



Year 3 Design and Technology Knowledge Organiser: Electrical systems; Simple Circuits and Switches



Design use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups, generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately, select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate investigate and analyse a range of existing products, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, understand how key events and individuals in design and technology have helped shape the world

Technical knowledge apply their understanding of how to strengthen, stiffen and reinforce more complex structures, understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

Prior Learning

Design Design purposeful, functional, appealing products for themselves and other users based on design criteria
generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

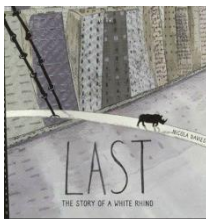
Evaluate Explore and evaluate a range of existing products evaluate their ideas and products against design criteria

Technical knowledge Build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products

Key Vocabulary

Mechanism
Switch
Circuit
Bulb
Battery
Current

Key Artist/ themes: Africa and Last



Investigate (style / techniques / examples):

- I can explain how key events and individuals in design and technology have helped shape the world.
- I can make and represent different types of circuits.
- I can make and use switches.
- I can develop and communicate a design for my light.
- I can select materials and components to make my light.
- I can create a well-finished product.

Design and Create:

An electrical system with a battery operated switch that is made for a purpose, which will be designed and created with the children's own research and ideas. The modelled idea is a torch which will be used as a deterrent to stop and track poachers on the African nature reserve.



Evaluate:

To use their sketch books to record their observations and use them to review and revisit ideas in the design, making and evaluating process.

Evaluate their chosen book and the mechanical systems used.