How can electricity make a magnet?

The children are playing inside. Amy is doing some experiments with a set of magnets and the boys are playing with Steve's toy crane.

So many appliances use electricity. It makes a lamp light up, a fan spin, and a CD player play music.

Electric batteries also make this crane pick up these paper clips.
It must be magnetic like the magnet I've got.

But your magnet works all the time. This works only when I turn it on.

What do you think?
Let's see how the children find out.

1. We need a piece of wire about twice as long as I am. Mom said we should wrap it around this long steel nail.

2. I've left some wire loose at both ends, so we can connect them to the battery.

Let's see if it works like a magnet. We can test it with these metal paper clips.
Wow! It does work like a magnet. It's picking up the paper clips!

Why it works

A wire works like a magnet when electricity flows through it. Its magnetic strength can be increased by wrapping it around an iron nail. When you turn off the electricity, the magnet stops working. The magnetic effect of electricity can also be used to make motors turn in washing machines, fans, and CD players.

Solve the puzzle

How can you test the power of a battery? Make a magnet like Steve's and connect it to different types of battery. See which one picks up the most paper clips.