



We are the kids in America!

How can I create a moving toy using levers and cams?

Applying Past Knowledge

This learning links with the lessons you had in year 3 on 'Moving Monsters'.

**Do's**

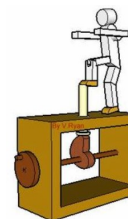
- Fix the wood in a vice or clamp.
- Hold the saw with one hand.
- Place the other hand on the table away from the saw.
- Start by pulling the saw back before gently sawing.

**Don'ts**

- Walk or run while holding the saw.
- Saw extremely quickly.
- Place your fingers near the blade.
- Touch a glue gun without teacher supervision.

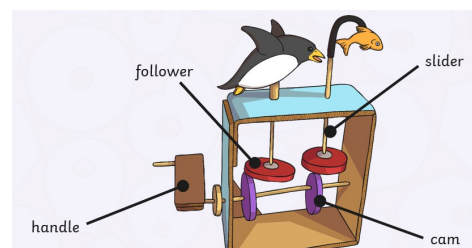
How do mechanical cam toys move?

Cam toys move because the cam inside moves up and down or side to side.



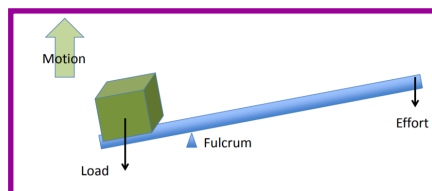
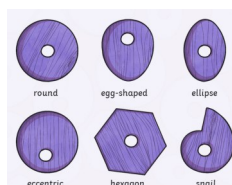
What do I want my design to look like?

- Use an exploded diagram to design your toy.
- An **exploded diagram** show how a product can be assembled and how the separate parts fit together. The diagrams also show components that would usually be hidden in a solid drawing.



How do cam and levers work?

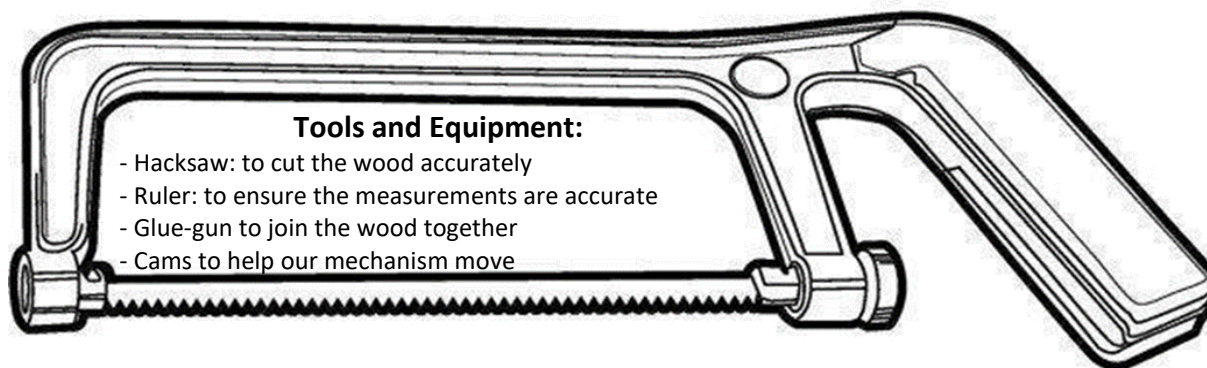
The shape of the **cam** makes the object move up and down at different points.



A **lever** will allow a greater mass to be moved with less force.

Tools and Equipment:

- Hacksaw: to cut the wood accurately
- Ruler: to ensure the measurements are accurate
- Glue-gun to join the wood together
- Cams to help our mechanism move



Key Vocabulary

- **Mechanical system:** when different parts work together to create motion.
- **Components:** different parts
- **Motion:** movement
- **Cams:** components to help create movement.
- **Functional:** to have a special activity, purpose or task
- **Appealing:** Something that looks nice

