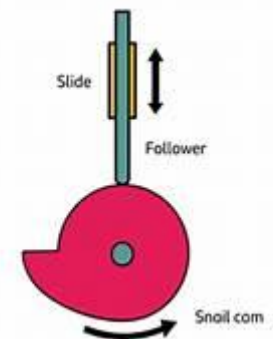
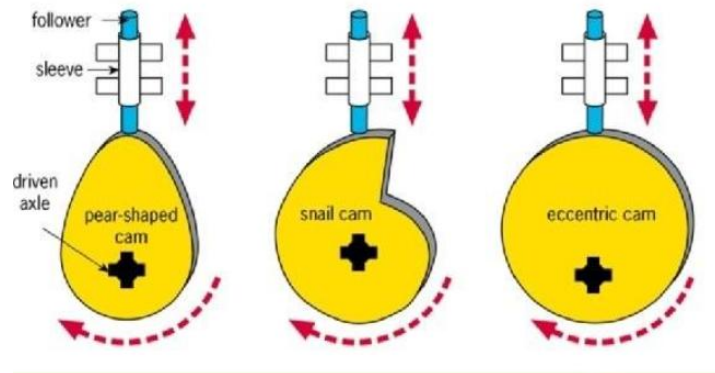
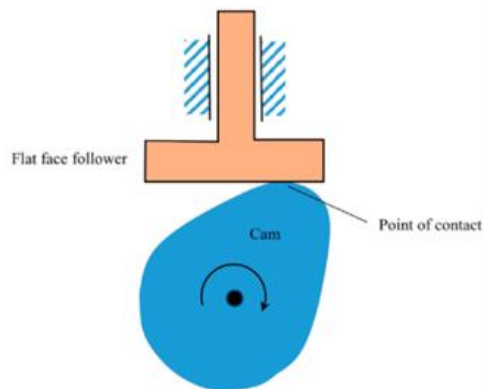


Year 4 DT: Mechanisms - Cams

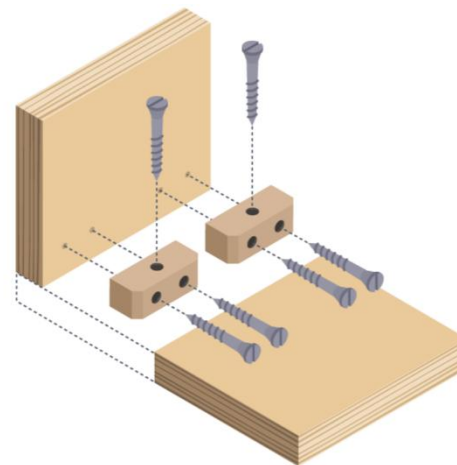
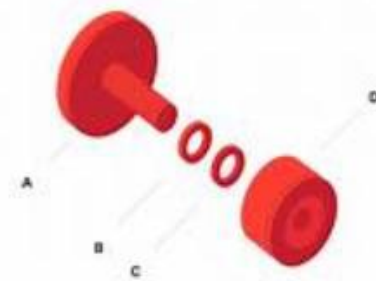
Vocabulary


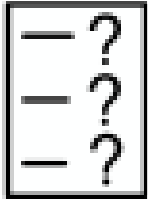
Cam	A cam is a rotating or sliding piece that changes rotary motion into linear motion	
Rotary	Revolving around a centre or axis; rotational	
Linear	Moving along a straight or nearly straight line	
Follower	Part of a mechanism that is moved by the cam's motion due to direct contact between the two parts.	
Pear-Shaped Cam	Pear cams are called this as they have the shape of a pear. It remains stationary for half a turn then gently rises and falls	
Eccentric-Shaped Cam	Eccentric means 'not in the centre'. So, eccentric cams rotate at a point that is not the centre of the cam. This type of cam will make the follower move up and down.	
Snail-Shaped Cam	A snail cam has a spiral shape like the shell of a snail. As it turns, the follower keeps still until it meets the top of the spiral.	
Motion	Movement	
Annotate	To write notes e.g. to explain what something; how it works and what it is made from	
Exploded Diagram	Exploded diagrams show how a product can be made and how the separate parts fit together. The diagrams also show components that would usually be hidden in a solid drawing.	



- Know that a **cam** is a rotating piece, which changes **rotary** (around) **motion** into **linear** (up and down).
- Know that a **follower** rests on the edge of a turning cam, following the shape of the **cam** and making it move.
- Know that a **pear-shaped cam** will move the **follower** smoothly up and down but makes it go higher than the **eccentric cam**
- Know that a **snail cam** will gradually lift the follower before dropping it
- Know that the **eccentric cam** will not move the follower when the hole is in the middle.
- Know that the **eccentric cam** will move **the follower** smoothly up and down when the hole is away from the middle.
- Know that the axle will go through the hole of the **cam**
- Know that the **cam** will move when the axle is turned
- A design specification is a list of things which you need to successfully incorporate into a design so that it is successful.

- **Exploded diagrams** show how a product can be made and how the separate parts fit together. The diagrams also show components that would usually be hidden in a solid drawing.



Quizzing		Quiz at home
Ask your partner the questions below. Can they find the correct answer on the right-hand side?		Ask your adult to look at the KO.
What kind of motion does an eccentric cam make on the follower?	The edge of the ruler	<p>Quiz them using the vocabulary and knowledge section or the quiz questions.</p> <ul style="list-style-type: none"> • Can they beat your score? • Can they score more than 5? 10? • Compete with your adult in the elimination quiz. Take it in turn to ask each other questions. The first person to get a question wrong is out.
What kind of motion does a pear-shaped cam make on the follower?	A higher linear motion than the eccentric	
What kind of motion does a snail-shaped cam make on the follower?	A linear motion	
When measuring, where do I measure from on a ruler?	A spiral motion	
Which famous fun-fair ride uses a pear-shaped cam?	Carousel	
Where might you see an example of an exploded diagram?	Recipe	
	The 0 on the ruler Bumper Cars Instructions on how to build furniture	
Big Questions	Beat Your Adult	 
<ol style="list-style-type: none"> 1. In which machines might you see cams and followers today? 2. Why are exploding diagrams important to designers? What key information might they show? 3. What might you consider to be your design specification for the following products? <ol style="list-style-type: none"> a. A moving child's toy b. A cover for your phone c. A key ring for an adult 4. What would happen if the follower was stuck to the mechanism? 	<ul style="list-style-type: none"> • Who can name the most machines with engines in 1 minute? • Who can name the most toys in 1 minute? 	

Tell a partner / an adult the definition for the missing spaces below

Vocabulary

Cam		
Rotary		
	Moving along a straight or nearly straight line	
	Part of a mechanism that is moved by the cam's motion due to direct contact between the two parts.	
	Remains stationary for half a turn then gently rises and falls	
Eccentric-Shaped Cam		
	As it turns, the follower keeps still until it meets the top of the spiral.	
Motion		
	To write notes e.g. to explain what something; how it works and what it is made from	
Exploded Diagram		

