# Fruity Batteries

**You'll get a real charge out of this citrus.**

## WHAT TO DO

**Insert one strip of zinc and one strip of copper into one of the citrus fruits, making sure they do not touch each other. Use the wire leads to connect the copper strip to the "+" terminal and the zinc strip to the "-" terminal of a small piezo buzzer and listen for the sound produced.**

## WHAT'S HAPPENING?

**When two different metals are connected together electrons will briefly flow from one to the other until the repulsive force of the surplus charge prevents further flow. Placing these metal electrodes into a suitable solution, like the juice in a lemon or orange, allows for specific chemical reactions (called oxidation-reduction reactions) that consume the extra electrons at one electrode (called the cathode) and provide new electrons at the other (called the anode), allowing a steady current of electricity to flow through connecting wires to power simple devices like a buzzer, digital clock or LED (light emitting diode). The driving force, or voltage, that produces this electric current depends on the type of metal electrodes used, as well as the type of solution (called the electrolyte). The current (i.e. the amount of electrons) that flows also depends on the size of the electrodes. Experiment with different fruits, potatoes or solutions (acids or even salt water) and different electrode metals and sizes. You may need to connect multiple battery cells together to produce enough voltage and current to operate some devices.**