



# BUILDING INDUSTRY TECHNOLOGY ACADEMY

A program promoted by the  
California Homebuilding Foundation



## UNIT ONE: SAFETY & ORIENTATION

## **YEAR TWO**

### **UNIT ONE: ORIENTATION AND SAFTEY**

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**Lesson 1:** Safety Guidelines & Safety Exam (2-class periods)



## Lesson One: Safety Guidelines & Safety Exam (2 Days)

### Objectives

#### Students will be able to...

- Understand student expectations for the course and what they will learn throughout the year.
- Identify general shop safety practices/expectations and demonstrate knowledge of a safe attitude.

### Common Core Standards

RSIT 11-12.2  
RLST 11-12.2  
Communications 2.1, 2.4  
Health & Safety 6.1, 6.2, 6.3, 6.5, 6.5, 6.6  
Responsibility and Flexibility 7.2  
CTE Pathway D 1.1, 1.2, 1.3  
Ethics and Legal Responsibilities 8.1 & 8.4

### Materials

Class Syllabus  
BITA Pre-Survey  
Safety Guidelines  
Safety Test

### Lesson Sequence

#### Day 1

- Introduce yourself and review the *Class Syllabus*. (15-20 minutes)
- Students complete *BITA Pre-Survey*. (5-10 minutes)
- Review *Safety Guidelines*. Model appropriate safety as needed. Answer any questions students may have regarding the safety guidelines. Then, have students sign guidelines and turn it in. (30 minutes)

**Day 2**

- Answer any questions students may have about safety guidelines. Review guidelines as a class. (15-20 minutes)
- Pass out the *General Safety Test*. They must pass the test with a score of 100% in order to move into the shop/lab. Students may take the test again if needed. (30 minutes)

**Assessment**

Check for understanding throughout lesson.  
Use safety test as formative assessment.

**Accommodations/Modifications**

One on One Support  
Check for Understanding  
Visuals as Needed  
Safety Test May Need to Be Read Aloud To Students

**BITA Pre-Survey**

**Building Industry Technology Academy Pre-Survey**

Grade Level: \_\_\_\_\_ Student ID #: \_\_\_\_\_ BITA Class Level: \_\_\_\_\_

**1. Which BITA classes have you completed?**

Level 1 \_\_\_\_\_ Level 2 \_\_\_\_\_ Level 3 \_\_\_\_\_ Level 4 \_\_\_\_\_

**2. When you have completed this class will you enroll in the next level BITA class?**

Yes \_\_\_\_\_ No \_\_\_\_\_ Unsure \_\_\_\_\_

**If not, why?**

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**3. What was your reason for enrolling in the BITA class?**

- \_\_\_\_\_ I want to learn a skill or trade.
  - \_\_\_\_\_ I want to work in the construction industry.
  - \_\_\_\_\_ I thought it would be interesting.
  - \_\_\_\_\_ A guidance counselor or teacher recommended the class.
  - \_\_\_\_\_ I know someone who works in construction and they suggested I take the class.
  - \_\_\_\_\_ Other
- 

**4. Are you interested in working in the construction industry when you complete your education?**

Yes \_\_\_\_\_ No \_\_\_\_\_

**5. Do you think working in the construction industry will provide you career opportunities and the advancement you desire?**

Yes \_\_\_\_\_ No \_\_\_\_\_

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## **6. Which specific trade or aspect of construction interests you? (Check all that apply)**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Carpentry     | <input type="checkbox"/> Drywall/Plaster    | <input type="checkbox"/> Engineering           |
| <input type="checkbox"/> Tile/Flooring | <input type="checkbox"/> HVAC               | <input type="checkbox"/> Grading/Excavating    |
| <input type="checkbox"/> Estimating    | <input type="checkbox"/> Concrete/Masonry   | <input type="checkbox"/> Architecture/Drafting |
| <input type="checkbox"/> Stucco/Siding | <input type="checkbox"/> Plumbing           | <input type="checkbox"/> Roofing               |
| <input type="checkbox"/> Surveying     | <input type="checkbox"/> General Contractor | <input type="checkbox"/> Other                 |

## **7. Rank the following in order of importance to you, with 5 being most important and 1 being least important.**

### **I want to learn:**

- Skills in a specific trade.
  - About a variety of different trades.
  - Skills so I can get a job in the construction industry.
  - How to build a house.
  - What it is like to work at a construction site.
  - Other:
- 

## **8. What are your plans after graduation?**

- Getting a job.
- Continue your education.
- Go into the military service.

