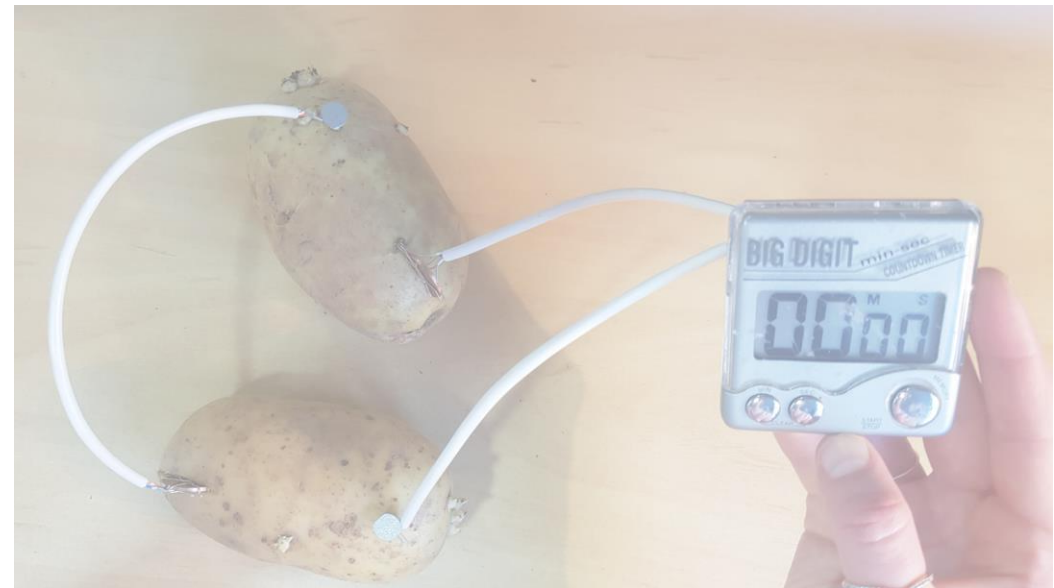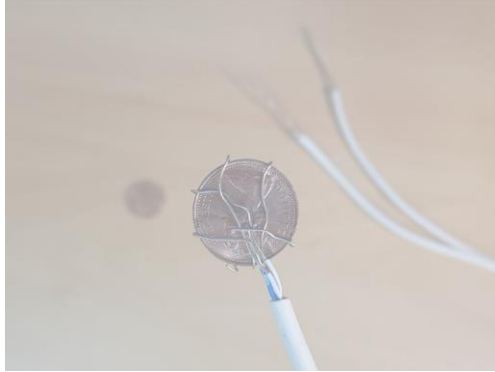# LOCKDOWN LABS: POTATO BATTERY

POTATO BATTERY

EQUIPMENT:

- 2+ Potatoes
- 2 Copper coins
- 2 Zinc coated/galvanised nails
- Conducting wire
- Sharpe knife
- Something to power with your potato e.g. small digital clock, timer, multimeter (voltage range 1 – 2 Volts)

POTATO BATTERY

1. With the conducting wire wrap the ends of the wire around the copper penny so that the coin is secure. Repeat this with another piece of wire and the second coin.


2. Use the sharp knife to pierce the potato and cut a small slit about the size of the penny and then insert the coin and the copper wires into the potato. Repeat this with the second potato and coin.

3. Wrap the ends of one of the wires connected to the potato around the galvanised nail. When this is secure insert the nail into the second potato.

4. Using the third piece of conducting wire, wrap the remaining nail securely with the wire and interest this nail into the first potato.
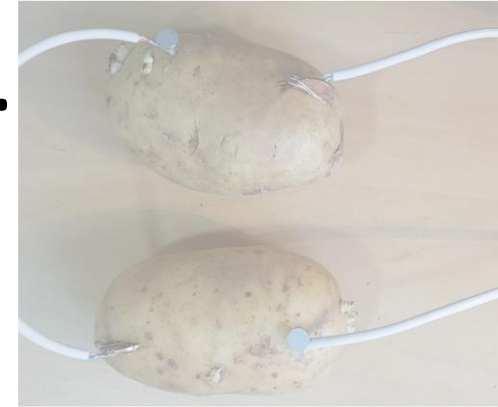

5. Connect you battery up to what you wish to power, here I am using a digital multimeter to measure the voltage from our potato's. You can see, my potato's produce a voltage of 1.776 volts.

POTATO BATTERY KS3

- What is electrical current and what units do we measure current in?
- What is electrical voltage and what are the units we measure voltage in?
- What kind of circuit do we have in this experiment and what does this mean about the current in the circuit?
- What is the other kind of circuit possible and how is the current different in this circuit?
- What is the formula that relates voltage and current?
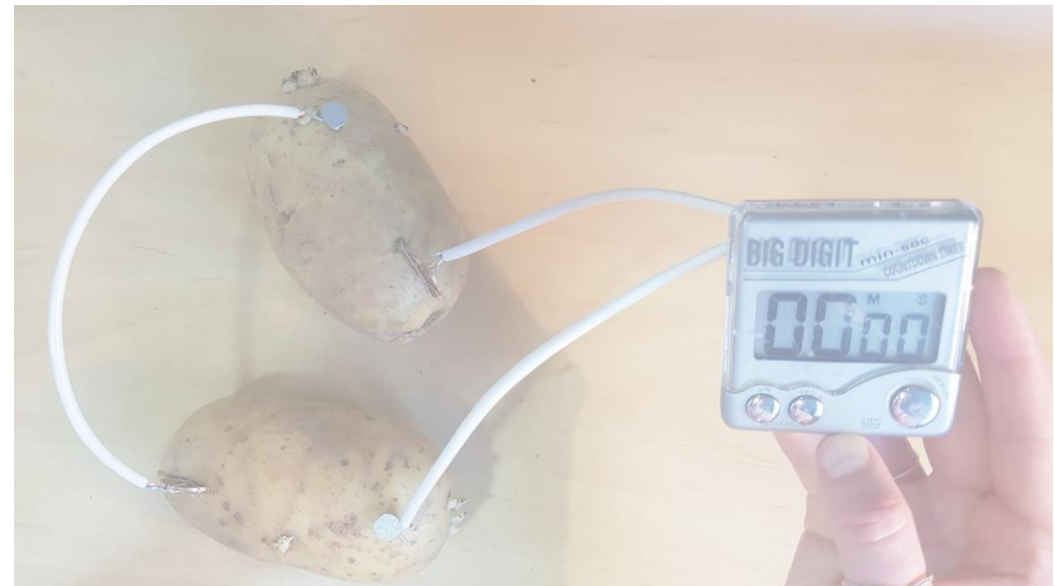
POTATO BATTERY GSCE

- What type of circuit is in this experiment?
- If the resistance of both potatoes is 4.5 Ohms, what is the total resistance of the system?
- What is the equation relating power, voltage and resistance?
- Using your measure voltage, calculate the power output of your circuit?
- How you change this experiment to increase the power output?

Bonus Questions: (Higher Tier)

- What is an oxidation reaction?
- What is a reduction reaction?