

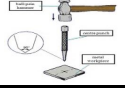


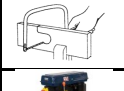






Designing		Materials		Manufacture	
Design	a plan or drawing produced to show the look and function or workings of an object before it is made. To imagine and create a product to be made.	Ferrous Metals	Any metal that contains iron. Ferrous metals rust when left in contact with moisture, and are magnetic	Marking out	using a pencil to show where you are going to cut or shape the material you are working in. 
Functionality	The suitability of a product, how the purpose of the product affects the design .	Non-Ferrous metals	A pure metal that does not contain iron. Non-Ferrous metals are not magnetic and do not rust, but they go dull (tarnish) forming a protective layer. This is called oxidization .	Metal Vice	a holding device used with metal to keep the material secure while working on it (e.g. cutting or filing) 
Tolerance	the allowable difference between the intended size of a design and the final part or product	Alloys	a mixture of two or more metals to change the material properties in some way. Brass is an alloy of copper and zinc .	Dot Punch	a hard, steel spike with a sharp end used with a hammer to make s 
Explore – Properties of metals		Aluminium	A non-ferrous metal (element) which is light grey in colour, malleable and ductile . . It is made into drinks cans, and can be recycled over and over again to make into new products.	Drill bit	the sharp metal tool used in a pillar drill to make the hole. Drill bits come in lots of different sizes, to make different sized holes. 
Materials properties	the things that can be observed in materials, e.g. colour or weight	Functionality		Coping saw	A saw that has a wide frame which holds a thin saw blade under ten-sion , used to cut curved shapes in materials such as metal and wood. 
Working properties	the things that can be tested in materials, e.g. strength, and also the way that materials can be shaped using tools and processes	Shaping by waste	Cutting with a saw or filing materials to change their shape 	File	a tool with a long abrasive surface used to smooth rough edges of 
Process	any manufacturing method, e.g. sawing, drilling, filing.	Drilling	Making a circular hole in materials using a pillar drill 	Wet and Dry paper	a dark grey abrasive paper used to polish metals and plastics. Can be used wet or dry and comes in various grades 
Rust	the orange/brown flaky/dusty surface that forms on ferrous metals when in contact with moisture for long periods of time	Polishing	Using an abrasive paper to remove surface scratches, and create a shiny surface on metal and plastic materials 	Critique	
Oxidisation	the formation of a dull surface coating on non-ferrous metals.			Design Criteria	A list that you create or use when making a product, which outlines what the product must do, look like or be made from
Malleable	a property that allows a metal to be bent or hammered into a shape			Specification	A detailed list that clearly outlines the criteria for specific products
Ductile	a property that allows a metal to be formed into a thin wire by pulling it through a small hole (drawing)			Evaluation	You should use your specification when evaluating products. This is to make sure you have made your product successfully. You should get other peoples' opinions about your product

Vocabulary used in product design - shaping, waste, properties, timber, accuracy, square, quality finish.

Health and Safety - Wear protective clothing. Tie long hair back. Listen to instructions. Use the correct technique. Use a heat proof mat and circuit clamp. Put the soldering iron back into the holder when not in use. Be calm and sensible at all times. Tidy up after you have finished

Year 7 Product Design Knowledge Organiser: Key Fob