

Electrical Circuits and Conductors



This project teaches children about electrical appliances and safety. They construct simple series circuits and name their parts and functions, including switches, wires and cells. They investigate electrical conductors and insulators and identify common features of conductors. It also teaches children about programmable devices. They combine their learning to design and make a nightlight.

- Sources of electricity; Electrical devices;
- Electrical components; Series circuits; Complete and incomplete circuits;
- Conductivity; Conductors and insulators;
- Wired plugs;
- Incandescent light bulbs;
- Future of electricity;
- Working scientifically – Identifying and classifying, Pattern seeking, Comparative test, Research

Children will learn about the importance of electricity to our daily lives and the two sources, mains electricity and cells or batteries. They will discuss the dangers of mains electricity and safety measures. They will learn about a range of electrical components, such as cells, batteries, wires, lamps, buzzers and motors, and use them to construct series circuits, exploring the effect of adding and removing different components. Your child will learn to recognise the difference between a complete and incomplete circuit and examine ways of fixing incomplete circuits. They will also learn about conductivity and investigate various materials to discover which are conductive or non-conductive. Your child will learn about electrical conductors and insulators and use this knowledge to make switches and examine plugs, identifying their parts, materials and safety features. They will ask and answer research questions about incandescent light bulbs and write a scientific report. They will learn about programmable technologies and then create programs to control a set of traffic lights. Your child will use the knowledge gained throughout the project to design, make and evaluate a nightlight. They will complete their learning by discussing the future of electricity and the natural resources harnessed to create sustainable energy.