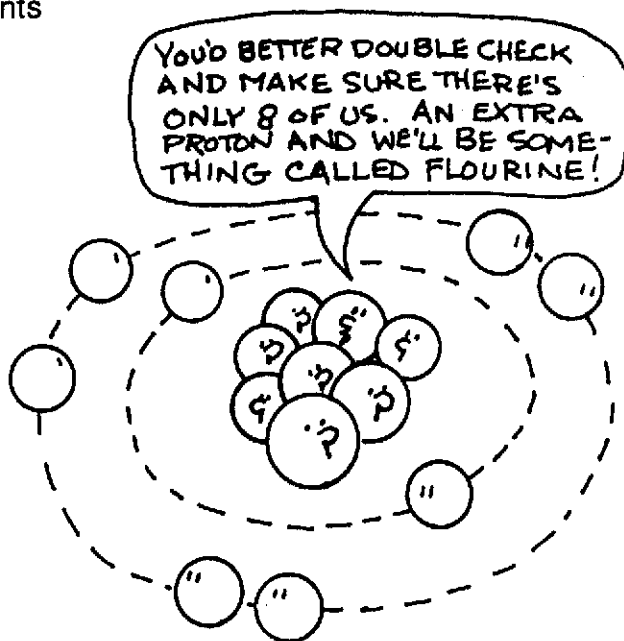


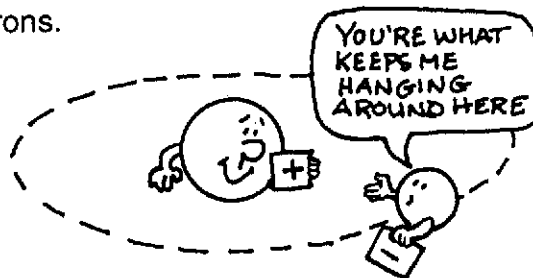
ATOMIC NUMBER

One of the differences between the elements is the number of protons and electrons that it has in its atoms. Scientists use the number of protons that an atom has as a way to describe and classify or group an element. No two elements have the same number of protons, thus no two elements have the same number of electrons. Scientists give elements an **atomic number** which is nothing more than the number of protons in each atom of that element. So if an atom has only one proton in its nucleus, it is always an atom of hydrogen and its atomic number is 1. If there are 8 protons in the nucleus, the atom is always an atom of **oxygen** and has an atomic number of 8.



PROTONS AND ELECTRONS ARE ELECTRONICALLY CHARGED

Both protons and electrons have electrical charges. A proton has a **positive charge** and is represented by a plus (+) sign. An electron has a **negative charge** and its symbol is a minus (-) sign. The letter *P* is used for protons and an *E* for electrons.



a hydrogen atom has one proton(+) and one electron(-)

The broken line shows that the electron is traveling around the proton. Since protons and electrons have electrical charges on them this means that they push or pull on each other. This push or pull is called an **electrostatic force**. When there are two charges of different kinds, one positive and one negative, they attract each other or try to come together. This attraction, between the positively charged