



GRIT Camp Safety Guide



Last Revised: September 17th, 2026

GRIT Camp Role Recap

Host: *The individual or company organizing and supporting the GRIT Camp.*

Host Facilitator: *Owns camp-day preparation and operations.*

Education Lead: *A trained tradesperson who is the instructional leader for the GRIT Camp.*

Mentor: *A trained tradesperson directly coaching 1–2 Students throughout the camp.*

Volunteer: *An individual helping with event-day logistics and general assistance, not education.*

Students get excited when they get to use drills, saws, and torches to assemble their projects at GRIT Camp! However, those activities come with real safety risks, and everyone's goal at GRIT is to let Students discover the trade skills safely.

The Host Facilitator identifies an adult experienced with children who can manage attendee behavior with clear directions and firm, respectful boundaries. Tell Mentors whom to call. If a Student cannot participate safely, pause tool use, involve that adult, and keep the Student supervised; contact the parent if safe participation cannot resume.

This guide explains the safety information that Hosts, Education Leads, and Mentors will need to know for camp day. Defer to the safety professionals associated with the location or Host organization for site-specific safety requirements and additional protective equipment.

Required PPE

PPE **must** be worn by all people in the area whenever there are sharp objects or torches in use. GRIT provides the necessary PPE for all Students with the shipped Student kits:

- High-visibility vest
- Safety glasses
- Safety gloves

All persons in the work area, including the Host and Mentors, must wear the applicable protective equipment for the activity. Student high-visibility vests remain part of the Student kit; Mentor vests are optional unless required by the site-specific safety plan. GRIT does NOT provide extra adult PPE. The Host must supply it or arrange for adults to bring their own. Keep hearing protection available at the saw station and follow the host/site safety professionals' requirements. All persons in the area must also:

- Tie long hair back



- Wear closed-toed shoes; Mentors must wear work boots or other closed-toe, safety-style shoes appropriate for a trades professional

GRIT recommends that Mentors bring their own PPE to show what they wear on the job site and lead by example.

Carbon Monoxide Protocol

In addition to PPE, GRIT Camps also require **low-level carbon monoxide alarms** for any torch work that takes place indoors or in poorly ventilated areas. These areas should also have a ventilation plan, such as opening windows and/or making use of fans to direct indoor air out.

*If a low-level CO monitor **exceeds 10 PPM or makes noise**, EVERYONE must shut down their equipment and evacuate. No Students are allowed back into the work area until the Host and Education Lead have cleared the area and confirmed that CO levels are below 10 PPM.*

First-Aid Kits

There should be a first-aid kit in any and all work areas.

Work areas with saws and torches need a FULL first-aid kit with the following items:

- Bandages
- Burn cream
- Antiseptic wipes
- Antibiotic ointment
- Tourniquet



Mentors should be able to grab it quickly in case of an emergency.

There should also be smaller first-aid kits in work areas that don't have saws, drills, or torches. These kits don't require burn cream or items for severe bleeding but should still have bandages, antiseptic wipes, and antibiotic ointment for injuries like scratches.

A first-aid kit should also be available for demonstration purposes during the safety briefing.

Emergency Information

The GRIT team will collect **emergency contact information** for all Students. Mentors should be willing to provide emergency contact information in case something happens to them as well.

Hosts will need to collect and store the following emergency items on-site:

- Directions to the nearest hospital
- Bad weather plan (place to take cover if outdoor activities are interrupted)
- Emergency plan for severe weather (shelter in place)

- Fire safety policy
- Basic shelter plan

Safety Briefing

Before ANYONE goes into the work area, Students and Mentors must attend the combined Challenge Introduction and Safety Briefing. Target 8–10 minutes for the combined session while covering all required safety points before work begins.

In most cases, the **Education Lead** will own the briefing. (If Ty Branaman comes to your GRIT Camp, he will likely do it, or you may have an in-house safety instructor.) For the purpose of creating a script that any qualified safety leader can use, we will refer to the safety briefing leader as the **Safety Leader**, whether that's the Education Lead or someone else.

