



WHAT IS ELECTRICITY?

2n ESO

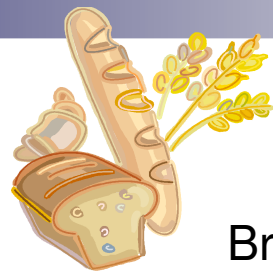
Belén Gallego Sanz. IES La Segarra



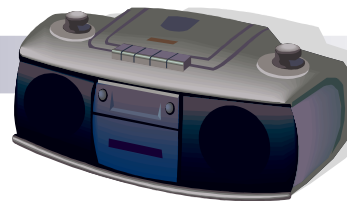
INTRODUCTION



Alarm clock



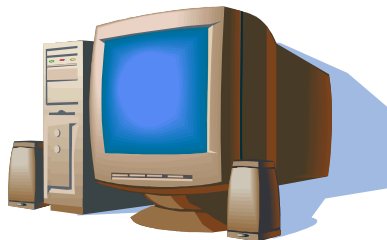
Bread



Cd-cassette player



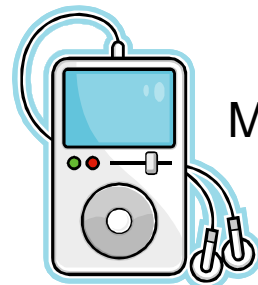
Toothbrush



Computer



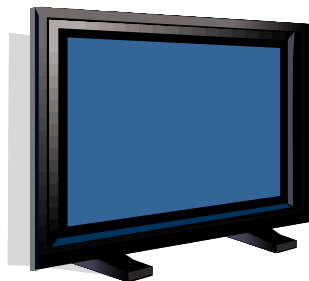
Console



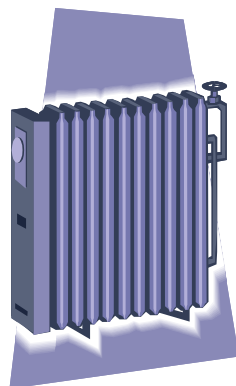
Mp3



DVD player



Television



Heater



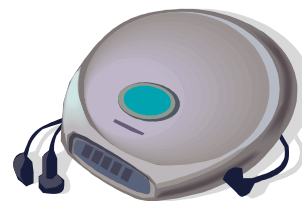
Washbasin



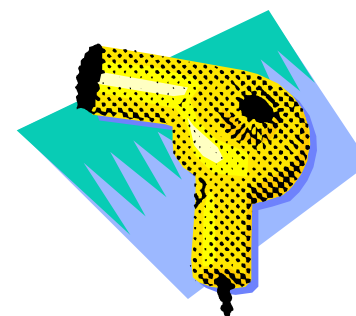
Mobile




Oven

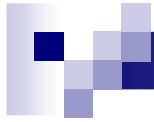


CD player

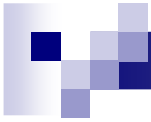


Hairdryer

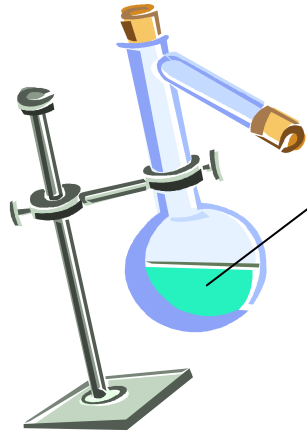
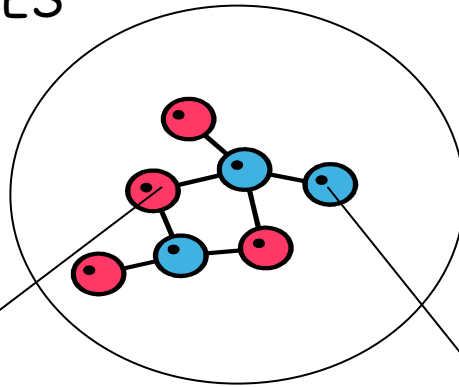
- 
- Which of these objects do you use every day?
 - Which of them need electricity to work?
 - Why is electricity important in our lives?



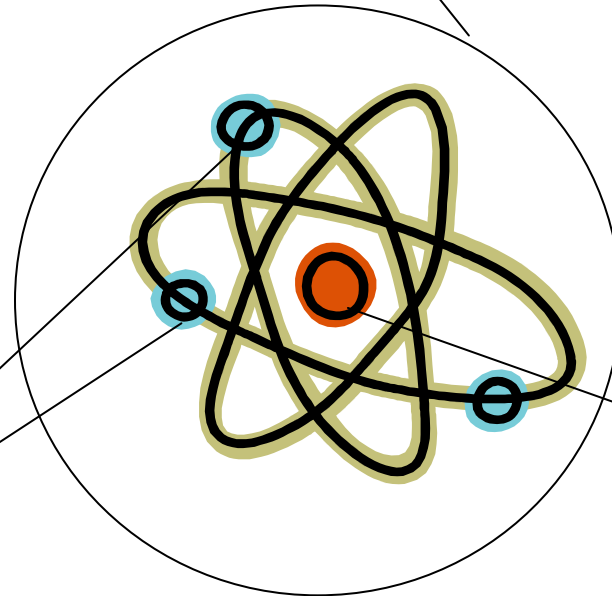
WHAT IS ELECTRICITY?