## **9. If you are planning in continuing your education, what type of school are you planning on attending?**

- Trade School
- On the job training /apprenticeship
- Community College
- Regional Occupational Program
- 4-year college or university

## Safety Guidelines

### General Safety Rules

#### 1. Paying attention

- a. Keep your mind on your work at all times.
- b. Watch where you are going.
- c. Look out for anything in your way.
- d. Do not move any materials or equipment unless you can clearly see your way.

#### 2. Keeping your instructor informed

- a. Report all accidents and injuries, even slight ones, to your instructor.
- b. Report to your instructor any unsafe condition or unsafe work behaviors that could injure others.
- c. Report any damaged equipment to your instructor.
- d. Work together to help everyone avoid accidents and learn safety practices.
- e. Check with your supervisor or instructor before using any equipment.

#### 3. No "Clowning Around"

- a. "Horseplay" can be extremely dangerous.
- b. A playful push can result in a serious accident.
- c. Accidents don't just happen, they are caused
- d. Do not try to fix broken equipment, report it to your instructor right away.
- e. Do not throw anything in the shop.
- f. Never hold parts, such as washers, nails or screws, in your mouth.

#### 4. Good Housekeeping

- a. Keep floors clean, dry and clear of objects. Cords, cables, and air hoses should be off the floor.
- b. Put chairs and equipment away.
- c. Aisle ways must be clear. Watch the floor for piles, exposed nails, spills, or other hazards. If you see anything on the floor, pick or clean it up right away.

- d. Keep the doors of lockers and cabinets closed.
- e. Store all rags with any grease, oil, gasoline, paint, or other flammable materials on them in metal containers. Put all scrap in a scrap box.
- f. Use a brush or whisk broom to sweep scraps from your workbench or table; do not use your hands.

### 5. Walk, don't run

- a. You are less likely to trip, fall, or collide with another person or object.
- b. Do not walk too closely to doors. They might open suddenly. Open doors slowly.
- c. When approaching a corner, slow down or stop to be sure no one else is coming around it.

### 6. Cleaning up spills immediately

- a. Be careful when handling any liquid-even water.
- b. If you see oil or grease on the floor, wipe it up, even if you didn't spill it.
- c. If the spill is large, block off the wet area and report it to your instructor.
- d. Report spills of dangerous or hazardous liquids. Remove any sources of ignition, and then stay out of the area. **Clean up of hazardous materials should be done by trained personnel only.**

### 7. Lifting and carrying correctly

- a. Think and plan before lifting.
- b. Check item for weight and rough or slippery surfaces. Know where to will grip it.
- c. Get help if the object is too heavy or longer than 8 feet.
- d. If you need to, use a dolly or handcart. Handcarts should be pushed, not pulled.
- e. Survey the area to be sure the path is clear.
- f. Know where you are going to put down the load.
- g. If another person is helping you, decide who will say when and where to move to.
- h. Lift correctly.
- l. Stand on firm ground, not on boxes, crates, buckets, chairs or other unstable objects.
- j. Get a good grip using both hands.
- k. Keep your back straight and knees bent.



- l. Lift using your leg muscles.
- m. Draw the load in close to your body. Never lift or lower a load with your arms extended away from you.
- n. Do not twist your body when lifting or carrying.
- o. Carry no more than what you can easily handle.
- p. Be sure you can see over the load.
- q. Move slowly; do not hurry.
- r. Hold the object close to you.
- s. Do not twist your body when carrying.
- t. Watch for and avoid obstructions or loose material.
- u. Carry a long piece with its front end high enough to avoid striking anyone.

