

Year 10 Half Term 2  
Mechanical Devices & Finishes

Mechanical Devices			15	<b>Crank and slider</b>	Crank and sliders convert rotary motion into reciprocating motion and vice versa.
1	<b>Linear motion</b>	Movement in one direction along a straight line.	16	<b>Treadle linkage</b>	Treadle linkages convert rotary motion into oscillating motion and vice versa.
2	<b>Reciprocating motion</b>	A repetitive back-and-forth or up-and-down linear action.	17	<b>Rotary systems</b>	Rotary systems drive mechanisms in machinery and equipment.
3	<b>Oscillating motion</b>	A repetitive back-and-forth motion along a curved path	18	<b>Camshaft</b>	It is a rotating axle used to drive other mechanical components.
4	<b>Rotary motion</b>	Objects moving in a circular motion usually around a fixed axis	19	<b>Cams</b>	shaped pieces of material that are attached to the camshaft that change rotary motion into reciprocating motion through a follower.
5	<b>Lever</b>	A simple machine made of a rigid beam and a fulcrum.	20	<b>Gear trains</b>	When two or more gears are joined together.
6	<b>Fulcrum/Pivot point</b>	The support, or point of rest, on which a lever turns in moving a body	21	<b>Idler gear</b>	An idler gear ensures that the direction of the drive gear and the driven gear are the same.
7	<b>First order lever</b>	The load and effort are at opposite sides with the fulcrum positioned at any point between.	22	<b>Pulleys &amp; Belt Drives</b>	They transfer rotary motion, like a gear system. They can be used to change the speed, direction of rotation, or turning force or torque.
8	<b>Second order lever</b>	The effort is at the opposite end to the fulcrum, with the load positioned between.	23	<b>Block and tackle</b>	Block and tackle systems combine pulleys to lift heavy weights.
9	<b>Third order lever</b>	The load is at the opposite end to the fulcrum, with the effort positioned between.			
10	<b>Equilibrium</b>	A state in which opposing forces or actions are balanced so that one is not stronger or greater than the other.			
11	<b>Linkages</b>	Mechanisms which allow force or motion to be directed where it is needed.			
12	<b>Reverse motion linkage</b>	This changes the direction of the input motion.			
13	<b>Parallel motion linkage</b>	Also known as push / pull linkage as it keeps the direction of the output the same as the input.			
14	<b>Bell crank linkage</b>	Input direction is converted through 90 degrees.			