MOLECULES



ATOM



Electrons
Charge -

Protons
Charge +

Neutrons
Charge 0

Nucleus

Imagine you have scales...



It's un-balanced



It's balanced

If an atom has the same number of electrons as protons, will it be balanced or un-balanced?

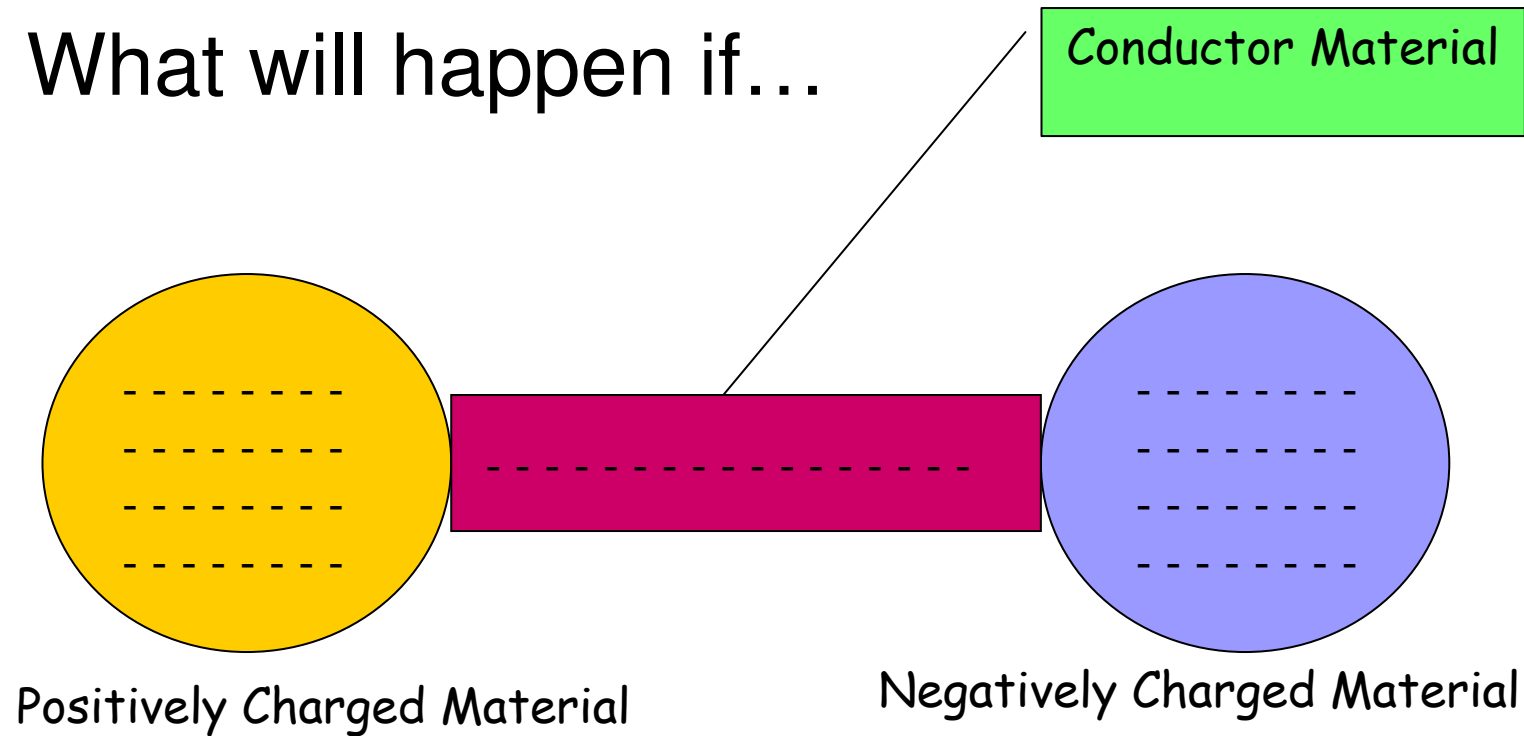
When an atom has $n^{\circ}\text{electrons} = n^{\circ}\text{protons}$ is balanced. It's called **STABLE ATOM**.



What we must know about atoms

- **Electrons** are moving around the **nucleus**
- **Protons** and **neutrons** do not move around the **nucleus**.
- A **stable** atom has the **same** number of **electrons** than **protons**
 - If an atom has **more** electrons than protons: it has **Negative** charge
 - If an atom has **fewer** electrons than protons: it has **Positive** charge
 - If an atom has **same** number of electrons as protons: it does **not** have charge.

- What will happen if...

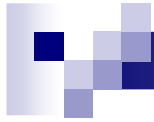


...excess electrons move from negatively charged material to positively charged material.



So now we can define **ELECTRICITY** as...

