

READING

Light

Light is a form of electromagnetic radiation that is visible to the human eye. It is what allows us to see something. The sun is a source of light and so are the light bulbs in your house when they are turned on. A source of light will illuminate objects that it is shined upon, and that light is then reflected from those objects and towards our eyes, which is what we see. Light is made up of different colors which is what allows us to see objects in different colors. When light shines on an object, the different colors of the object that we see (such as red, yellow, and green) is due to some colors of light being absorbed by the object and other colors of light being reflected by the object. The light that is reflected is what we see, and the color of the reflected light is the perceived color of the object. The color of the light that an object reflects depends on the surface properties of the object. For example, some objects appear red and others appear green, depending on the surface properties of the object. The large variety of color that we see in the world is due to the large variety of color combinations that reaches our eyes from reflected light. If all light is reflected from an object we see it as white. If no light is reflected from an object we see it as black. The color white is all the colors combined, and the color black is actually the absence of color (since no light is reflected and hence does not reach our eyes).

Magnetism

Magnetism is an invisible force of nature, like gravity. It is caused by the magnetic properties of certain materials. A magnet can, like gravity, attract another object toward itself, but it can also repel an object away from itself, provided that the other object is also a magnet oriented a certain way relative to the first magnet (this is demonstrated with the toy shown below). With magnetism only one object needs to be magnetized to attract another object, provided that the other object is a ferrous metal such as iron. Two magnets will also attract each other. However, a non-ferrous metal such as aluminum cannot be attracted to a magnet due to its atomic structure. Only metals can be turned into magnets, and it is only those metals which are attracted to magnets which can themselves be turned into magnets, such as iron. Metals can be turned into magnets by wrapping loops of wire around them and then running an electric current through the wire. But exactly how this works is something that is taught in advanced physics courses. Some magnets exist naturally such as lodestone.

Electricity

Electricity is the flow or movement of electrically charged particles. It is a form of energy. The outlets in your home are a source of electricity and you plug appliances into them in order to make them run. The great usefulness of electricity is due to its ability to be carried over long distances. In addition to the outlets in your home, another source of electricity is batteries, which you use to power things such as radios and flashlights.