

INTRO TO WELDING | DAY 4

Safety Rules and Regulations

Safety • Employability • Shop Culture



What is the most dangerous tool you have used, and what made it dangerous?

10 MIN

Strong answers identify behavior and workplace impact.

- Energy or sharp moving parts
- Heat, electricity, fumes, or pressure
- Incorrect use or missing PPE
- Poor maintenance
- Lack of training or distraction

Explain welding shop safety rules and identify hazards.

Success 1

Hazard

Success 2

Explain workplace impact

Standards

TEKS 1G, 2F

Why are welding safety procedures non-negotiable?

Think now • Gather evidence during the lesson • Revise your answer at closure

Use these terms to explain observable shop behavior.

Hazard

A condition with potential to cause harm

PPE

Personal protective equipment worn to reduce exposure

OSHA

Federal agency setting and enforcing workplace safety standards

Safety Procedure

Required steps for controlling risk

Regulation

An enforceable rule established by an authority

Hazard recognition comes before hazard control.

Welding shops may contain heat, ultraviolet radiation, electricity, fumes, compressed gases, sharp material, noise, and trip hazards. Workers must identify the source and possible harm.



Observe the behavior, condition, and workplace impact.

PPE is the last line of defense, not the only defense.

Safety glasses, welding helmets, gloves, flame-resistant clothing, hearing protection, and boots reduce exposure. PPE does not replace ventilation, guarding, housekeeping, or safe procedures.



**Example + non-example
+ consequence**

Fire prevention requires controlling heat, sparks, and fuel.

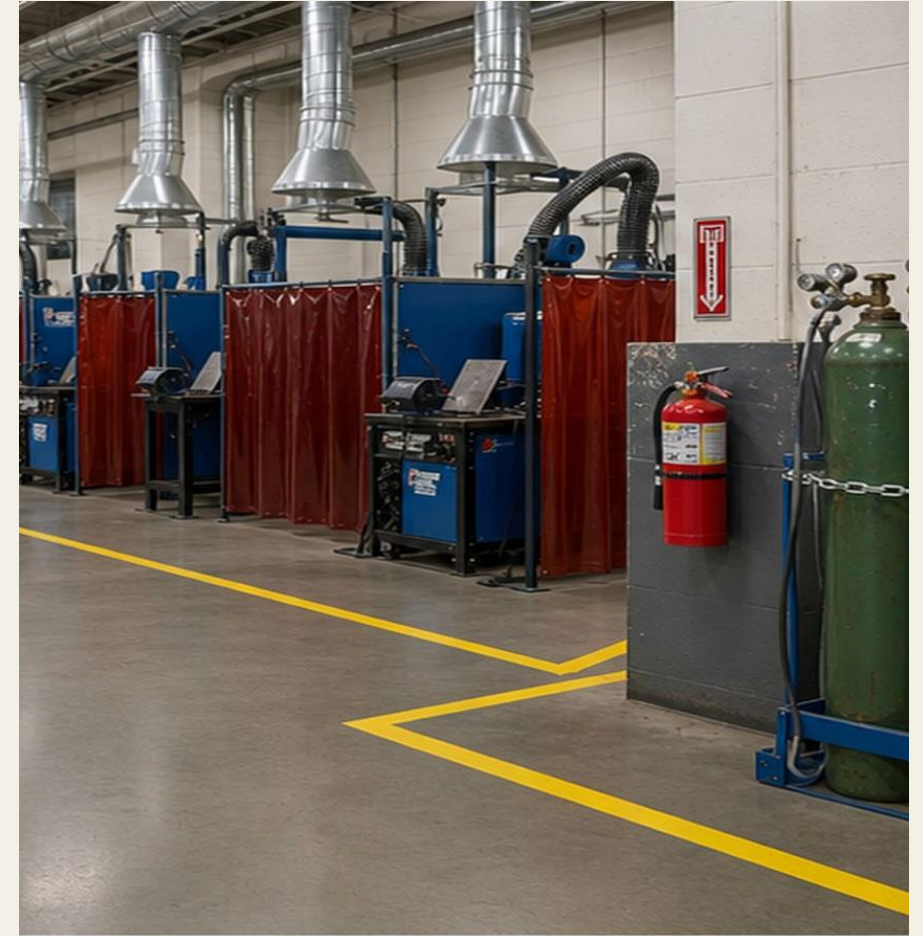
Remove or protect combustibles, maintain extinguishing equipment, use welding curtains, inspect the area, and follow hot-work procedures. Never assume a spark is harmless.



