

## Bio-Batteries

Using the materials supplied, construct various bio-batteries. (Read the questions below before you start.) For each battery that you construct, record enough data to allow you to answer the questions in a neatly organized lab report. When describing your specific bio-batteries, be sure to include details such as the fruit or vegetable used, the types of metals involved, the distance between electrodes, the voltage and the size of the fruit or vegetable so that someone might be able to duplicate your results.

Your teacher may ask you to produce a detailed report including a title page and the full sentence/paragraph answers to the questions below.

1. Which combination of metals always gives the highest voltage?
2. What is the highest voltage you can produce?
3. Which fruit or vegetable gives the highest voltage?
4. Give the specifics and draw a labelled diagram of the device that gave the highest voltage.
5. Construct (if possible) and draw labeled diagrams of three different bio-batteries that produce approximately 0.1 V, 0.2 V and 0.5 V.

### Further Discussion

1. Can you categorize the fruits and vegetables as to which make better batteries? What is it about them do you think that makes them better or worse?
2. What are the most significant differences between these batteries and the classic galvanic cells you have been studying in this unit?
3. Give some reasons why the voltages exhibited by the specific electrodes are different from the values on the SRP table.

Have Fun!!!