

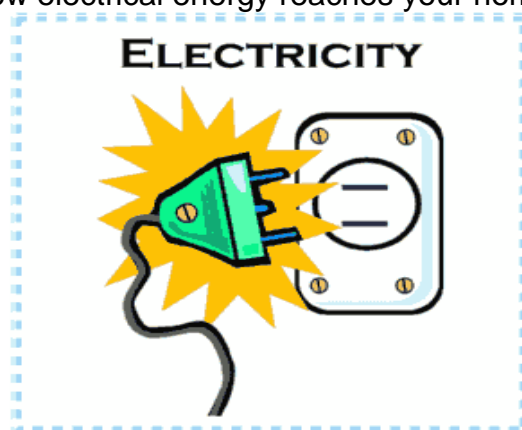
EXAMEN : BACCALAURÉAT GÉNÉRAL	SESSION 2011
ÉPREUVE : Évaluation spécifique de langue en section européenne	
PHYSIQUE-CHIMIE en langue ANGLAISE	SUJET N°9

Electricity explained

About what electricity is, how it behaves and how electrical energy reaches your home.

Many people think of electricity as something you buy from the power companies, but as well as coming out of the wall socket, electricity is one of the many ingredients that make up the universe.

All matter in the universe consists of molecules and atoms. Every atom consists of a nucleus orbited by one or more electrons. These electrons carry a negative charge whereas the nucleus is positively charged.



We're all familiar with the effects of static electricity. We are not often aware of electricity around us as the positive and negative charges that usually balance. When certain objects touch, however, electrons can jump between them. For instance, when you rub a balloon against your hair electrons will jump across to the balloon giving the balloon stationary negative charge or static electricity. Static electricity relies on electrons not being able to move around easily. Materials like wood, glass, ceramics and cotton all have electrons that like to stick with their atoms and because the electrons don't move, the materials can't conduct electricity very well.

In most metals, electrons can move freely to form an electric current. When charges move, the electrical current flows, and this is the power that drives much of the contemporary world. Current can be measured by the amount of charge passing through a fixed point each second.

adapted from : HOW IT WORKS ANNUAL 2010

Questions:

1. Present and comment on this document.
2. Do not forget to focus on at least one physics and/or chemistry topic as for example the microscopic explanation of electricity in solids or fluids.
3. Comment on the different ways of producing useful electricity.