Year 5 D.T: Mechanical Systems Knowledge Organiser

Planning, designing and making process

Children will generate ideas from previous experiences.

Children need to:

- understand that there are many types of mechanisms
- recognise the movement of a mechanism within a toy or model
- understand that a cam will change rotary motion into linear motion
- understand that different shaped cams produce different movements
- know about the relationship between a cam and a follower

Design brief: To design and construct a moving toy with a cam.

Functional considerations: The toy needs to be able to move in a linear motion. The movement must be noticeable and smooth.

Aesthetic consideration – the toy needs to be themed around Space.

Children need to select tools, materials, equipment, components to help them make their moving toy:

- Wheels
- Rods
- Axle
- CAMS

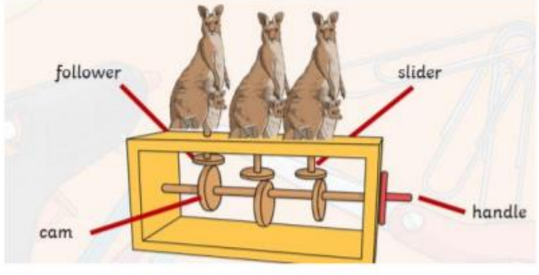
Children need to understand properties of materials and be able to use the most sensible one for their toy. Assemble, join and combine materials – axle/shaft, follower, cam

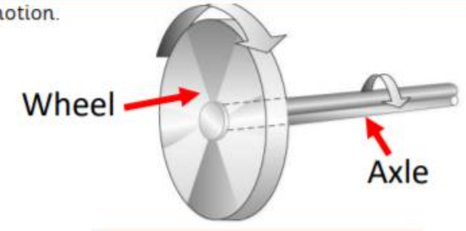
Key vocabulary, knowledge and understanding

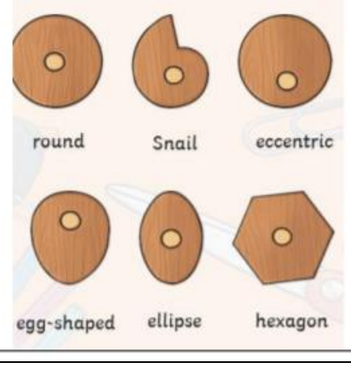
Cam - is a rotating or sliding piece in a mechanical linkage used especially in transforming rotary motion into linear motion.

Linear motion – straight line

Rotary motion – turning in a circle







The follower is a rod that rests on the edge of a turning cam.

The eccentric cam – this rotates as it fixed to the axle which is turned by the handle.

The follower cam – the eccentric cam causes the follower to move up and down (linear) and rotate.

Key Vocabulary

mechanism

mechanical system

gear

pulley

lever

cogs

force

rotary motion

linear motion

driver

follower

cam