

Potato power!



Experiment with a vegetable and some different metals and watch as the chemical reaction between them creates energy

Suitable for all

You will need (per group)

- potato
- sharp knife and chopping board
- pieces of copper wire x 3
- pennies x 2
- long zinc-plated nails x 2
- light bulb and bulb holder

Instructions

- 1** Split your section into small groups. Ask each group to safely cut their potato in half. In each half, they should cut a slit big enough to fit a penny inside.
- 2** Tell them to wrap a piece of copper wire a few times around each penny, with loose ends on both.

3 Each penny should be placed halfway into a slit in the potatoes, leaving the loose ends of the copper wire sticking out.

4 Next, ask the young people to take a zinc-plated nail and wrap it with the third piece of copper wire. As before, ask them to leave one end loose. Stick the nail into one of the potato halves.

5 Ask them to pick up the potato with the nail in it and take the loose end of the wire that's on the penny and wrap it around the second nail. This nail is then stuck into the other half of the potato.

6 Finally, ask them to connect the two loose ends of the wire to the light bulb holder and watch it light up!

Time needed
45 minutes

Badge



The Institution of Engineering and Technology (IET) partners the Scout Electronics Activity Badge

Partner



Outcomes

Your group will be introduced to the basics of electronics and conduction by learning how to harness the energy stored in vegetables to power a light bulb. The activity uses three simple circuits to conduct energy when the different metals and juice from the potato create a small amount of voltage.

Taking it further

Scouts could take it further by completing a digital electronics project, such as the reaction and memory game, which requires a kit and uses resistors, LEDs and switches to test reaction times and memory. For more information, click on the Scout Electronics Activity Badge link here: scouts.org.uk/iet.

More information

The Institution of Engineering and Technology is one of the world's largest professional engineering institutions, which aims to encourage young people to consider further learning and careers in the engineering and technology sector. For more information go to: scouts.org.uk/iet.

