

Electric Charge

Many sub-atomic particles (particles even smaller than atoms), possess **electric charge**.

Experiments show that there are **two opposite types** of electric charge. To indicate the fact that they have opposite behaviour, they are referred to as **positive** and **negative** charge.

The type of charge possessed by **protons** is called **positive** and the type of charge possessed by **electrons** is called **negative** charge. (There is no significance in this choice; they could easily have been named the other way...)

The effects of electric charge can be seen when charged particles are placed near each other. Their behaviour is summarised below in the table below.

+	+	repel
-	-	repel
+	-	attract

Two particles repelling each other



Two particles attracting each other



Electric Current

An electric current is a **flow of charged particles**.

An electric current, in a metal, is a flow of **electrons**.

To measure electric current we use an **ammeter**.

The reading indicated by an ammeter depends on the **number of electrons passing through it per second**.

If the number of electrons which pass through the ammeter *in one second* is about

6 000 000 000 000 000 000*

we say that 1 Ampère (1A) of current is flowing.

In other words, the **unit** of measurement of current is the **Ampère**.

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* This is *not* a definition of what we mean by 1 A; it is the result of experiments. The definition of the Amp is based on the magnetic effect of electric current which will be discussed later.