

Science: Electricity Y4	
Definition: Electricity a form of energy resulting from the existence of charged particles (such as electrons or protons), either statically as an accumulation of charge or dynamically as a current	
Physics definition: Physics is the study of nature and how matter and energy behave	
POS: Y4 Electricity <ul style="list-style-type: none"> Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors. 	
Prior learning EYFS: <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal) used the words 'conductor' 'insulator' when describing materials 	Links to other science topics: <ul style="list-style-type: none"> materials and their properties
Disciplinary concepts: Structure – how is your circuit arranged? Function – what is the purpose of the switch? Why are the wires coated in plastic?	
Common misconceptions: <ul style="list-style-type: none"> electricity flows to bulbs, not through them electricity flows out of both ends of a battery electricity works by simply coming out of one end of a battery into the components different coloured wires effect how the circuit works wires are made from plastic electricity is an object that can be seen current, voltage and electricity are all the same thing current gets less as it passes through components if a circuit is broken energy goes off into the air electricity comes out of both ends of the battery and leads to both sides of the component 	
Core Knowledge: <ul style="list-style-type: none"> household devices and appliances run on electricity. Some plug in to the mains and others run on batteries. an electrical circuit consists of a cell or battery connected to a component using wires. if there is a break in the circuit, a loose connection or a short circuit, the component will not work. a switch can be added to the circuit to turn the component on and off. metals are good conductors so they can be used as wires in a circuit. non-metallic solids are insulators except for graphite (pencil lead). water, if not completely pure, also conducts electricity. 	
Wider Knowledge: <ul style="list-style-type: none"> railway safety https://www.networkrail.co.uk/communities/safety-in-the-community/safe dangers of lightning http://www.weatherwizkids.com/?page_id=70#:~:text=What%20causes%20lightning%3F,collisions%20create%20an%20electric%20charge. 	
Working scientifically: <ul style="list-style-type: none"> identifying everyday objects according to the given property asking simple questions and recognise that they can be answered in different ways observing closely using simple equipment perform simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions 	
End Goals: <ul style="list-style-type: none"> identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit recognise some common conductors and insulators, and associate metals with being good conductors 	
CPD: Reach out CPD Science Association / STEM website	