Year 4 SCIENCE Topic 4: Electrical Engineers (4 Weeks)		
Assessment Questions: 1. Why do we need to be careful when using electricity? 2. Why are plugs covered in plastic? 3. How did you make this experiment a fair test? 4. When you tested the conductors, did you find that they had any similar properties? 5. How do I make a bulb light up? 6. Can you name 3 insulators and 3 conductors?		
Values: Justice and Courage		
KNOW	DO	UNDERSTAND
S: identify common appliances that run on electricity S: construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers S: 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 S: recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit S: recognise some common conductors and insulators, and associate metals with being good conductors ***Vocabulary:*** *electricity, series, circuit, cells, wires, bulbs, switches, buzzers, loop, conductors, insulators, metals, component, cell.* Children know that common appliances ran on electricity. Children know examples of these appliances. Children know how to create a simple circuit, using cells, wires, bulbs, switches and buzzers. Children can also correctly identify each component. Children know whether a lamp will work, based on whether it is connected to a cell. Children know that electricity flows around a complete circuit; if a circuit is broken, this will not happen. Children will know that a switch is used to complete and break a circuit. Children know what a switch looks like in everyday life. Children know what conductors and insulators mean. They know names of conductors and of insulators.	WS: setting up simple practical enquiries, comparative and fair tests WS: recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables WS: identifying differences, similarities or changes related to simple scientific ideas and processes WS: using straightforward scientific evidence to answer questions or to support their findings. Children can draw a pictorial representation of a circuit, however symbols do not have to introduced at this time. Children can devise a test to determine whether they are conductors or insulators. They can make it a fair test, by only changing one variable – the material. From this test, they can find similarities about which materials are conductors, mainly metals etc. Children can record these results on a table. Throughout this topic, children are encouraged to question and then test their questions.	*PRIOR LEARNING: This is completely new learning for the children. They are used to sorting materials into categories, but they have not done any work on electricity.* We need the children to see the real-life contexts and implications, rather than just making a circuit with bulbs. We want the children to understand plugs and why they are plastic and earthed. Children should understand the difference between mains and battery-power, and understand the dangers of mains electricity. We want them to use their understanding of circuits, switches and bulbs/buzzers to make a game for Year 1 children in D.T.

Year 4 ART Topic 4: Electrical Engineers		
Assessment Questions Who has inspired your work? Talk me through the design process. How is comic art different to other styles of drawing you have learnt? What are the stylistic features of comic book art? Justice and courage		
KNOW	DO	UNDERSTAND
Know how to create digital art Know how to create a visual storyboard Can explain how the stylistic features of comic book artists Know how to create comic characters inspired my comic-book art. Key vocabulary: Digital art Visual storyboard Design Stylistic features	Children create digital Comic Art, with the use of Computing to create comic strips – free App like Comic Life (free for a month). Children will need to develop a character and story-board their ideas – an important stage of the design process. **NC Aims:** - produce creative work, exploring their ideas and recording their experiences - become proficient in art, craft and design techniques *(digital art)* - evaluate and analyse creative works using the language of art, craft and design - know about great artists, craft makers and designers, and understand the historical and cultural development of their art forms. **NC Content:** Pupils should be taught to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design. - to improve their mastery of art and design techniques *(digital art)*	This is an electricity unit, but does also include work where the children see the practical implications of electricity: circuits, switches, conductors and insulators, as well as real-life contexts and implications. Children will use this basis to develop a series of digital Comic Art; using the iPads/laptops to create a comic strip, perhaps a piece of fiction, linked to a character developed in English or Science? Or perhaps a character to explain the concepts of their Science learning for non-fiction. Children have not previously used this computing programme, and so will be developing brand new digital art skills.