



My Tool Box



Piercing Saw – Used to cut thin sheet metal.



Buffer/polishing machine- Used to buff/polish metal and plastics



Engineer Square – Used to mark out right angles.



Metalwork Vice – Used to secure material while working on it (cutting, filing sanding etc.)



Centre punch- Used to mark out centre of hole before drilling.



Scribe- Used to mark out on metal.



Tin snips – Used to cut thin sheet metal.

Focused topics



Ferrous metals consist of iron, carbon and other elements. Most ferrous metals are prone to **rusting** and can be picked up with a **magnet**. The exception to this is Stainless Steel.

Non-ferrous metals do not contain iron, so they are not attracted to a magnet and **do not rust** when exposed to moisture.



Name	Description	Uses	Name	Description	Uses
Cast Iron	<ul style="list-style-type: none"> Very strong in compression but brittle Re-melted pig iron with other metals 	<ul style="list-style-type: none"> Man hole covers Metal work vices Iron frying pans 	Aluminium	<ul style="list-style-type: none"> Can be polished for a good finish lightweight and can be anodised for colour 	<ul style="list-style-type: none"> Cooking foil Saucepans Toy cars Ladders
Mild Steel	<ul style="list-style-type: none"> Ductile and Malleable Rusts quickly if exposed moisture 	<ul style="list-style-type: none"> Nuts Bolts Car bodies Furniture Frames Gates 	Copper	<ul style="list-style-type: none"> Reddish brown Ductile and malleable A conductor of heat and electricity 	<ul style="list-style-type: none"> Plumbing Electrical Domed roofs
Stainless Steel	<ul style="list-style-type: none"> An alloy of iron with 18% chromium and 8% Nickel. Does not rust and resistant to wear 	<ul style="list-style-type: none"> Kitchen sinks Cutlery Dishes Surgical Instruments 	Tin	<ul style="list-style-type: none"> Bright silver Ductile and malleable Resistant to corrosion 	<ul style="list-style-type: none"> Most commonly used as a coating on food cans and similar packaging

Key Terms

- Brittle** - Will snap easily and will not bend.
- Malleable** - The ability of a material to permanently deform in all directions without cracking.
- Ductile** - The ability of a material to deform by stretching along its length.
- Corrosion** – Corrosion is the deterioration and loss of a material and its properties due to chemical and other reactions of the exposed material surface with the surrounding environment.
- Casting**– The process of pouring molten metal into a mould to create a shape.
- Ferrous metals** – Are metals that contain iron.
- Non-Ferrous metals** – Are metals that do not contain iron.
- Alloys** – A metal that contains more than one different type of metal.

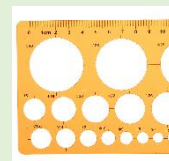
Tasks

- Task 1:** Learn the tool names and their use.
- Task 2:** Learn the key words and the definition.
- Task 3:** Create 6 questions that can be answered from the information on here.
- Task 4:** Draw two tools and write what they are for.
- Task 5:** Create a quiz based on task 1, 2 or 3. Get someone to test you.
- Task 6:** Create a mind map for the information you remember and red pen anything you've forgotten.
- Task 7:** Teach it. Create a task that can be used to teach some of the information from here.

Production aids

Template

A template is a tool used to mark out shapes repeatedly. A template could be made to draw around for speed and consistency.



Jigs

A jig is device used to hold a piece of material and guide tools. They are used to ensure the process can be repeated accurately and to a high quality.



To go further:

How It's Made: Aluminium

Onshape: 3D modelling tutorial