The safety briefing covers PPE, hazards, and more. Prior to the briefing, the Host must ensure that the Student PPE kits are out:

- Safety glasses
- High-vis safety vest
- Gloves
- Tool apron (not PPE but still important)



After the quick introduction, the Education Lead will say, “Now, we’re going to learn about some important safety rules for camp today.” They will physically lead Students to that room.

Once the Students are in the room with their PPE for the safety briefing, the Safety Leader will follow this basic sequence:

1. Make it clear why it’s important to protect our **eyes**.
 - a. Students and Mentors will put on their safety glasses.
2. How can we keep our tools organized? Use our **tool aprons**.
 - a. Students will put their tool aprons on.
3. Make it clear why it’s important for us to be **visible** on a job site.
 - a. Students will open and put on their high-vis vests. Mentor vests are optional unless required by the site-specific safety plan.

4. Make it clear why it's important for us to protect our **hands**.
 - a. Students and Mentors will put on their gloves.
5. Share the safety rules:
 - a. Stay with your Mentor at all times.
 - b. Don't use any tools without your Mentor's supervision.
 - c. No running or horseplay.
 - d. If you have a question or want to explore something, ask your Mentor.
6. Confirm that everyone has their PPE and badge on before moving to their Stations.
 - a. Distribute tools and Blueprints here, too, if applicable.
 - b. Mention basic uses for the Blueprint and that Students will use it the whole time.
7. Mentors will kick off the discovery process by exploring the tools and Blueprint.
 - a. Ask them to take apart the 6-in-1 screwdriver.
 - b. Ask them what the ticks on a tape measure represent.
 - c. Point out the dimensions on the Blueprint and ask how we can use them.
 - d. Point out the different views on the Blueprint and ask why we're looking at the same thing a few different ways.

The safety briefing is short, but it's the Students' ticket to entry and starts the discovery process! It's up to the person who leads it and the Mentors to make it interactive and generate excitement about the work to come.

A more detailed safety briefing script is available at the back of this booklet.

Carpentry

The carpentry module has a few key hazards:

- Extension cords for saws
 - Trip and fall hazard
- Saw blades
 - Dust: eye hazard
 - Blade: amputation hazard
- Drills, nails, and screws
 - Cut or puncture hazard
- Awkward body posture while drilling
 - Strain or soreness hazard



Extension Cords

The Host or Host Facilitator should route the extension cords out of the way during camp setup as much as possible.

If having extension cords and wires in the middle of a foot traffic zone is unavoidable, then there should be signage or a verbal warning from Mentors indicating the trip hazard.



Saw Blades

The most dangerous part of the carpentry module is the saw. We want the Students to be the ones who operate the saws, but here are some important safety policies:

- Leave saws UNPLUGGED after each use!
- Safety glasses and gloves MUST be ON.
- Students should clamp the wood down.
 - Don't hold it in place with their hands.
- Students must have a hand behind their back

Mentors can plug the saw in when the Student is satisfied with their upcoming cut and puts their free hand behind their back.

Drills and Sharp Fasteners

Mentors should encourage Students to be careful and slow with their tools.

Enforce the following rules:

- Wear gloves at all times
- Don't wave drills around
- No horsing around

Drilling

Many Students will start trying to drive their screws or drill holes into the box horizontally (Photo #1). That isn't very effective and puts their bodies in an awkward position.

Mentors should **let the Students struggle for a few minutes** and then ask if they can come up with an easier way.

Students may arrive at the conclusion that drilling down is easier on their bodies (Photo #2).

Regardless, **let the Student make the choice** for how to hold the drill.



