

Alder Coppice Primary School — Knowledge Organiser

DESIGN & TECHNOLOGY

Year: 5

Unit 3: MECHANICS

Links to: SCIENCE

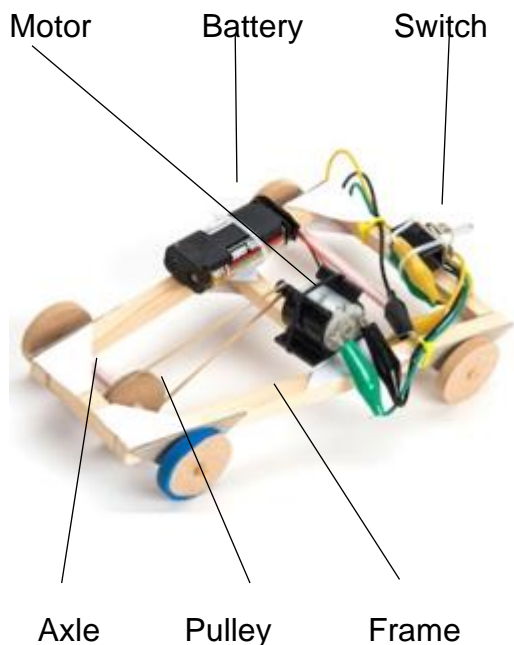
What I Should Already Know:

Some things can move in different ways
Naming some direction of movement and how things move
To know that a mechanism provides movement
To know what a wheel mechanism is
To know what a lever is and how it works
To know what a slider mechanism is and how it works.

Skills & Enquiry:

Communication - ideas, observations, comparisons, preferences
Physical –
Skills to manipulate materials and use tools
Thinking -
To generate ideas for design
To select materials for a purpose
To select appropriate tools/ techniques
Investigate –
To investigate mechanisms and electrical circuits

Diagrams:



Unit Specific Vocabulary:

Mechanical system - takes an input force (motion) and processes it to produce and output force (motion)
Axle – a rod that enables a wheel to turn
Bearing - part of a machine that allows one part to rotate or move
Circuit - a cell or battery connected to components using wires. It must be a complete circuit to work.
Electrical component - a part that can be added to an electrical circuit ie. a bulb, switch or motor.
Pulley - simple machine that makes lifting something easier. A pulley has a wheel or set of wheels with grooves that a rope or chain can be pulled over

What I should know by the end of the Unit:

To know that a mechanism provides movement
To know make and use electrical systems
To know how to build and reinforce structures
To understand and use mechanical systems, e.g. pulleys, wheels, axles and bearings

Health and Safety:

Using tools - use the correct tool for the job. Identify hazards prior to using (saw/scissors/glue gun)

Electrical systems - electric currents can be dangerous

Batteries - these can be harmful if not used correctly

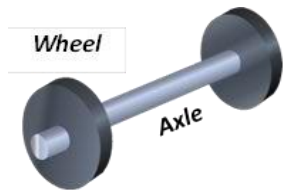


Key Facts

Mechanisms are parts that can be combined make something work and create motion.

Most objects that help us in our lives are made up of different mechanisms.

Wheels, axles and pulleys are mechanisms that help things to move in relation to a specific force.



Environmental impact:

Designers must be aware of the impact that the manufacturing, use and disposal of their products may have.

Understanding the materials used, components and energy sources involved help to build a picture of how environmentally friendly a product's production and use could be.

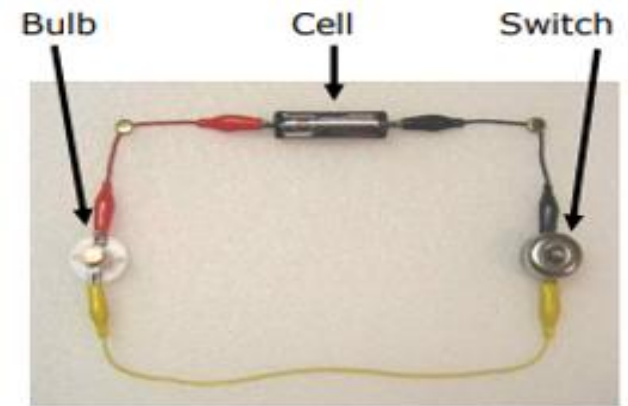
Raw Materials - to make the product

Manufacturing - the process used to make the product
How much energy or reusable materials does it involve?

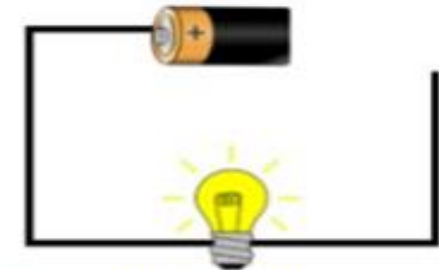
Distribution - Consider the type of materials used in the packaging and how the product would be transported for sale.



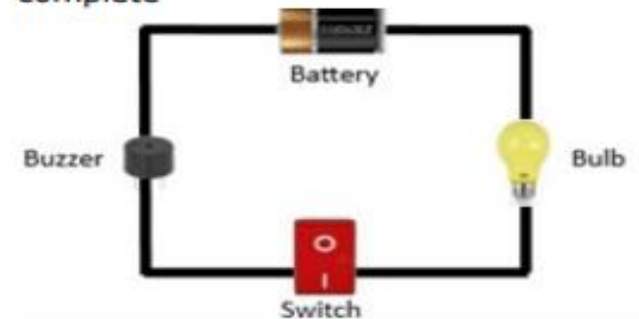
Electrical Circuits



The switch opens and closes the circuit. The bulb lights because the switch is



This circuit will not work as it is not complete



This circuit is complete so the buzzer will sound and the bulb will light.