

Major Safety Test 2022-2023 – Jr and Sr Metal
Metal Technology

Name: _____

Total: _____ / 170

Date: _____ Block: _____

General Shop Rules

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1. Before you use any machine in the metal-shop you must obtain the _____ 's permission.
2. To protect your eyes, you must wear _____
3. _____ is not allowed in the shop
4. Always pay _____ to what you are doing on the machine
5. Do not _____ the operator
6. Know what to do in case of an _____ or hazard
7. Tuck in loose _____, Remove _____ and tie back _____ to prevent it from getting caught in the machinery
8. Keep the floor and work areas _____
9. If you feel unsafe about a particular activity, consult with you _____ before proceeding
10. Always check with the _____ before using any substance that may be _____ or unknown
11. Inform the _____ in any and all types of emergencies

Tools and Materials

/10

1. Always _____ your work tightly with a _____ (tool name) so it will not slip or move
2. Take the time to get the right _____ for the job. Using the _____ improperly can lead to frustration, injury or damage to the _____ or work.
3. Always lift with your _____ not your back

4. Always carry _____ with the pointed end facing _____
5. Where do we store flammable or combustible materials: _____
6. Whose help do you ask for if you are unclear about how to use something safely?

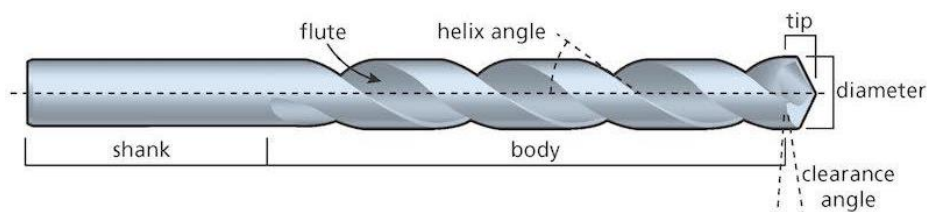
Power Tools

/9

1. Use only tools that are in _____ condition.
2. Always _____ or _____ a machine before doing any maintenance work
3. The machine operator must be qualified and have the _____'s permission
4. Only the _____ is to turn on the machine or power tool
5. Do not walk away from a machine until it has come to a _____ stop
6. Make sure all the _____ and safety devices are in place and functioning properly to keep yourself protected
7. Always wear _____ if there is any chance of injury or irritation of the eye
8. What should you check before plugging in a power tool? _____

Drill Press/Milling Machine

/13



1. After changing the drill bit make sure the _____ is clear before starting the drill
2. _____ down work to be drilled or hold in a _____ (name the tool)
3. Always wear _____ to protect your eyes
4. How do you prevent blowout or prevent unwanted holes in the drill press table? _____
_____ (name the object that will go under the project)
5. Tie _____ back
6. Remove all _____ and/or _____ that could get caught in the drill press

7. _____ (tool name) hard materials before you drill them. This will help prevent the drill bit from slipping around as you try to start a hole
8. The _____ of a drill bit (part name) should not be clamped. Ensure the _____ (part name) is held securely in the chuck so drill bit does not vibrate loose.
9. _____ or _____ machine whenever changing drill bits to avoid injury

Dremel/Hand Drill Safety

/6

1. _____ your stock before drilling or hold in a _____ (tool name)
2. Only use bits that are properly _____ and _____ in the chuck
3. Wear _____ to prevent injury to your eyes and _____ to prevent damage to your hearing

Welding Safety

/13

1. Welding can burn or shock you. Wear _____ to protect exposed skin and your body from welding spatter and UV rays, and wear _____ to protect your hands from burns and shock
2. _____ is a good conductor and could cancel out protective qualities of your clothing and gloves. Only work in a dry work area!
3. The light from welding is bright enough to damage your _____ permanently. Wear approved welding helmet with a # _____ lens or darker for mig/tig/arc welding.
4. Wear _____ when chipping, brushing or grinding your welds.
5. Welding can produce harmful fumes. Make sure you have effective _____ to clear away the fumes
6. Never weld a container that has held flammables unless it has been _____ or was filled and cleaned with _____. Vapours or fumes from solvents, fuels or other flammable liquids can be _____.
7. You should always assume that everything in the welding area is _____ so wear _____ on hands and/or use _____ (tool name) to lift or move materials

