River Bank Primary Knowledge Organiser	Year 5	Autumn 2	Moving toys

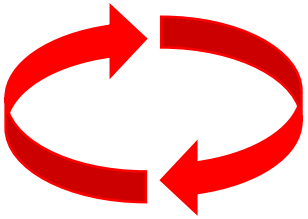
Planning, designing and making process

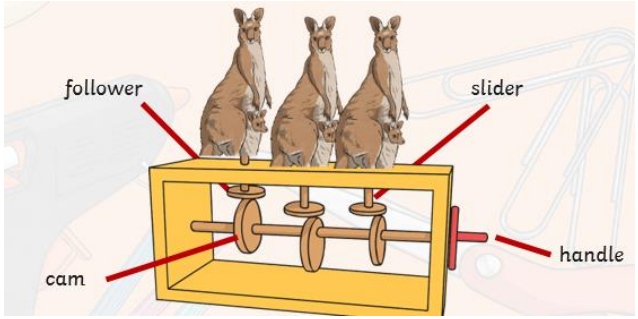
Children will generate ideas from previous experiences. Children need to: • understand that there are many types of mechanisms • recognise the movement of a mechanism within a toy or model • understand that a cam will change rotary motion into linear motion • understand that different shaped cams produce 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 the Egyptians.	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

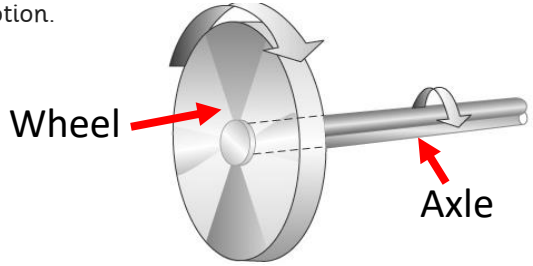
Key vocabulary, knowledge and understanding

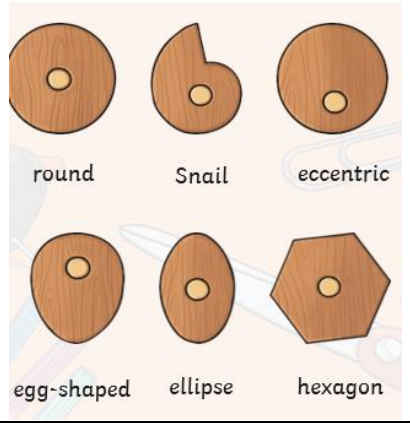
Cam - is a rotating or sliding piece in a mechanical linkage used especially in transforming rotary motion into linear motion.
Linear motion – straight line

Rotary motion – turning in a circle



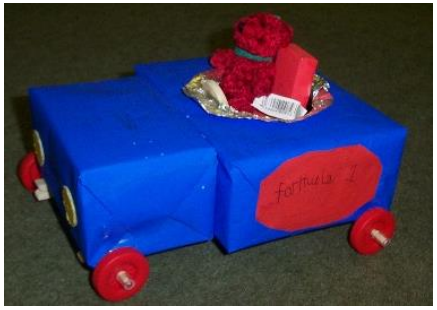
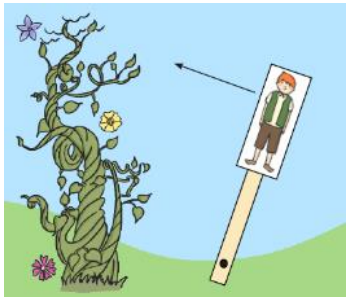
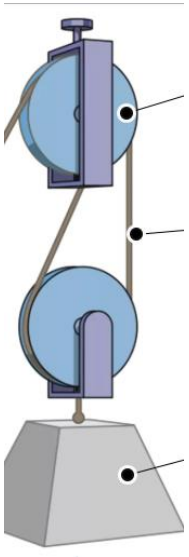






The follower is a rod that rests on the edge of a turning cam.

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.

1. What motion does the cam transform into?	a. Rotary to rotary motion	b. Linear to rotary motion	c. Rotary to linear motion	d. Linear to linear motion
2. What is the axle?	a. A rod that moves in a linear motion.	b. A rod that passes through the centre of a wheel.	c. An eccentric cam.	d. Component that puts the mechanism into motion.
3. What is a rotary motion?	a. A straight line motion.	b. A circular motion.	c. A zig-zag motion.	
4. Turning the cam will make the toy move…	a. In a circular motion	b. Consistently up and down	c. Will not move at all.	d. Depends on the shape of the cam.
5. What part of the moving toy rests on the edge of the cam?	a. Axle	b. Follower	c. Pear cam	d. Wheel
6. Which of these images shows a cam being used?	a. 	b. 	c. 	d. 
7. What is the difference between eccentric and round cams?	a. There is no difference.	b. Round cams is more circular.	c. The eccentric cam has the hole for the axle in a different place. Round cam axle hole is in the centre.	d. The round cam will be in rotary motion and eccentric will be in linear motion.