### **Personal hygiene and protection**

#### **1. Maintain personal cleanliness**

- a. Make sure you have recently taken a shower before coming to your training site.
- b. Your hair should be clean and neat. Long hair should be pulled back when operating equipment.
- c. Tuck in loose clothing and remove rings and watches before operating any equipment.
- d. Wear clean, close-toed shoes.
- e. Never point a high-pressure air nozzle at anyone. Don't try to clean off your clothes with an air hose unless it is fitted with OSHA-approved low-pressure safety nozzle.

#### **2. Use protective attire**

- a. Inspect your protective clothing and equipment to make sure it fits and is clean, comfortable, and safe.
- b. Wear safety glasses, goggles or a face shield to protect your eyes against flying objects or spray.
- c. Use special gloves when working with chemicals. Do not use gloves around moving machinery.
- d. Use earplugs or earmuffs to protect yourself from noise. Make sure the earplugs or earmuffs fit correctly.
- e. Respirators work well for you if you use them correctly. Know respirator procedures before using.

## **Emergency/disaster response**

### 1. Evacuation procedures

- a. Earthquake, fire, bomb threats, or chemical spills may require evacuation.
- b. You might be notified of the need to evacuate through:
  1. Building alarms
  2. Building public address system
  3. Security or police announcement
- c. Leave calmly and quickly through the nearest exit.
- d. Always treat an evacuation as a real emergency. Don't assume it is only a drill.
- e. Do not return for personal items such as keys, purse, or clothing.
- f. Cooperate with the training site supervisor or whoever is directing the evacuation. Do not argue with them, help them.
- f. Stay with the group in your assigned area until everyone can be accounted for.

## **Earthquake preparation**

### 1. Prepare for earthquakes

- a. Know where emergency supplies (canned food, first aid kit, flashlight with extra batteries, etc.) are stored in your training site.
- b. Do not store heavy objects in overhead storage areas.
- c. Report any bookshelves or tall cabinets against walls that are not secured.
- d. Keep emergency supplies in your car.

### 2. Use caution during an earthquake

- a. Get away from glass windows, stacked items, and unsecured objects ex: cabinets.
- b. Get under sturdy furniture or in a hallway in the center of the building.
- c. Stand in doorways, preferably without doors. Doors may slam shut on your fingers.
- d. Never run outside a building: roof tiles or building façade may fall and hit you. Stay put until the shaking stops.
- e. If outdoors when the quake starts, stay outside and move to an open area. Stay away from power lines, trees, or structures that could fall over.

### 3. Safety procedures after an earthquake

- a. Do not smoke or use candles, matches, or other open flames.
- b. Do not leave the building until routes have been checked out for safety.
- c. Shut off any leaking or broken water pipes.
- d. If you hear or smell gas, inform your instructor. Leave the area promptly.
- e. In a multi-story building, use the stairs, not the elevator, if evacuation is necessary.

## **Tools and equipment**

### 1. Hand tool safety

- a. Two people can't use the same tool at the same time.
- b. Make sure you have a good grip. Clean grease from your hands before you grip a tool.
- c. Always check in front of and behind you before swinging a hammer.
- d. Make sure tool heads of hammers are securely fastened to the handle.
- e. Give tools to another student with the handles extended.
- f. Keep your stock securely fastened in a vise or clamps while working on it. Close unused vises, but never tighten and unused vise.
- g. Do not leave tools or materials projecting from a vise or workbench where someone can bump into them.

### 2. Sharp tool safety

- a. Always keep tools sharp, dull ones are dangerous.
- b. Carry sharp tools in your hand pointed down. Do not carry sharp-edged tools in your pockets.
- c. Keep both hands behind the driving edge of any sharp-edged cutting tool.
- d. When you are using sharp cutting tools, cut away from your body. Wear goggles, and don't cut towards others.
- e. When you are using metal snips, don't pinch your fingers between the handles while making a cut.

### 3. Power tool safety

- a. Never work in the shop unless there is an instructor present. Be sure machines are anchored securely.
- b. Work with machines or equipment only after you have been given safety instructions

for that equipment. Wear appropriate personal protective equipment.

