



Unit of work
Christmas themed Cams

Year group: 5

Prior learning

- Understanding of the essential characteristics of a series circuit and experience of creating a battery-powered, functional, electrical product.
- Initial experience of using computer control software and an interface box or a standalone box, e.g. writing and modifying a program to make a light flash on and off.

National Curriculum

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

Knowledge

- To be able to use and suggest improvement to CAM systems.
- To be able to name and explain the purpose of: junior hacksaws, bench hooks, G-clamps, hand drills, drill bits, safety goggles, glue guns, batteries, lamps and wires.
- To be able to name a range of materials such as: paper straws, plywood, wooden dowel, grey board, elastic bands, cardboard and paper
- To be able to explain how to work safe using DT equipment
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in products

Skills

- To be able to design a purposeful product based on a design brief
- To be able to select from a range of tools
- To be able to cut accurately and safely
- To be able to create a mock-up and suggest improvements
- To be able to make a product based on a design brief
- To be able to test and evaluate against the design brief

Vocabulary and definitions

Word	Definition
propulsion	the action of driving or pushing forwards.
battery	a container consisting of one or more cells, in which chemical energy is converted into electricity and used as a source of power.
circuit	a complete and closed path around which a circulating electric current can flow
CAD	Computer Aided Design
voltage	an electromotive force or potential difference expressed in volt
mock-up	a model or replica of a machine or structure
current	a flow of electricity which results from the ordered directional movement of electrically charged particles
materials	the matter from which a thing is or can be made
wheels	a circular object that revolves on an axle and is fixed below a vehicle or other object to enable it to move easily over the ground.
axels	a rod or spindle (either fixed or rotating) passing through the centre of a wheel or group of wheels.

Significant people:
George Stephenson



George Stephenson was a British civil engineer and mechanical engineer. Renowned as the "Father of Railways"