PVC, Copper, and Aluminum

The PVC, copper, and aluminum activities have several overlapping hazards:

- PVC glue and primer
 - Inhalation hazard
- Cutting PVC and copper
 - Sharp edges: cut hazard
- Torches (all types)
 - Burn hazard (body)
 - Fire hazard (property)
- Compressed gas cylinder (oxygen, acetylene, or propane)
 - Fire, explosion, or projectile hazard

PVC Glue and Primer

PVC glue and primer both contain toxic chemicals that should **NOT** be directly inhaled:

- Tell Students to avoid inhaling these directly
- Supervise Students and intervene if they DON'T follow those directions

Cutting PVC and Copper

Sharp edges from the tools and the cut metal are the biggest hazards here. Take the following precautions:

- Make sure gloves are on at all times
- Avoid touching the edge of cut copper
- Warn students about pinching and cutting hazards
- Make Students close the PVC cutters when no longer in use

Torches

The different torch types will each have unique safety considerations. Know which one(s) you will be using.

For **acetylene and oxy-acetylene** torches:

- Check for leaks on acetylene and oxygen tanks and regulators beforehand (if applicable)
- Tie down acetylene and/or oxygen cylinders to tables to prevent tipping



- Use proper acetylene tank wrenches
- Use manufacturer-approved tips ONLY
- Light the torches appropriately
 - Air-acetylene: Push-button preferred, flint striker if manual
 - Oxy-acetylene: An experienced Mentor uses a flint striker and handles ignition, flame adjustment, and shutdown. A Student may handle the lit torch only under that Mentor's direct supervision.

For **propane or MAP/Pro** torches:

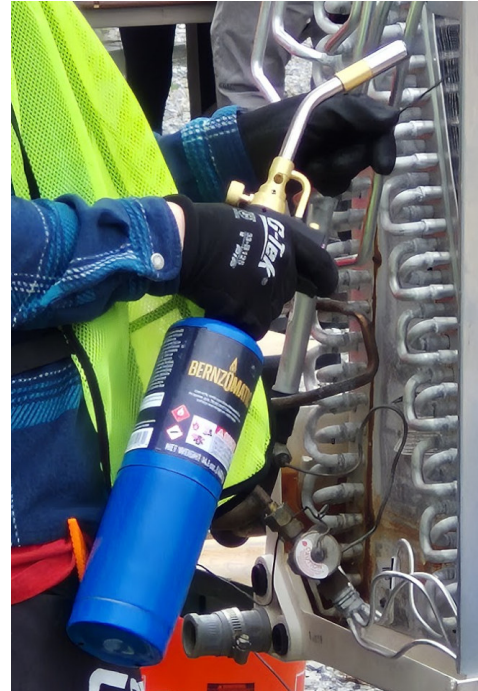
- Keep torches upright when not in use
- Hand-tighten the cylinder
- Use the built-in trigger to light the torch, NOT a striker

Regardless of torch type, Students need to follow these **safety rules**:

- Wear gloves and the eye protection appropriate to the process. For torch brazing, operators and exposed observers need properly rated protection of at least shade 3; use a higher shade when the manufacturer or site requires it. Ordinary clear safety glasses alone are not sufficient for brazing.
- Place large, wet towels down on any surfaces before doing any hot work over them.
- Do not aim the torch at any person (or any place other than the item being brazed, soldered, or repaired).
- Do NOT touch the torches without Mentor supervision.
- For this non-service GRIT practice assembly, leave the copper joint supported and undisturbed for approximately 30 seconds after removing the flame, and until the filler has solidified. The Mentor may then supervise wet-rag cooling or water quenching, keeping hands clear of steam and hot water. Keep the work in the marked cooling area and confirm it is cool before handling. For aluminum repairs, use the selected product's cooling instructions.

The Host selects optional modules and lunch demonstrations in advance with the Education Lead. Their materials and staffing are required only when selected. On-site leaders may adapt that selection when time, materials, and competent supervision permit. Make sure each Mentor's responsibilities for selected aluminum and other torch activities are clear before camp.