**Example + non-example
+ consequence**

Electrical safety begins before equipment is energized.

Inspect leads, plugs, insulation, grounding, and dry working conditions. Damaged equipment is removed from service and reported, not temporarily repaired by students.



Observe the behavior, condition, and workplace impact.

Compressed-gas cylinders require secure handling.

Keep cylinders upright and secured, protect valves, separate incompatible gases as required, move with approved carts, and keep away from heat and impact.



**Example + non-example
+ consequence**

Emergency procedures must be known before an emergency.

Students must know how to stop work, alert the instructor, evacuate, locate exits and emergency equipment, and avoid actions beyond their training. OSHA supports safe workplace standards and rights.



**Example + non-example
+ consequence**

Photo scenario: cord across aisle, scrap leaning unsecured, flammable container open.

Analyze the behavior, violated expectation, workplace impact, and safest next step.

Sample response

Trip hazard, struck-by/cut hazard, and fire/chemical hazard. Stop access and notify instructor; correct only as directed.

A student has a welding helmet but no safety glasses underneath.

Analyze the behavior, violated expectation, workplace impact, and safest next step.

Sample response

Incomplete PPE. Safety glasses protect when the helmet is raised and from hazards not controlled by the lens.

Think-Pair-Share: Which hazard is most dangerous?

Analyze the behavior, violated expectation, workplace impact, and safest next step.

Sample response

Risk depends on severity and likelihood. Immediate fire, electrical, gas-cylinder, or unprotected arc hazards demand urgent control.



Simulated Shop Safety Inspection

The group product must show accurate reasoning, workplace impact, and evidence from today's lesson.

- Accuracy
- Evidence
- Workplace impact
- Clear explanation

Follow the process and make every decision explainable.

- Remain in assigned inspection zone; do not touch equipment.
- Use the checklist for PPE, electrical, trip, fire, gas-cylinder, and housekeeping hazards.
- Record location, hazard, possible harm, and recommended control.
- Mark immediate-danger items and notify the instructor.
- Prepare a two-minute safety briefing.

Scenario / Content Cards A and B

Zone A: PPE & Workstations

Helmet condition, safety glasses, gloves, clothing, screens, clear access.

Record: action • reason • impact

Zone B: Electrical & Equipment

Leads, plugs, dry conditions, machine condition, unauthorized repairs.

Record: action • reason • impact

Scenario / Content Cards C and D

Zone C: Fire & Housekeeping

Combustibles, extinguisher access, hot material, scrap, cords, spills.

Record: action • reason • impact

Zone D: Cylinders & Emergency Readiness

Cylinder security, valve protection, cart use, exits, alarms, emergency equipment.

Record: action • reason • impact

Use evidence to compare, revise, and defend group decisions.



Which hazard had the highest risk and why?



Which controls remove the hazard versus only reduce exposure?



What should a student do if unsure whether a condition is safe?



What answer did your group revise after checking the evidence?

Use these criteria to check the group product.

Zone A: PPE & Workstations

Identify missing/damaged PPE and blocked work areas.

Zone B: Electrical & Equipment

Damaged equipment is tagged/reported and not used.

Zone C: Fire & Housekeeping

Remove ignition fuel and keep exits/aisles clear.

Zone D: Cylinders & Emergency Readiness

Secure cylinders and maintain emergency access.

Demonstrate your own understanding.

- Complete a safety contract response: explain five major rules in your own words.
- For each rule, state the hazard controlled and the action you will take.

Answer independently before leaving.

1

Define hazard.

2

Why is PPE important?

3

What is OSHA?

Expected responses and scoring guidance.

1. A hazard is a condition with potential to cause injury, illness, or damage.
2. PPE reduces exposure when hazards cannot be completely eliminated, but it must be used with procedures and controls.
3. OSHA sets and enforces workplace safety standards and provides training, guidance, and worker protections.

Safety procedures are non-negotiable because welding hazards can cause permanent harm in seconds.

OBJECTIVE

Explain welding shop safety rules and identify hazards.

SUCCESS CRITERIA

Use accurate vocabulary, explain workplace impact, and support a decision with evidence.

ESSENTIAL QUESTION

Why are welding safety procedures non-negotiable?