General Safety In the Shop

* OSHA-
* How can I create a safe place to work?
* Work in the area of agricultural mechanics can be exciting and very challenging. Tasks in this area often involve the use of several different types of tools and machinery. Persons who work in this area must be especially aware of the hazards that exist and take special precautions to avoid accidents.
* How can I create a safe place to work?

1

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

Tools and Equipment

* Don’t use any equipment you haven’t had instruction for AND passed the safety test for.
* Report any tool \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ immediately.

General Shop Policies

* Report any accident \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – no matter how minor
* Put tools away when done
* Leave benches, machines, and tables \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Bench brushes and brooms on wall hangers
* Work at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pace – not frantically
	+ No running, hurrying around, etc.

Avoid Wearing

* + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- All leather high top shoes or boots work well
* Long Hair can be a safety hazard
	+ Tie it back somehow

Safety is an Attitude

* Your personal safety habits or lack of include
* Your movement in the shop
	+ Looking where you’re going
	+ Watching ends of pieces carried
* Keeping projects and tools off of the floor
* Being alert to potential safety hazards
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Don’t hurry

Personal Protective Equipment

* Eye Protection – we provide
	+ Industrial quality eye protection is required
		- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lens
		- Required at all times in the shop – whether you are working or not
	+ Contact lenses
		- The fumes, heat, and increased air movement can dry the contact lenses to the eye and cause permanent damage to the eye.
* Clothing
	+ Clean, cotton coveralls (bring your own)
		- Long sleeves – buttoned down
		- Long legs – no cuffs
		- No holes, fringes or frays
		- Leather gloves
	+ We provide
		- Filtered lens hoods

Specific Safety

Concerns when Welding:

* + Burns – sunburn\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_Metal
	+ Shock – Arc
	+ Fumes – toxic, non-toxic, galvanized, electrodes
	+ Explosion – O-A

Handling Welded Metal

* Leave \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on until the metal is cool
* Don’t hand \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ metal to instructor, TA’s, or other class members
* Mark hot metal so others don’t touch it
	+ It can still \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ even when it isn’t glowing

Safety Colors.

* **Colors in the coding system are used to:**
	+ Alert people to danger or hazards.
	+ Help people locate certain objects.
	+ Make the shop a pleasant place to work.
	+ Promote cleanliness and order.
	+ Help people react quickly to emergencies.
	+ Why Do We Have Safety Colors
	+ Why do we need to alert people to danger or hazards?
	+ What objects would we need help locating?
	+ How do colors make the shop a pleasant place to work?
	+ How does a color coding system promote cleanliness & order?

Why Do We Have Safety Colors

* + How would a coding system help with a quick reaction to an emergency?
	+ Each color or combination of colors conveys a specific message.

What Are The Safety Colors

* Red -\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Orange-*** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Safety green***-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* ***Yellow***- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* ***Blue***-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* ***Black and yellow-***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* ***White-***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* ***Black and White***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* ***Gray-***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the three conditions necessary for combustion?

* To produce fire, three components must be present at the same time and location. These three components are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are known as the ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.***

Fuel

* Fuel is any combustible material that will burn. Common fuels are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, diesel fuel, wood, paper, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Most materials will burn if they are made hot enough in the presence of oxygen.

Heat

* Heat simply refers to a type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that causes the temperature to rise. If the temperature of a room is changed from 50 degrees to 70 degrees, it is done by using heat.

Oxygen

* Oxygen is a gas in the atmosphere. It is not a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but must be present for fuels to burn.
* Oxygen is nearly always present except in airtight conditions. This fact is important to remember in fire safety and control.

How can fires be prevented in agricultural mechanics?

* The prevention of fire goes hand-in-hand with safe use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and efficient management of work areas. Proper \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of materials decreases the chance of fire and keeps materials readily available when needed. Clean work areas also decrease the chance of a fire. If any one of the three components of the fire triangle is eliminated, fire will be prevented from starting; or it will be stopped if it has started.

The basic steps in fire prevention and control are:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the different classes of fires and different types of fire extinguishers?

* To effectively and safely put out a fire with a fire extinguisher, the class of fire must be known.
* Fire classification is based on how to safely extinguish each type of material. A firefighter can be electrocuted if the stream of water hits exposed electrical wires, plugs, or controls.
* Water is not suitable on fires involving petroleum products, since the fuel floats to the top of the water and continues to burn.

Fire Classes

* Ordinary Combustibles.
	+ ***Ordinary combustibles include wood, papers, and*** trash. Class A combustibles do not include any item in the presence \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or any type of liquid.
	+ Put these out with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Flammable liquids
	+ *Flammable liquids include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, greases, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and* other liquids as long as they are not in the presence of electricity.
	+ Put out with soda acid or dry chemicals
* Electrical Equipment
	+ C fires involve the presence of electricity
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are used to put these fires out
* Combustible Metals.
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ metals are metals that burn. Burning metals are very difficult to extinguish.
	+ Only Class D extinguishers will work on burning metals.

Extinguishing a Fire

* In order to extinguish a fire as quickly as possible, the proper fire extinguisher must be used immediately. It is important to be able to recognize extinguishers by their type and by the class of fire they extinguish.
	+ 1. Water with pump or gas pressure used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fires.
	+ 2. Carbon \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gas used for Class B and C fires.
	+ 3. Dry \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_l used for Class A, B, and C fires.

How do you properly use a fire extinguisher?

* The basic steps are as follows:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Move within 6 to 10 feet of the fire.

3. Aim the nozzle of the extinguisher toward the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of the fire.

4. Squeeze lever and discharge contents using a side to side sweeping motion.

5. Have extinguishers serviced after each use.

What are the different types of burns that can occur in agricultural mechanics?

* Burns are one of the most common injuries that occur in agricultural mechanics.
* Burns can be caused by ultraviolet light rays as well as by contact with hot materials. The chance of infections is high with burns because of the dead tissue.

First-degree burns

* These occur when the surface of the skin is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in color, tender and painful and do not involve any broken skin.
* This should be treated by placing the burn area under cold water or applying a cold compress.
* Then cover the area with non-fluffy sterile or clean bandages.

Second-degree burns

* This is when the surface of the skin is severely damaged, resulting in the formation of blisters and possible breaks in the skin.
* To treat a second-degree burn, first put burn area under cold water or apply cold compress until the pain decreases. Then cover dried area with clean bandage to prevent infection.
* Seek medical attention. Do not apply ointments, spray, antiseptics, or home remedies.

Third-degree burns

* This has occurred when the surface of the skin and possibly the tissue below the skin appear white or charred. Little pain is present because nerve endings have been destroyed.
* Do not remove any clothes that are stuck to the burn.
* Do not put ice water or ice on the burns.
* Do not apply ointments, spray, antiseptics, or home remedies.
* Place cold cloth or cool (not ice) water on burns.
* Cover burned area with thick, sterile dressings.
* Call for an ambulance immediately.