



# INTRODUCTION TO Mechanical Tools



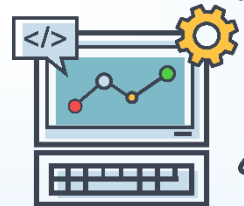
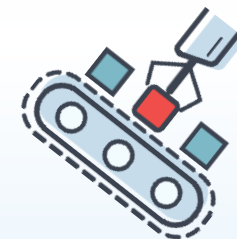
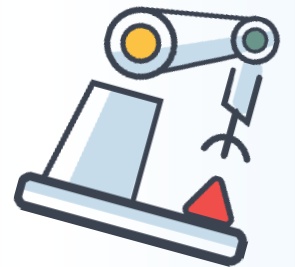
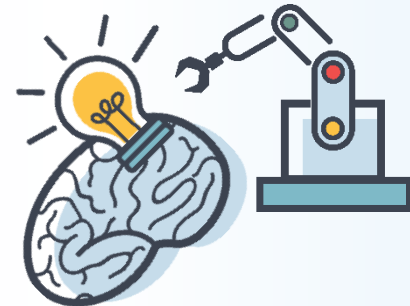


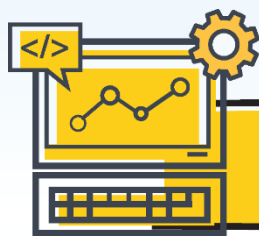
# Activity Time

Select two volunteers from your group to come forward and do the activity. Other team members will guide the volunteers to perform the activity.

Task -

- Every volunteer will pick up 9 chits from the bowl.
- Place the correct chit next to the tool.
- Arrange the tools on the table based on their purpose.









# Analysis





Facilitator/trainer has to guide the volunteers to carry out the task properly with the safety measures.





Tool Name	Image
<p><b>CUTTING TOOLS</b></p> <ul style="list-style-type: none"> <li>• Mainly used to cut metals or wood etc.</li> <li>• The c-shaped frame of Hacksaw that holds the blade makes it easy to cut the objects.</li> <li>• These tools are compact and lightweight.</li> </ul>	
<p><b>GRABBING AND CLAMPING TOOLS</b></p> <ul style="list-style-type: none"> <li>■ These are hand tools.</li> <li>■ Used to hold objects firmly.</li> <li>■ Also useful for bending and compressing a wide range of material.</li> </ul>	 <p>Pliers      Bench vise</p> <p>Holding clamp</p>
<p><b>MEASURING TOOLS</b></p> <ul style="list-style-type: none"> <li>■ A flexible ruler.</li> <li>■ Can measure centimetre, meter, inch, foot.</li> </ul>	
<p><b>HAMMERS AND MALLETS</b></p> <ul style="list-style-type: none"> <li>■ Ball point hammer is useful for rounding off edges and making mechanical seal for two mating surfaces</li> <li>■ Mallets are used to remove dents.</li> </ul>	



Tool Name	Image
<p><b>SCREWDRIVERS AND FASTENERS</b></p> <ul style="list-style-type: none"> <li>It is a tool used to insert or remove screws.</li> <li>Allen Key set</li> </ul>	
<p><b>SPANNERS</b></p> <ul style="list-style-type: none"> <li>A tool that provides grip and mechanical advantage in applying torque/force to turn objects.</li> <li>An adjustable wrench has a movable jaw. It allows us to use different sizes of fastener heads</li> </ul>	
<p><b>OTHER TOOLS</b></p> <ul style="list-style-type: none"> <li>Vernier callipers</li> <li>Level meter</li> </ul>	
<p><b>TWEEZERS</b></p> <ul style="list-style-type: none"> <li>Tweezers: Used to hold small objects.</li> <li>Wire Strippers - Remove insulation of wire</li> </ul>	



**Hammer stones are some of the earliest and simplest stone tools**



**The story of machine tools began when man constructed the first crude lathe-boring machine and has continued into the twentieth century with the evolution of ceramic tools, metal-forming machines, and electronic-tape-controlled machines.**