- c. Do not attempt to repair a machine yourself. Report any damaged or broken machines to your instructor.
- d. Only the operator and instructor should be in the defined safety zone around any machine.
- e. Never crowd around an operating machine. This may distract the operator's attention, leading to injuries. Safe operation requires concentration.
- f. Disconnect portable tools when not in use.
- g. Keep machine guards in proper position at all times. NEVER reach around or under a guard.
- h. When turning off your machine, stay by it until it has completely stopped. Always use caution when approaching machines in operation.
- i. Clean or adjust machinery only when it has stopped. Keep rags, hands, tools and other materials away from operating machines.
- j. Follow safe lockout/tag out procedures.

#### 4. Electrical safety

- a. Check that electrical connections are tight. Do not overload outlets or force plugs.
- b. When disconnecting a machine, pull the plug out at the wall. Never unplug a machine by pulling on the cord.
- c. Use extension cords only when necessary and only if rated high enough for the job.
- d. Do not put cords near heat or water. Do not touch anything electrical with wet hands.
- e. Inspect insulation to make sure wiring is fully insulated.
- f. Use personal protective equipment as instructed by your supervisor.
- g. If equipment smokes, sparks, or smells; turn it off, unplug it, and report it to your instructor.
- h. Never try to repair equipment or use temporary wiring.

#### **Machine Tools:**

- a. Only the instructor can and must turn on and off the master switches.
- b. Ask the instructor for permission to operate any power-driven machine.

- c. The instructor must check all special set-ups before the power is turned on.
- d. Only the operator and the instructor are permitted within the defined working area around any machine.
- e. Only the operator may start and stop a machine. After the machine is turned off, the operator should stand by until it has come to a complete stop.
- f. Suitable eye protection is always to be worn while in the shop.
- g. Long, loose hair can easily be caught in revolving machinery and ripped out causing serious scalp laceration. Hair must be cut short or tied back so as not to create a distraction or danger to the operator.
- h. Safe clothing must be worn in the shop. Fasten or remove loose clothing before operating any machine. Long sleeves are to be rolled above the elbows.
- i. Gloves are forbidden when working with power driven machinery.
- j. Jewelry and other accessories can be hazardous, and will be removed, if deemed necessary by the instructor.
- k. Machine guards must always be kept in their proper position.
- l. Overloading or forcing any power-driven machine is dangerous. Use only materials or stock furnished or approved by the instructor.
- m. Rags are to be kept away from machines that are in operation.
- n. If a machine makes an unusual sound, is found to be out of adjustment, or in need of repair, it is to be reported to the instructor immediately. Only machines in good working order are to be operated.
- o. Distractions are to be avoided when using machines. The operator should not allow distractions or cause a distraction when using machines.
- p. Machines must come to a dead stop and the master switch be turned off before adjusting or repairing the machine.
- q. No student will be compelled to use any power-driven machinery. A student may be excused from using any machine by consulting the instructor.
- r. Loose pieces of material, tools, etc. are to be removed from a machine before starting the machine.

s. No machine shall be used until the operator has passed the safety exam for the tool and has received instruction in its use.

**Portable Power Hand Tools:**

- a. All portable power hand tools must be disconnected when not in use.
- b. When disconnecting a power hand tool from a receptacle, remove the plug by pulling on the plug itself, rather than the cord.
- c. Before touching electrical switches, plugs or receptacles, hands must be dry. Wet hands can receive a severe shock and serious burns may result.
- d. Extension cords must lay flat on the floor when in use.
- e. When using compressed air, the stream must not be directed at any person.

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Construction and Woodshop are a privilege, abuse that privilege and you will lose it.

