DESIGN TECHNOLOGY KNOWLEDGE ORGANISER

YEAR 7

Topic: Acrylic Laser-cut Ruler (CAD) and Line-bent Pencil Holder

History/Context:

Acrylic Lasercut Ruler (CAD)/ Line-bent Pencil Holder

Design Brief: Design and make an acrylic ruler using your CAD CAM skills learnt on techsoft 2D design.

Health & Safety

Safe and correct use of workshop tools, hand tools and power tools: Laser-cutter, Line-bender / Strip - heater, Pillar drill, Band facer/Sander, Roland Stikka cutter.

MATERIALS

WOODS			PLASTICS		METALS	
SOFTWOODS	HARDWOODS	MANUFACTURED BOARDS	THERMO-SETTING Plastics	THERMO Plastics	FERROUS	NON FERROUS
Pine Larch Spruce	Oak Ash Balsa Beech Mahogany	MDF Plywood Chipboard	Epoxy resin Melamine formaldehyde Urea formaldehyde Polyester resin	Acrylic Polyvinyl chloride Polypropylene High Impact Polystyrene	Low carbon steel High carbon steel Cast iron	Aluminium Copper Tin Zinc

Manufacturing Processes:

Computer-Aided Design (CAD)

Computer-Aided Manufacture (CAD) Laser-cutter

Line Bender/Strip Heater

Key Literacy Vocabulary:

Aesthetics - how humans perceive and judge objects according to their attractiveness

Automation- Using automatic equipment in production.

Computer aided design (CAD)-The process of creating a 2D or 3D design using computer software.

Computer aided manufacture (CAM)-The manufacture of a part or product from a computer aided design (CAD) using computer-controlled machinery, such as a 3D printer.

Drilling- the action of making a hole in something by boring with a drill.

Laser cutting- a technology that uses a laser to cut materials

Line-bending- a process used to bend thermoplastics in a straight line. This involves heating a thermoplastic sheet over a strip heater until it becomes soft and then bending it

Thermoplastic- types of plastic which become soft when they are heated

Relevant Images: