

Current from Coins

The Action Discover how a penny and a silver dime can produce an electric current when immersed in a solution of salt water. We will use a galvanometer to measure the current produced.

Grade Level Grade 9 – Using Electricity
Physics 30 - Electricity

Materials Penny
Dime (minted in 1964, or earlier)
Water
Salt
Petri dish
Galvanometer

Instructions Clean the dime and penny in detergent. Drop them into the Petri dish, and pour in some salt-water solution (just enough to cover the coins). Connect alligator clips to each coin and the other ends to the galvanometer. A galvanometer is a device used to detect tiny electrical currents. Once the clips are connected to both the coins and galvanometer, observe the current produced.

Safety

Hints

Science Principle The kind of current electricity that was produced comes from a chemical source. The energy (in this case) comes from dissimilar metals (the penny and the dime). Some metals tend to lose electrons easily and some metals gain electrons easily. When there is a path between the two types of metals, the electrons will move from one to the other. That movement is called an electrical current. The current produced from these coins is quite apparent on the meter. If the old silver dimes are not available, you can use other metals such as zinc, aluminium, brass, or tin. You can experiment to see which metal produces the best current.

In this experiment we also have the opportunity to study conductors. Electrical currents do not travel

through all materials. Substances that are good carriers of electricity are called conductors. In this experiment, our salt-water solution acts as a conductor.