# Power tools



# Power tools

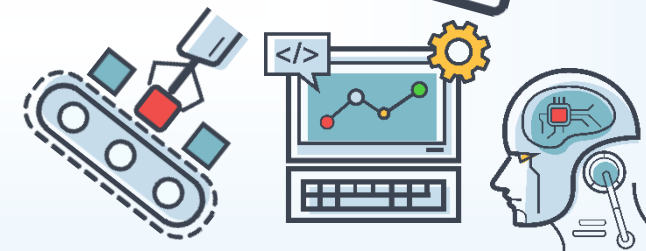
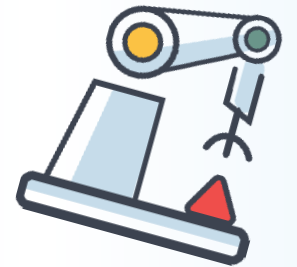
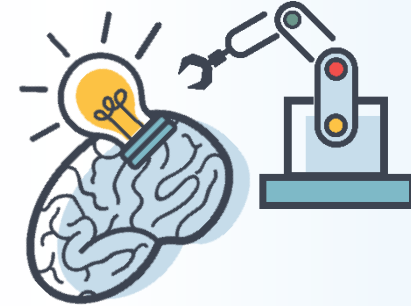


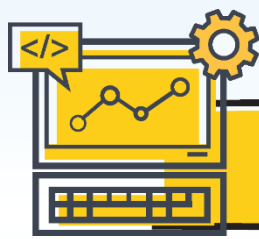




# Activity time

- Power Drill- Create holes on the cardboard to make the letter "A, T, L".
- Hot Air gun- Use the hot air gun to remove the adhesive from the two boards.
- Hot glue gun- Apply glue gun and try to attach the two sun boards together.





# Analysis

Allow the group to observe the activity and fill the worksheet.

Guide the participants to use the safety tools while doing the activity to ensure no damage.

**Power drill:** Participants should hold the drill perpendicular to the board to drill effectively.

**Hot glue gun:** Participants should wait for the glue gun to heat up and get the indication of the material melting, which will ensure that it is ready to work.

**Hot air gun:** Participants should check the temperature and change according to the material which is required to remove.



# Power tools

A power tool is a tool that is actuated by an additional power source and mechanism other than the solely manual labor used with hand tools.

- **POWER DRILL**-A power drill is an electrical motor that rotates a replaceable drill bit to make a hole in wood, plastic, or metal. Alternately, a screwdriver tip can be installed to turn screws. Corded or cordless drills can handle a wide variety of tasks, including drilling holes and driving screws in and out. Corded or cordless drills can be used in mobility, but the stationary drill or drill station has to be used on the surface bed of the stationary drill.
- **HOT GLUE GUN** -Hot glue guns use continuous heating elements to melt the adhesive. The gun would heat the glue, and you could use the hot glue to adhere pieces of fabric together (or to make other craft projects). Hot melt also has the advantage of not losing any thickness when drying.
- **HOT AIR GUN**-A hot air gun is a device used to emit a stream of hot air. It comprises a source of heat usually an electrically heated element and a mechanism to move the hot air. Different types of heat gun operating at different temperatures and with different airflow can be used to strip paint, shrink heat shrink tubing, shrink film, and shrink wrap packaging, dry out damp wood, bend and weld plastic, soften adhesives, and thaw frozen pipes.



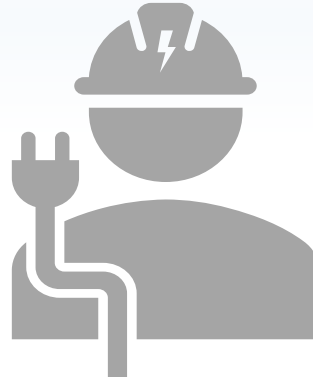


# Worksheet Time

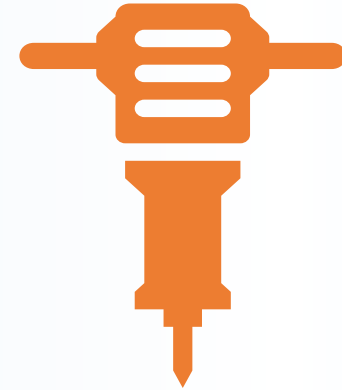




**The first electric hand drill was invented in 1895 in Germany.**



**The earliest form of a drill to be found on Earth is the bow drill, which was primarily used to start fires and not to create holes.**



**In 1916 Black & Decker added a pistol grip which made it possible for one person to drill without the help of another person.**