The full torch material lists and procedures are in the **GRIT Soldering, Brazing & Aluminum Repair Quick Start Guide**.



Hammering the Backing Board

Once all work has been checked, Students can apply the backing board with a hammer and finish nails. They can hit their fingers with their hammers or seriously injure someone if they run around with them.

Here are some things to keep in mind when Students work with hammers:

- Don't let Students wave hammers around or run with them
- Students **MUST** wear gloves and safety glasses when using hammers
- If needle-nose pliers are present, ask, "Is there a tool we can use to hold that nail in place instead of your fingers?"



Lunch

Lunch activities will vary widely by camp. Individual safety considerations are listed in the **GRIT Camp Lunch Activity Guide**.

PPE is not critical here, as Students will take off their gloves to eat and won't need glasses. However, Students must follow the following safety rules:

- Only handle discovery objects with clean hands
- Keep water away from outlets
- Handle glass objects carefully
- Follow the Education Lead's directions at all times



Disassembly (Optional)

Your camp may not have disassembly. However, if you do, the main risks are sharp objects:

- Screwdriver
- Fan or blower blades
- Metal edges

Regardless of what is being disassembled (generally HVAC blowers and condensing fans), **make sure Students have their safety glasses and gloves on at all times.**



Electrical

Before Students even put their hands on the multimeters, there are some setup instructions to keep in mind for safety:

- Black lead goes to COM; Red lead goes to the voltage and resistance jack
- Set the meter to DC volts for batteries and the low-voltage camp circuit

Students do NOT need to wear their gloves, as those can make the activity more difficult. However, here are some rules for the Students they'll still need to keep in mind:

- Wear safety glasses at all times
- The leads go between two points in a circuit or on a battery or bulb, nowhere else
- Only the Mentor may change the meter between DC voltage and resistance/continuity. Remove all circuit power before resistance/continuity checks. Do not measure current or move the red lead to an amp/current jack.
- Do NOT move the leads to other jacks

The bulbs are also made of glass, so Students must be careful while handling them.

In short, it's up to the Host and Mentors to make sure the meters are set up safely and stay that way. Then, it's all supervision as usual.

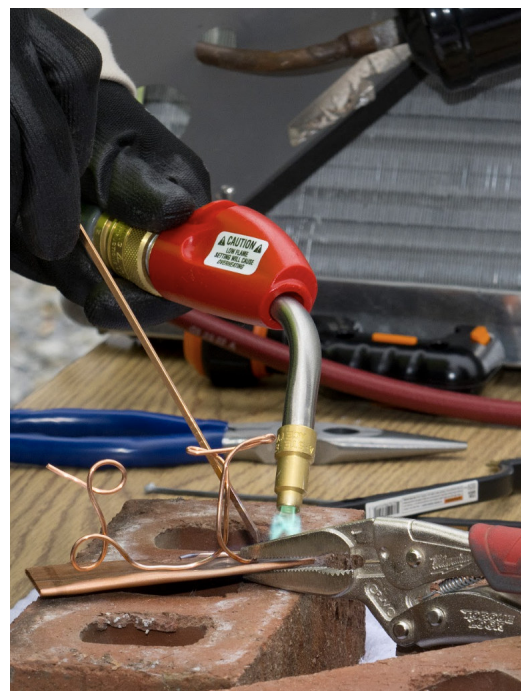
Final Customization

Like the lunch module, there is a lot of room for variation here. At a minimum, there will be scissors and hot glue, which should come with the following safety rules:

- Do NOT run with scissors or other craft items
- Watch out for your hands when working with hot glue
- Handle scissors carefully to avoid getting cuts

If you have scrap copper wire and tubing, you can have the Students do a fun activity:

- Flatten the tubing with a hammer or mallet
- Bend the wire into the shape of their name or initials
- Weld the wires to the flat tubing to create a stand



If this activity will take place, **Students MUST wear their safety glasses and gloves.** Follow the same torch safety protocols mentioned in the **PVC, Copper, and Aluminum** section.

