

Design & Technology Knowledge Organiser

Year 5 — Mechanical systems—Cams

THOUGHT	ACTION
What type of moving toy shall I make? What will be its purpose? Who will use it?	Discussing ideas, drawing annotated sketches or exploded diagrams Generating a simple design specification
What type of movement will it have? Will it be a moving vehicle or be stationary and have moving parts?	Discussing, modelling and evaluating different systems using mechanical components
Which materials will I use to make it? How will I make it fit for purpose?	Investigating and trialling possible materials and components
How will I make the body or housing for the moving parts?	Discussing, exploring and evaluating prototypes
What tools and materials will I need? What order will I work in? What constraints am I working to?	Negotiating, developing and agreeing a step-by-step plan
Do I need to change anything?	Discussing, testing and modifying the design
Will my product meet the needs, wants and interests of the user group?	Evaluating the product with the intended user group and against the original design specification

Links to prior learning

Experience of levers and linkages.
Basic understanding of different types of movement.

Experience of cutting and joining techniques with a range of materials including card, plastic and wood.

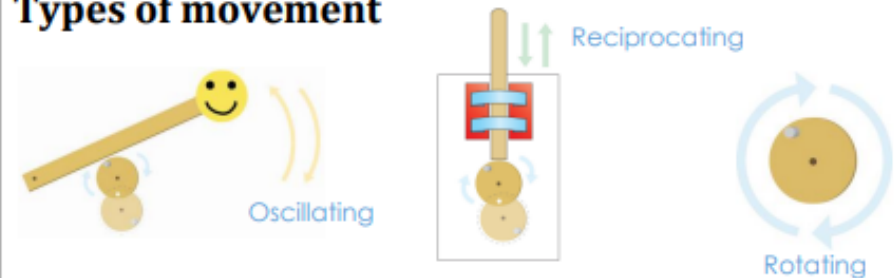
Experience of using tools such as saws, bench hooks and glue guns.



Glossary

- **Rotary motion** – movement that goes round.
- **Oscillating motion** – moving to and fro around a pivot point, as in a lever.
- **Reciprocating motion** - backwards and forwards movement in a straight line, as in a slider.
- **Cam** – a mechanism that changes one sort of movement to another. Cams can be an off-centre wheel or a specially shaped wheel.
- **Follower** – the device that follows the movement of the cam: a lever or a slider.
- **Lever** – a piece of rigid material that moves to and fro around a pivot point creating oscillating motion.
- **Slider** – a piece of rigid material that moves backwards and forwards in a straight line creating reciprocating motion.
- **Guide** – a piece of material used to guide the movement of another.
- **Spacer** – a piece of material used to create extra space to allow moving parts to move freely.

Types of movement



Types of cams

