

Y9 RM: Knowledge Organiser

Y9 RM Key Words

Contour	A path that is an even distance around another path
Line	Defines shape, outer edge of object
Vinyl	A thin plastic
Vinyl cutter	A machine that is a CAM output used to cut sticky backed Vinyl to produce 'stickers'
Isometric drawing	A type of 3D drawing that we can achieve with the help of an underlay
Corner Rebate (Wood Joints)	Wood joints are primarily to increase the gluing area but if they will be seen we must make sure they are aesthetically pleasing too
Laser Cutter	Laser cutting works by directing the output of a high-power laser. The focused laser beam is directed at the material, which then cuts the material leaving an edge with a high-quality surface finish. In school we mainly cut and engrave on Plywood and Acrylic
Thermoplastic	A plastic that can be heated and shaped more than once
Thermosetting Plastic	A plastic that once heated cannot be re-shaped
Net	A 2D diagram that folds into a 3D object
Annotation	An explanatory note added to design work
Acrylic	A thermoplastic which can be easily cut on the laser cutter
Template	A present format for a document or file
Radius	The distance between the centre of a circle and the edge
Safety edge	The side of a flat file with no teeth on it
Flat file	A file with flat sides or rectangular cross section

Yr. 9 processes

Sawing
 Filling
 Dry-fitting
 Gluing
 Using a rebate
 CAD/CAM
 Pinning
 Laser Cutting
 Using a marking gauge
 Cutting corner rebates
 Freehand saw use
 Designing for vinyl cuttings
 Isometric drawing
 Explanation of design decisions
 Machine safety and use
 Use of Jigs

Yr. 9 Materials

Scott's Pine
 Acrylic
 Vinyl
 Ply wood

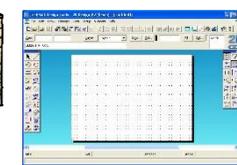
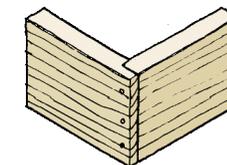
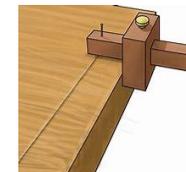
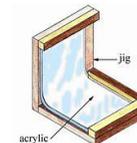
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Icon	Meaning
	Used to draw straight lines
	Used to draw freeform curves
	Used to draw circles
	Used to add text
	Click and hold for Shapes tools

Yr. 9 Safety

Safe hand tool use
 Spare hand safety
 Machine safety
 Working with Heat
 Correct tool selection



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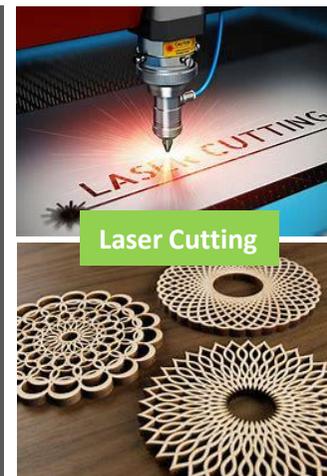
Line Bender	This is a hot wire that heats up a specific are of the material to bend it
Marking Gauge	A tool that marks the extreme of where we will cut up to
PVA	A glue used on fibrous materials that gets into the grain and has a long slip time
Engrave	To create a path in the surface of a material
'Cut out'	This is the process that happens on the laser cutter assuming you have the line colour correct
Scotts Pine	Scott's pine is a softwood that is 'nice' to work with and gives a good finish when sanded, It is often 'knotty' so material selection is crucial
Ply wood	This is a manufactured board that is made of layers with the layers grain going in an opposite direction of the layer below it
Plane	A tool with an extremely sharp blade for 'shaving' a thin amount off material
Tenon Saw	A wide bladed saw that is good for straight lines
Mitre Saw	A saw that helps us cut materials at set angles
Coping Saw	A saw with a fine thin blade mainly used for curves
Cork Block	A flexible block that helps our sanding stay flat (ish!)
JIG	This is something that helps us do a repeat task for accuracy and quantity production
Weeding	The process of removing the waste from around your vinyl sticker
Low tack transfer tape	The tape used to transfer a vinyl sticker to its required location
Rebate	A groove that another material can sit in

The Design Process

Design Brief	A statement outlining what is to be designed and made
Specifications	A list of design criteria
Research	Sourcing information and inspiration to help with design work
Ideas	A range of potential solutions to the problem
Development	Further improving an idea
Final idea	A presentation drawing of chosen idea
Manufacture	Making the final outcome
Evaluation	Reviewing strengths and weaknesses of final product and design work

Laser cutter

Laser cutting works by directing the output of a high-power laser The focused laser beam is directed at the material, which then cuts the material leaving an edge with a high-quality surface finish. In school we mainly cut and engrave on Plywood and Acrylic



Line Bending

Line bending involves heating a thermoplastic along a line using a heating element. The plastic softens as it heats, allowing it to be bent. As the plastic cools it will retain its shape.



Vinyl Cutter (Sticker machine)

A vinyl cutter is a type of computer-controlled machine. Small vinyl cutters look like a desktop printer. the computer controls the movement of a sharp blade over the surface of the vinyl. This blade is used to cut out shapes and letters from sheets of thin self-adhesive plastic. The vinyl can then be stuck to a variety of surfaces depending on the adhesive and type of material