Oxy-Acetylene Torch Safety

/12

1. Open cylinders slowly, _____ turn at a time (answer with a fraction).

2. Always wear _____ (for eyes) and _____ (for hands).
3. Ensure proper _____ in case of harmful vapours or fumes from metal, brass or bronze etc. This includes shop fans or respirators.
4. Suspect everything in a welding area of being _____.
5. Never weld where _____ may be present in case of explosion.
6. Always light the torch with a _____ (tool name), _____ gas first.
7. Be conscious of where you are pointing the _____.
8. ____ before ____ or up you go! (hint: this sentence should rhyme)
9. Have the _____ check your setup before you starting torch welding or cutting with the torch.

Spot Welder

/6

1. Dress properly. Do not wear loose _____ or jewelry. _____ are required to cover the entire leg.
2. _____ footwear is not allowed on the spot welder or in the shop.
3. Use leather _____ for your hands or _____ (tool name) to hold and position the hot metal parts being spot welded.
4. Turn ____ the spot welder once you are finished using it.

Bench Grinder Safety

/13

1. Inspect the grinder prior to use to ensure there are no _____ in the abrasive disc/wheel.
2. Check there are no _____ in the area of the grinder. Sparks can ignite!
3. Only grind on the _____ of the stone, never on the side.
4. Avoid grinding _____ pieces of metal. They could easily be pulled out of your grasp and cause problems or the machine jamming/breaking.
5. Do not grind either _____ or soft metals like _____ or _____. They can easily get caught or plug up the stone
6. Grinding generates a lot of _____ in the metal. _____ regularly and take care not to burn yourself.

7. _____, _____ and _____ are required when using the bench grinder (name the 3 best types of safety equipment for eyes, ears, and body)

Right angle grinder safety

/7

1. Inspect grinder to ensure no _____ in the abrasive disc/wheel.
2. Ensure the _____ is properly in place and never remove it. It helps protect you!
3. _____ stock/material with a vice or clamp before grinding.
4. Avoid shooting _____ through the air and endangering others.
5. Wear _____ and _____ and _____ to protect from burns or other injury to ears, eyes and body.

Buffer/Wire Wheel Safety

/4

1. The biggest danger on the buffer or wire wheel is having the wheel _____.
2. Hold your work against the wheel just below the _____. If the wheel should grab it, it will throw it _____.
3. Be sure to wear _____ in case strands of wire come loose from the wire wheel

Metal Cut Off Saws/Bandsaw Safety

/8

1. Make sure the stock is tightly _____ before starting your cut. If it isn't the blade will grab it and roll it around
2. Keep your _____ clear of the path of the blade at all times
3. Do not _____ the cut. This could overload the machine or damage the blade
4. Never use your _____ to clean metal chips or filings from the saw or your material.
Metal slivers really hurt or could burn you! Use a _____ to clean metal chips or filings
5. Wear _____ and _____ for ears and eyes
6. Wear appropriate _____ when handling the stock if it is hot or sharp.

Metal Lathe Safety

/10

1. Make sure stock/material is _____ and locks are _____ before turning on the lathe.
This will prevent the material from _____ when you start to cut it
2. Never leave the _____ in the chuck. Leaving it in the chuck will lead to an accident

3. Material that extends more than twice its diameter out of the chuck should be supported by the _____ and live center to prevent flex and a hazardous situation.
4. Use extreme caution if your stock extends through the _____ end. It is easy to injure yourself if you fail to notice the protruding end out of the machine.
5. Tuck in any _____ to prevent it from getting caught in the feed and lead screws which are right by your hips.
6. Wear _____ to protect your eyes from flying metal chips.
7. Wear appropriate _____ when handling stock but not when operating the lathe.
8. Ensure the stock has stopped _____ before attempting to handle it.

Foundry/Kiln/Forge operations

/6

1. Wear _____, _____, and _____ to avoid burning your eyes, hands, or body when opening a recent casting
2. Do not adjust the kiln or oven unless the _____ has given permission
3. Overcrowding the area can cause _____. Be aware of your surroundings and communicate with _____ around you.