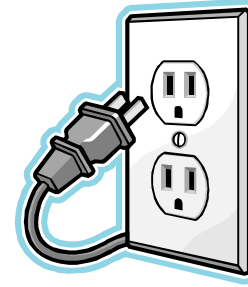
***ELECTRICITY** is a flow of electrons in a substance.*



**HOW IS ELECTRICAL
ENERGY PRODUCED?**

- Which of those electric devices needs to be plugged in to work?

Devices' picture



- Which of those electric devices needs a cell or a battery ?

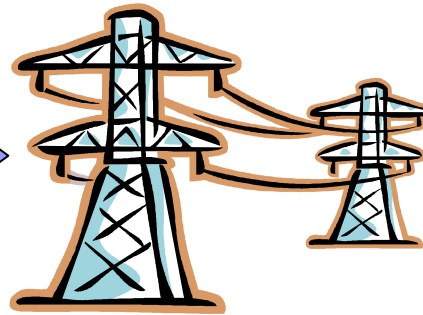
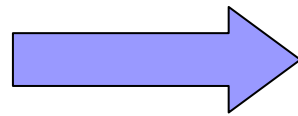


Where does electrical energy come from in any case?

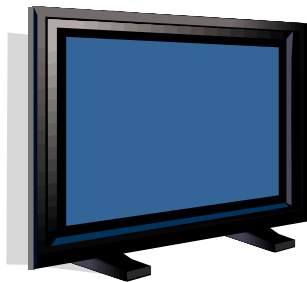
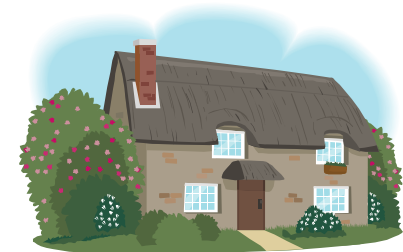
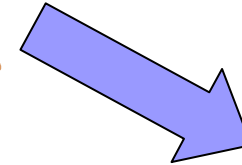
- If the device is plugged in...



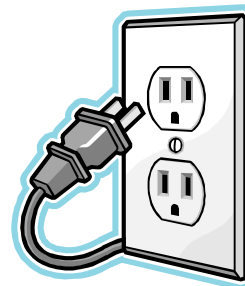
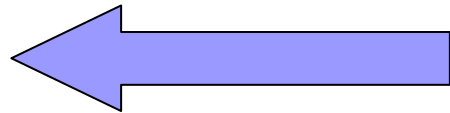
Power Electric Station



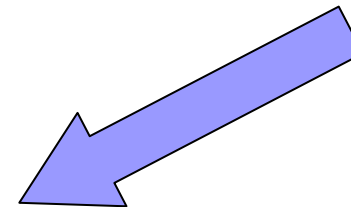
Electric grid



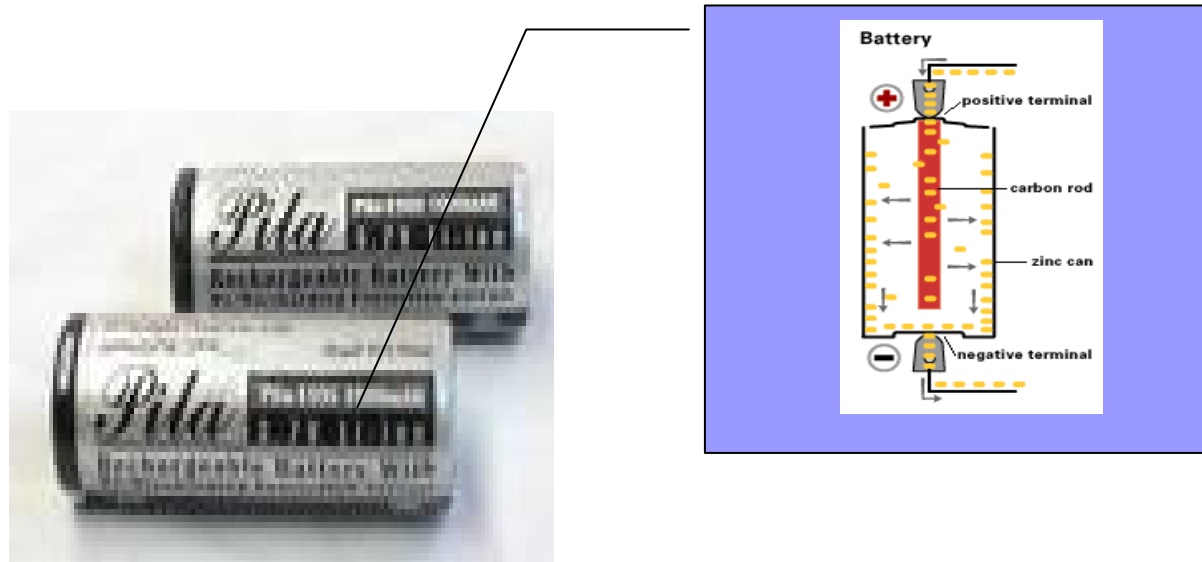
Television



Plug



- If the device works by means of cells or batteries...



As a result of a chemical reaction inside the cell push out electrons and give them energy.