



# 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

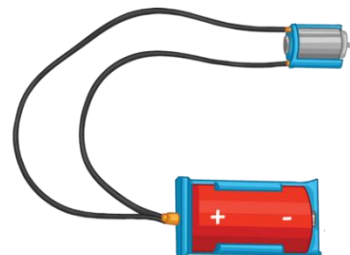
Slot

Glue gun

Safety goggles

Grey board

TASC wheel



## Key Knowledge

Use hand drill to drill tight and loose fit holes.

**Cut strip wood, dowel, square section wood accurately to 1mm.**

Cut slots.

Join materials using appropriate methods.

**Incorporate motor and switch into a model.**

Build frameworks using a range of materials.

Use glue gun with close supervision.

Use the design criteria to inform their decisions about ways to proceed.

Justify their decisions about materials and methods of construction.

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

## 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.