the details of all microchipped pets are stored.

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7 **SMART CAT FLAPS** can check the identification number from each animal that approaches and only open the door to cats that live there.