

WHAT'S ELECTRICITY?

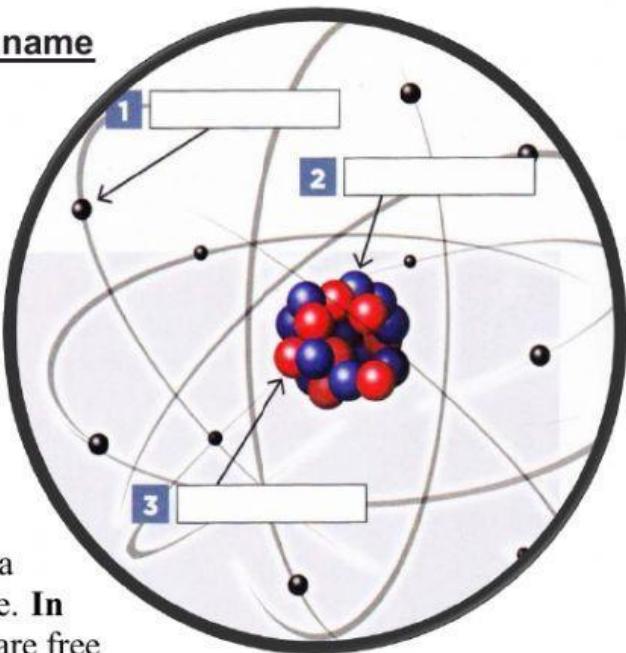
1 - Read the text and label the picture with the name of each part.

All substances, solids, liquids or gases, are composed of one or more of the chemical elements. Each element is composed of identical atoms.

Each atom is composed of a small central nucleus consisting of protons and neutrons around which **orbit shells** of electrons. These electrons are very much smaller than protons and neutrons.

The electrons in the **outermost** shell are called **valence** electrons and the electrical **properties** of the substance depend on the number of these electrons.

Neutrons have no electric **charge**, but protons have a positive charge while electrons have a negative charge. **In** some substances, usually metals, the valence electrons are free to move from one atom to another and this is what constitutes an electric current.



1- 2..... 3.....

2- Vocabulary work.

SPANISH	ENGLISH	pequeño		carga	
elemento		propiedades		libre	
sustancias		valencia		mover	

SPANISH	ENGLISH		current		have
	each		nucleus		another
	electric		orbits		outermost

3 Listen and complete the text with the missing information.

Electricity consists of a ¹ of free electrons along a conductor. To produce this current flow, a generator is placed at the end of the conductor in order to move the ²

Conductors

Electricity needs a material which allows a current to pass through easily, which offers little (³ to the flow and is full of free electrons. This material is called a conductor and can be in the form of a bar, tube or sheet. The most commonly used ⁴ are wires, available in many sizes and thicknesses. They are coated with insulating materials such as plastic.

Semiconductors

Semiconductors such as silicon and germanium are used in transistors and their conductivity is halfway in between a conductor and an ⁵

Small quantities of other substances, called impurities, are introduced in the material to ⁶ the conductivity.

Insulators

A material which contains very ⁷ electrons is called an insulator. Glass, rubber, dry wood and ⁸ resist the flow of electric charge, and as such they are good insulating materials.

4 Read the text again and decide if the following statements are true (T) or false (F)

- 1 A flow of electrons moving inside a conductor creates an electric current.
- 2 A generator is used to move the charges.
- 3 Electrons can easily pass through any material.
- 4 Any material is a good conductor.
- 5 Conductors are coated with insulators.
- 6 The presence of free electrons affects the conductivity of materials.
- 7 Impurities are introduced to increase conductivity.
- 8 Insulating materials resist the flow of electrons.