Hello, sir/ma'am,

I am Anirudh Vempati, grade 8 of Unicent school.

I'd like to provide the following article for the NIE paper: -

**Title: "Understanding the Simple Electroscope"**

Article:

A simple electroscope is a device that can detect the presence of an electric charge. It consists of a metal rod (typically made of copper) with a metal disc or antenna-like structure with copper wire at the top, and two thin metal leaves hanging from the bottom of the rod. The rod should have a hook-like structure at the bottom so that the aluminum leaves can hang without falling easily. The leaves are typically made of aluminum foil and are attached at the bottom of the rod inside a glass jar.

When an object with an electric charge is brought close to the top part of the electroscope, the charge transfers to the metal rod and then to the leaves. If the charge is positive, electrons transfer from the leaves to the rod, leaving the leaves positively charged. If the charge is negative, electrons transfer from the rod to the leaves, leaving them negatively charged.

Since like charges repel each other, the leaves move apart when they become charged. The greater the charge on the object being tested, the more the leaves move away.

A simple electroscope can determine if an object is charged and roughly measure the amount of charge on it, but it cannot determine whether an object is positive or negative.

Although an electroscope is primarily designed to detect static electric charges, it is possible to use an electroscope to detect the voltage of a battery. This can be done by connecting one terminal of the battery to the metal rod of the electroscope and the other terminal to the ground, which creates a static charge. The amount of deflection of the leaves can then be used to estimate the voltage of the battery. However, this method is less accurate than using a voltmeter.

Generally, a simple electroscope cannot detect the presence of a charge in a battery. A battery has a different voltage between its two terminals, which can drive an electric current through a circuit. An electroscope is designed to detect static electric charges that do not move and build up on the surface of an object due to friction. On the other hand, a battery produces a flow of electric charge through a circuit.

by Anirudh Vempati

