Progression of skills, knowledge and understanding: Electricity

- National curriculum level statements
  - Additional statements from QCA (2003)

Level	Characteristic of level
1	• ***Communicate observations*** of **changes** in light, sound or movement **that result from action** (e.g. switching on a simple electrical circuit) ➢ **Name some components** of a simple electrical circuit ➢ **Name some electrical appliances.** ➢ ***Describe*** **the affect of making and breaking** one of the contacts in a circuit.
2	• Know about **a range of physical phenomena** and ***recognise and describe*** **similarities and differences** associated with them. • ***Compare*** the way in which **devices (e.g. bulbs) work in different electrical circuits.** ➢ Know that **batteries are a source of electricity.** ➢ ***Construct*** **a simple circuit** consisting of a battery, two wires and a bulb in a holder such that the bulb will light. ➢ ***Compare*** the **differences in the effects of old and new batteries.** ➢ ***Use drawings*** **to record circuits** that have been made.
3	• Use knowledge and understanding of physical phenomena to ***link cause and effect in simple explanations*** (e.g. a bulb failing to light because of a break in electrical circuit). ➢ ***Recognise*** that, for a **circuit to work it must be complete.** ➢ ***Recognise*** the need for **good connections** in circuits. ➢ ***Construct*** circuits with **more than one bulb.**

	➢ Know that the '**amount' of electricity depends on the number of batteries**. ➢ ***Construct*** **a home-made switch and home-made bulb holder** without help. ➢ ***Demonstrate*** that some materials placed in a circuit are **conductors** (allow bulbs to light) and others are **insulators** (do not allow bulbs to light). ➢ ***Draw*** **complete circuits** using pictures to represent components.
4	• ***Describe and explain*** **physical phenomena** (e.g. how a particular device may be connected to work in an electrical circuit). ➢ Understand the **use of conductors and insulators in components** including connecting wires. ➢ Know that the **effect on the brightness of bulbs of connecting them in series** ➢ Are **methodical in tracing faults** in simple circuits. ➢ ***Draw diagrams,*** **using standard symbols,** of the series circuits they have constructed. ➢ ***Describe*** the **completeness of the path** taken by the current in a series circuit. ➢ **Know how more than one battery in a circuit needs to be connected.**
5	• ***Use ideas to explain how*** **to make a range of changes** (e.g. altering the current in a circuit) ➢ Know that **most electrical components have two terminals** ➢ ***Construct*** **a series circuit from a diagram** which uses standard symbols. ➢ ***Explain*** **the current in circuits using simple models** such as piped water or a bicycle chain. ➢ ***Identify*** **metals as electrical conductors.**