

Alternating current – literacy task

A battery supplies direct current so what's alternating current?

Cells and batteries supply electricity as a direct current. This means that the electricity makes its way around the circuit on one direction only. The potential difference (voltage) using direct current is low, usually about 1.5V for torches.

When you switch a light on at home, you use an alternating current (A.C) because mains electricity is an A.C. supply. An alternating current constantly changes direction about 100 times a second. It flows in one direction then in the opposite direction in cycles. It's potential difference averages 230V – enough to power hairdryers and kettles.

Mains circuits

Every mains has a live wire and a neutral wire. The current through a mains appliance alternates because the mains supply provides an alternating potential difference between the two wires. The neutral wire is earthed at the local substation. The live wire is dangerous because its potential repeatedly changes from + to – and back every cycle. It reaches over 300V in each direction.

Task

- ① Compare alternating and direct current.
- ② Why is direct current not used to supply mains electricity?
- ③ Research a device called a cathode ray oscilloscope. Describe how it works and why they are useful.
- ④ What is the function of a diode and how does it link to alternating current and direct current.

Questions

- ① Create a food chain from the foods mentioned in the paragraph.
- ② What is photosynthesis?
- ③ What advantages are there to using pesticides?
- ④ What disadvantages are there to using pesticides?
- ⑤ Research what bioaccumulation is and explain its impact.