



Year 6 Knowledge Organiser

DT Summer Term

Circus-based controllable vehicle

What I should already know.

- Incorporate a circuit with a bulb or buzzer into a model.
- Create shell or frame structure, strengthen frames with diagonal struts.
- Investigate products/images to collect ideas.
- Sketch and model alternative ideas.
- Develop one idea in depth.
- Record ideas using annotated diagrams.
- Join materials using appropriate methods.
- Use glue gun with close supervision.
- Use the design criteria to inform their decisions about ways to proceed.
- Reflect on their work using design criteria stating how well the design fits the needs of the user.
- Make suggestions as how their design could be improved.

Electrical and Mechanical Systems

What will I know by the end of the unit?

To be able to research, design, make and evaluate a controllable vehicle.

To saw wooden dowel at precise measurements according to the frame design.

To use a glue gun to create a chassis including reinforcement triangles and a grey board base.

To connect a motor, elastic band, pulley and axle in order that the vehicle will move.

To use electricity from batteries to power the vehicle.

To incorporate a switch in the circuit for turning the vehicle on and off.

To use the Whole Class Reading book of the term, 'Wild Boy' to provide inspiration for the bodywork design.

To use the TASC wheel to carry out a project.



Vocabulary

Controllable vehicle

Motor

Chassis

Pulley

Bodywork

Axle

Remote controlled

Frame

Circus-themed

Reinforcement triangles

Bench hook

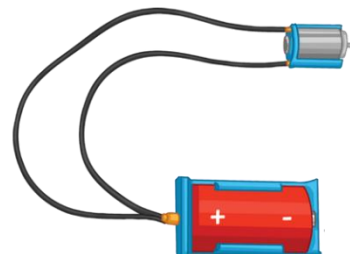
Slot

Glue gun

Safety goggles

Grey board

TASC wheel



Key Knowledge

Generate and develop innovative ideas through research and share and clarify these through discussion, annotated sketches and pictorial representations of electrical circuits.

Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.

Cut strip wood, dowel, square section wood accurately.

Cut slots and use glue gun with close supervision.

Incorporate motor and switch into a model.

Identify what does and does not work in the product and suggest how to improve it.

Combine electrical components with a pulley system on a wooden framework for electrically-driven motion.

Continually evaluate and modify the working features of the product to match the initial design specification.

Outcome



Investigate!

A reinforced frame and base is created to form a chassis. The product incorporates an electrical circuit including a motor and switch, which is linked through a pulley system to power the movement of the vehicle. Bodywork based on the Whole Class Reader circus-based theme is then added.