

TEACHER INFORMATION

Lemon “Juice”

1. Number 2 pencils cut to a length of about 15 cm and sharpened at both ends serve well as carbon electrodes.
2. Iron nails, 4 cm lengths of magnesium ribbon, and 4 cm × 1 cm pieces of zinc work well.
3. Consider cutting the slits in the lemons prior to class. The lemons can be reused.
4. The procedure directs students to electronically record voltage data using Events with Entry mode. Another possibility is to record data from the meter without starting a data collection.

SAMPLE RESULTS

Probe lead		Voltage (V)	Observations	Probe lead		Voltage (V)	Observations
Red	Black			Red	Black		
C	Fe	0.71	rises slowly	Fe	C	−0.49	steady
C	Mg	1.80	drops slowly	Mg	C	−1.59	steady
C	Zn	1.21	steady	Zn	C	−0.88	steady
Fe	Mg	1.32	drops	Mg	Fe	−0.94	steady
Fe	Zn	0.58	steady	Zn	Fe	−0.25	drops slowly
Mg	Zn	−0.50	steady	Zn	Mg	0.87	drops fast

ANSWERS TO QUESTIONS

For Sample Answers to the questions in this lab, please contact Vernier Software and Technology at swnanswers@vernier.com