Thank You for Taking Safety Seriously!

The goal of GRIT Camp is to give the Students a fun, safe way to learn some trade skills that will help them when they're older. When these Students choose a career in the skilled trades or build something of their own, they will have you to thank.

Let's all do our best to keep the Students safe.

Safety Script

Here is a pre-made safety script that touches on all the main safety points. Feel free to give it to the Education Lead or whoever will be leading the safety portion.

Introduction:

"Now, we're going to learn some safety rules for camp today!"

Eye Protection:

"Everybody close your eyes. Shut them real tight. Put your hands over your eyes so you can't see anything. Now, read this paper I'm holding up."

[Let the Students struggle.]

"Come on, we're running out of time! Why isn't anybody reading the paper?"

[A Student may answer something about not being able to see.]

"Okay, open your eyes. We really need our eyes! So we need to keep them safe from dust, sharp objects, and fire. How do we do that with what's in front of you?"

[A Student may point out the safety glasses.]

"With your safety glasses! Everybody put them on. You'll have to keep these on THE ENTIRE TIME. Can you do that?"

[Get confirmation and let the Students and Mentors put them on together. Proceed.]

Tool Apron:

"We're going to be building stuff and doing work, so we'll need some... [tools]!"

"We can't just leave our tools lying around in the open, though! We could lose them. What can we use to keep them safe and organized while we're working?"



[Students might point to the tool apron.]

“Your tool apron! Whenever we aren’t using tools or gloves, they go in here. Go ahead and put it on. If you need help, your Mentor can help you.”

[Let the Students put their tool aprons on with help from Mentors, if needed.]

High-Visibility Vest:

“Now, we’re going to put on our vests. These are called high-visibility or high-vis vests.”

[Let the Students unwrap their vests.]

“We have to be able to see each other. We’ll know where you are—you’ll know where everyone else is. Nobody gets lost. Nobody gets hit by a 2x4 because you didn’t see them.”

[Let Students put them on. They can leave the packaging trash on the table.]

“Make sure your ID badge is visible. We only let authorized people on the job site.”



Gloves:

“All right, I want everybody to close their hands into fists. Close them real tight! Now, without using your fingers, I want you to fold up the packaging all neat, set it aside, and separate your gloves.”

[Let the Students struggle.]

“You can’t grab it? How about picking up your pencil and writing your name?”

[Watch the Students struggle.]

“You can’t? What would make the job easier?”

[Wait for one Student to mention fingers and/or hands.]

“Fingers! Right! We’ll be working with saws and torches, so we want to make sure we leave here with all of our fingers. How do we keep our fingers safe?”

[Students have the gloves in front of them and will say so.]

“Gloves! Go ahead and put them on. You’ll need to keep them on the WHOLE time unless your Mentor says you can take them off.”

Safety Wrap-Up & Blueprint Introduction:

“Now, this is an active job site with torches, saws, and drills, so you’ll have to stay with your Mentor at all times. Don’t go off playing with other tools without your Mentor.”

“But if you have any questions or want to try something, ask your Mentor! It’s great to be curious, and your Mentor will help you explore those things safely.”

“Everybody good? You got your badge? Vest? Safety glasses? Gloves? Tool apron? Great! Now what do we need to get started with our work?”

[Students answer some variation of tools, plans, etc.]

“We’ll need tools and a Blueprint! This Blueprint has your assignment and will take you through these skilled trades. You will use this the entire time, so keep it handy and don’t be afraid to look at it if you need help or want to check your work.”

“But you’ll notice that it’s missing some measurements—it’s up to you to find them! You’ll get a tape measure to help you. That 2x4 may not be what it seems, so make sure to measure everything and double-check or triple-check before you make any cuts!”

“Now, is everybody ready? Great! We’ll check your PPE and your badge, and you’ll be ready to go if everything’s in order. Let’s go!”