

DT- Year 5/6 Autumn Cycle B - Mechanisms

Materials/Construction

CAMS Toys



What do I already know? I know how to make a moving card, car and an Egyptian lift by:

- exploring and creating a moving card, a car and a lift using mechanisms, such as levers, sliders, wheels and axle and pulleys
- saying and explaining why I chose those mechanisms for each project
- understanding and explaining how mechanical systems create movement Materials/construction (end of year 4):
- knowing how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.
- using safe ways of cutting materials
- applying my understanding of how to strengthen, stiffen and reinforce more complex structures
- starting to consider how materials have both functional properties and aesthetic qualities, and chosing the most appropriate material for the project

<u>I will know how to design and make a CAMS toy for Nursery children by:</u>

- using CAM products and explaining why they were chosen
- explaining how mechanical systems, such as cams, create movement
- ensuring that my toy is strong and fit for the purpose
- developing skills in nailing, drilling and sawing to create a product
- ensuring that materials chosen have both functional properties and aesthetic qualities
- justifying why I have chosen a specific material

<u>Key Vocabulary:</u>					
cam		specially shaped wheel, or one with a hole off-centre. When it rotates, anything resting on its edge will bob up and down, as in a pull-along toy	pivot	Moving Pivot	a fixed part that holds a lever in place (to turn, rotate or swivel, like a hinge)
linear		the natural motion of an object, travelling along a straight line.	process	Perkan Perkan	a series of progressive and interdependent steps by which an end is attained
mechanisms		a device used to create movement	reciprocating		a repetitive up-and-down or back-and-forth linear motion
oscillating		is something that "vibrates", or repeats the same pattern.	rotary	Rotary Motion	the motion of an object around a circular path, used to drive mechanisms and equipment













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Designer -CAMS Toys





<u>CAMS</u>

Cams can make things move up and down, side to side, or around in circles. When you turn the handle, the axle turns. The cam rotates on the axle. The cam and follower work together to create the movement - as the cam turns, it moves the follower. The cam changes rotary motion into linear motion. Different shaped cams produce different movements.

Jacques de Vaucanson

One of the first mechanical toys is the flying pigeon by Archytas of Tarentum created 400 years BC.

In 16th Century Leonardo da Vinci created his mechanical lion as a present for king Louis XII. The lion could walk and reveal a cluster of lilies from his chest.

In 1738 Frenchman Jacques de Vaucanson invented one of the first mechanical robots, a robot duck that was able to drink and eat. Jacques de Vaucanson is often regarded as the greatest mechanical toy crafter of all times.





- Authenticity is the product believable?





• User - who is the product for? • Purpose - what task does the product need to perform? • Functionality - will it work? Design Decisions - what choices do you have? • Innovation - how is your product unique?











