

Spring Partnership Trust – Knowledge Organiser

DT Focus

Functioning Products

Year 6

Automata Animals

Design Brief

The WWF (World Wide Fund for Nature) want to get people interested in caring for the endangered/vulnerable animals which live on our planet. They would like you to create a collection of appealing moving, mechanical animal models that will captivate people's interest.

What? Key Skills

Design

- To design, make and evaluate products that have a clear purpose or intended user.
- To make products, adapting and refining their design as their work progresses.

Make

- To communicate their ideas through discussions, annotated sketches/diagrams, prototypes, pattern pieces and Computer Aided Design (CAD)
- To select and use a wider range of materials and components, including functional properties, recyclability and aesthetic qualities.
- To apply their understanding of how to strengthen, stiffen and reinforce more complex structures eg nets, food packaging.
- To measure and mark out to the nearest millimetre.
- To select the appropriate cutting, shaping, joining and finishing techniques and apply them with increasing accuracy.
- To understand and use mechanical systems in their products, eg levers, pneumatics, gears and pulleys, winding mechanisms.

Evaluate

- To explore and evaluate a range of existing products, identifying likes and dislikes and suggesting improvements.

Key Vocabulary

Mechanism	A part that controls the other parts of the machine to make it work
Rotary	Motion/movement around a point/axis.
Linear	Motion/movement along a straight line.
Cam	A disk shaped to convert rotary motion into linear motion.
Follower	Mechanisms which are in contact with the shape of the cam. They produce a motion
Cam Shaft	The axle that the cams attached to and rotate around.
Dowel	A peg used for holding together parts of a structure.
Axel	a pin or shaft on or with which a wheel or pair of wheels revolves
Component	A part that will help the whole object work

Key Knowledge

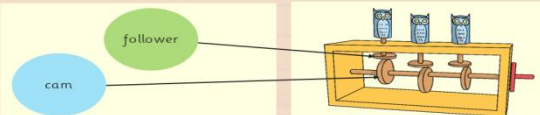
Components

A cam mechanism is made up of two main components - a **cam** and a **follower**.

The **mechanism** causes **components** to move either in a **linear** motion (a straight line) or a **rotary** motion (goes round).

Cam - a rotating disk shaped to convert rotary into linear motion.

Follower - the component which follows the movement of the cam.



Holding a saw



Holding a hammer

