

Metalworking Portfolio



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Bearing Puller



Materials

- 3/4" x 1/4" Steel
- 3/4" x 3/4" Steel
- Bolt
- Screws

Tools

- Hacksaw
- Double Cut File
- Tap and Die set
- Drill Press
- End Mill
- Wire Brush
- Letter Punch and Hammer
- Scribe
- Layout fluid (optional)
- Metal Lathe

Outcomes

- Students learn the difference between metalworking with hand tools and power tools
- Laying out measurements with the scribe and layout fluid
- Cutting metal with the Hacksaw, including at specific angles
- Drilling holes and using cutting fluid
- Cutting threads into a hole with a tap
- Cutting threads onto a bolt with a die
- Using the mill with different end mills
- Using the metal lathe to make a point
- Using a file
- Using a letter punch
- Using a wire brush to remove slag and finish a part

Sheet Metal Toolbox



Materials

- 22 Gauge Galvanized Steel

Tools

- Metal Shear
- Aviation Snips
- Metal Break
- Spot Welder
- Scribe
- Letter Punch and Hammer

Outcomes

- Laying out measurements with the scribe
- Using the metal shear
- Cutting metal with aviation snips
- Using the metal break to fold safety tabs and 90 degree corners
- Using the spot welder
- Using the letter punch

| **Garden Trowel**



Materials

- 1/2" x 1/4" Steel
- 22 or 20 Gauge Galvanized Steel
- Rivets
- Spray Paint

Tools

- Metal Shear
- Beverly Shear
- Hammer
- Hacksaw
- Comb Machine
- Slip Roller
- 2" Cast Iron Pipe
- Anvil for Rivets
- Vice
- Letter Punch
- Drill Press
- Vice Grips

Outcomes

- Laying out measurements with the scribe
- Using the metal shear
- Cutting rounded corners with the bevelly shear
- Using the slip roller
- Using the comb machine
- Using the drill press and cutting fluid
- Using the letter punch
- Bending metal by hand with the help of a vice
- Installing rivets
- Finishing a project with spray paint

Fish Bonker



Materials

- 1 1/2" Aluminum Round Stock

Tools

- Metal Lathe
- Right Cut Lathe Tool
- Hacksaw
- Metal Cutting Bandsaw
- Centre Drill
- Live Centre
- Three Jaw Chuck
- Felt Marker
- Double Cut File
- Knurling Tool
- Polishing Wheel

Outcomes

- Using the Metal Cutting Bandsaw
- Properly securing material in the three jaw chuck
- Using the right cut lathe tool to surface the end of stock
- Using the centre drill to drill stock
- Using a live centre
- Removing material with the right cut lathe tool
- Using the knurling tool on the handle
- Polishing the finished piece