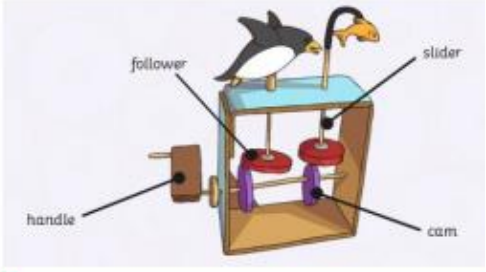
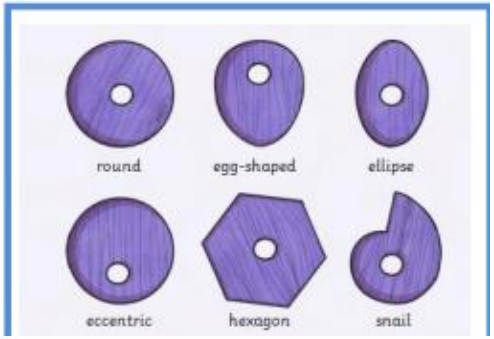
Year 5 Mechanisms Knowledge Organiser

Key Vocabulary

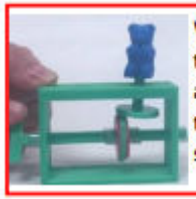
Vocabulary	Definition
Mechanism	An assembly of moving parts which perform a complete functional motion.
Cam	A slide or roller attached to a rotating shaft to give a particular type of motion.
Slider	Part of the cam mechanism which is attached to the follower.
Follower	Mechanism in contact with the cam.
Linear movement	Moving in a straight line, up or down.
Rotary Movement	Turning around in a circle, like a wheel turning.
Axle	A rod or spindle through the cam.
Score	Using the blade of the scissors to cut a grove in hard cardboard.





Key Concepts

- A cam mechanism is made up of three components: a cam, slider and follower.
- The mechanism causes components to move. Cams can be made from metal, plastic or wood.
- A cam mechanism is made up of a cam, follower, axle, slider and handle.
- Cams come in different shapes which create different motions.
- Cam mechanisms create linear and rotary movements.



When a **circular cam** is placed at the edge of another circular cam at 90° it will rotate the movement through 90°, commonly used in simple spinning toys.

Non-circular cams are used to create different types of linear movement. The shape of these non-circular cams will influence how smoothly or quickly the **follower** rises and falls. If the non-circular cam is **placed directly underneath** the follower, **only linear movement** will occur. If it is placed **towards the edge**, then the follower will **rotate, as well as going up and down**. This means it is easy to create linear and rotational movement in one cams mechanism.

To know how to incorporate the cam components into a 3D structure; measure accurately using a ruler and to **know how these measurements work in three dimensions** to make holes parallel or perpendicular (90°) to each other.

To **join a cam to a shaft/follower successfully** so it only rotates with the shaft/follower and increase the thickness of the shaft/follower with masking tape, where necessary.

To **position components** within the 3D structure, allowing for alterations if necessary.