Plasma Cutter

/6

1. Wear approved shaded eye protection, shade # ____ or darker.
2. Use protective screens. Warn others nearby before _____.
3. Always work in a well _____ area. Do not begin working until the ventilation has been turned on.
4. _____ is a good conductor of electricity. Make sure your area is DRY before cutting.
5. Always _____ your work or the table and cut over the cutting table to contain the sparks.
6. Never cut a container that has held _____.

Spin Caster/Jewelers Torch/Soldering Iron

/12

1. Wear _____ to protect your eyes. Wear _____ to protect your hands. Tie back long _____ and strings. Remove your loose objects or jewelry.
2. Keeps your _____ away from the safety shell until it can come to a _____.

3. Make sure your work area has effective _____.
4. The tip of a torch/soldering iron should always be considered _____. Do not touch the tip!
5. When plugging in a soldering iron make sure the _____ does not touch the _____.
6. Do not breath in soldering or welding _____.
7. Melted solder can burn through _____ and your _____. Never solder upside down.

Disc/Belt Sander

/8

1. When using the belt/disc sander, always keep your _____ on the work table.
2. Sand side to side so that you wear the belt evenly. If you stay in one spot too long you will damage the _____ and break it.
3. When sanding on the round disc, always sand on the side of the disc turning _____ towards the work table. Sanding on the wrong side will throw your work up in the air!
4. When sanding small parts always use _____ to hold your material in order to protect your hands.
5. NEVER wear _____ on the belt/disc sander. If you get your fingers too close the _____ will pull your hands in.
6. _____ if the material gets hot. (what do you do with it?)
7. Hands and fingers should be no closer than _____ (measurement?) to the moving abrasive.

Beverly Sheer/Squaring foot sheer

/4

1. The sheer is a dangerous tool as you can crush or sever your fingers. NEVER place your _____ under or near the blade.
2. How many people can use the Beverly sheer at the same time? _____
3. Do not place your _____ under the foot pedal of the foot sheer.
4. Use the _____ gauge on the foot sheer to line up your material.

Chemicals, combustibles, toxic and hazardous substances safety

/9

1. Where do you store flammable or combustible materials? _____
2. Tell _____ if any container or bottle is missing its label or not in original container.

3. Before handling any hazardous substances ensure you are wearing proper protective gear such as _____, _____, and _____ (hands, eyes, and body?)
4. Follow all _____ for safe use
5. Some cylinders can explode if dropped or heated. Keep cylinders away from _____

6. Always work in a _____ area or wear a _____ to protect your lungs

Choose the best answer and place in the correct space provided. You may use each answer more than once. Some answers might not be answers at all!

- Sparks
- Oxygen
- Acetylene
- Water
- 10
- 8
- 4
- Ventilation
- Ventilated
- Striker
- Unplug
- Lockout
- Turn Off
- Half
- Force
- Brush
- Flying
- Spinning
- Rotating
- Procedures
- Tight
- Sharp Objects
- Instructor
- Instructor's permission
- Operator
- Horseplay
- Eye protection
- Attention
- Distract
- Cracks
- Torch
- Hot
- Flammables
- Sharpened
- Strings
- Pliers
- Guards
- Complete
- Away
- Hold
- Eyes
- Face
- Clean
- Hair
- Hands
- Dangerous
- Legs
- Lips
- Flutes
- Shank
- Shaft
- Scrap Wood
- Small Pieces
- Emergency
- Clothing
- Jewelry
- Hearing protection
- Protective clothing
- Respirator
- Leather gloves
- Gloves
- Welding goggles
- Welding mask
- Full face shield
- Leather apron
- Loose clothing
- Clamped in place
- Secure
- Middle Point
- Brass
- Aluminum
- Sheet Metal
- Clamp
- Tool
- Center Punch
- Vice
- Chuck Key
- Tailstock
- Headstock
- Fire Proof container
- good working order
- power switch is off
- steam cleaned
- cool your material
- grab your work
- Ignition sources
- Explosive
- Down and away from you
- anti-kickback fingers
- splitters
- push stick
- relief cuts
- rip cuts
- cross cuts
- free hand
- jig
- off button
- brake
- right
- left
- 1 foot
- 12 inches
- 30 cm
- 300 mm
- 3cm
- 1/2 inch
- kickback
- kicked
- hand
- to the side
- to the right
- to the left
- off
- on
- fingers
- foot
- belly button
- brush
- clutch
- transmission
- magic