

Year 9 Automata Knowledge Organiser

Key Words:

Linear, Rotary, Reciprocating, Oscillating

Key Skills:

Drawing, designing, shaping, cutting, smoothing, assembling, testing, following instructions.

Subject: Technology

Year: 9

Topic: Automata

Lesson Sequence

- Research
- Analyse
- Design
- Practical
- Test & Evaluate

Key Assessments

Knowledge Organiser tests and class work mark.

Core Texts / Websites

Design and Technology KS3 class book.
BBC Bitesize.
Technologystudent.com

The things you need to learn in this knowledge organiser are:

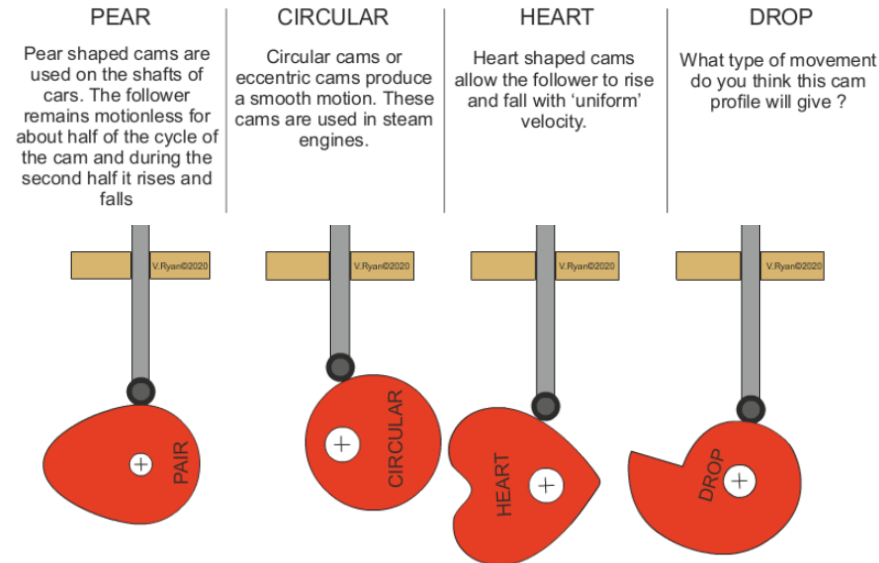
- Names the four types of motion
- Names the different types of cams
- Names of the basic tools and machinery

Key Vocabulary

Cam shaft	A shaft with one or more cams attached to it
Snail cam	Cam that produces a slow rise and quick drop movement
Eccentric cam	The cam is a disc with its centre of rotation positioned 'off centre'. This means as the cam rotates the flat follower rises and falls at a constant rate
Movement	A change of direction and speed
Hand-powered mechanisms	A mechanism that is controlled by turning a handle
Linear motion	Movement in a straight line
Rotation	The action of rotating about an axis or centre
Follower	The follower is in contact with the cam and causes the slider to move the object from rotational to linear motion
Slider	A slider converts rotational movement into linear movement
Component	A part or element of a larger whole, especially a part of a machine or vehicle

CAM PROFILES

Cams can be shaped in any number of ways and this is determined by the way the follower is to move. The shape of the cam is called the PROFILE. Examples of various cam profiles can be seen below.



Linear motion

Moves in a straight line in one direction only



Rotary motion

Rotates around a central axis



Reciprocating motion

Moves back and forth or up and down along a straight line



Oscillating motion

Moves back and forth along a curved line