I understand and agree to the above rules:

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
PRINT Student Name

### General Safety Test

1. Work benches should be kept \_\_\_\_\_ and organized.
2. When you are finished with a tool, return it to its assigned \_\_\_\_\_ area.
3. Ask for \_\_\_\_\_ when you need to handle large or heavy material.
4. Lift with your \_\_\_\_\_ not with your back.
5. Never handle \_\_\_\_\_ equipment if your hands are wet or if you are standing on a wet floor.
6. Equipment with a \_\_\_\_\_ power cord should be reported to the instructor. Do not use it.
7. Don't yank on the power cord to disconnect the tool. Pull the \_\_\_\_\_.
8. Never adjust equipment while it is \_\_\_\_\_.
9. Using the tools and equipment always requires your complete \_\_\_\_\_.
10. Always work at a \_\_\_\_\_ speed.
11. When you turn off a machine, stay with it until it has come to a \_\_\_\_\_ stop.
12. Don't \_\_\_\_\_ someone while they are using the equipment.
13. Always wear eye \_\_\_\_\_.
14. Use the equipment only with the instructor's \_\_\_\_\_.
15. All \_\_\_\_\_ must be reported immediately.
16. Do not use tools that are \_\_\_\_\_ in any way.

accidents  
attention  
brush  
clean up  
clear  
complete  
correctly  
damaged  
defective  
distract  
dust mask  
electrical  
equipment  
fire extinguishers  
help  
instructed  
jewelry  
legs  
litter  
metal  
permission  
plug  
protection  
right size  
rolled up  
rough  
running  
safe  
storage  
tied back

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17. Never use tools or equipment unless you have been shown how to use them \_\_\_\_\_.
18. Keep clothes tucked in and shirt sleeves \_\_\_\_\_ neatly.
19. Watches or \_\_\_\_\_ should not be worn in the shop.
20. Long hair should be \_\_\_\_\_ or covered with a cap.
21. You should know where the \_\_\_\_\_ are located and read the instructions posted on them.
22. Aisles and floors must be kept free of \_\_\_\_\_.
23. Use a \_\_\_\_\_ or a rag to clear away sawdust and scraps. Don't use your hands.
24. Use the proper tool and the \_\_\_\_\_ for the job.
25. Use the \_\_\_\_\_ only when the instructor is in the shop.
26. Never use equipment until you have been properly \_\_\_\_\_ in its use.
27. A \_\_\_\_\_ should be worn when working where there is a lot of wood dust.
28. Damp, oily rags should be kept in a \_\_\_\_\_ container with a lid.
29. Always \_\_\_\_\_ spilled materials right away.
30. Never wear gloves except when handling \_\_\_\_\_ lumber.

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**BITA General Safety Test -Answer Key**

1. Work benches should be kept \_\_\_\_\_ **clear** \_\_\_\_\_ and organized.
2. When you are finished with a tool, return it to its assigned \_\_\_\_\_ **storage** \_\_\_\_\_ area.
3. Ask for \_\_\_\_\_ **help** \_\_\_\_\_ when you need to handle large or heavy material.
4. Lift with your \_\_\_\_\_ **legs** \_\_\_\_\_ not with your back.
5. Never handle \_\_\_\_\_ **electrical** \_\_\_\_\_ equipment if your hands are wet or if you are standing on a wet floor.
6. Equipment with a \_\_\_\_\_ **defective** \_\_\_\_\_ power cord should be reported to the instructor. Do not use it.
7. Don't yank on the power cord to disconnect the tool. Pull the \_\_\_\_\_ **plug** \_\_\_\_\_.
8. Never adjust equipment while it is \_\_\_\_\_ **running** \_\_\_\_\_.
9. Using the tools and equipment requires your complete \_\_\_\_\_ **attention** \_\_\_\_\_ at all times.
10. Always work at a \_\_\_\_\_ **safe** \_\_\_\_\_ speed.
11. When you turn off a machine, stay with it until it has come to a \_\_\_\_\_ **complete** \_\_\_\_\_ stop.
12. Don't \_\_\_\_\_ **distract** \_\_\_\_\_ someone while they are using the equipment.
13. Always wear eye \_\_\_\_\_ **protection** \_\_\_\_\_.
14. Use the equipment only with the instructor's \_\_\_\_\_ **permission** \_\_\_\_\_.
15. All \_\_\_\_\_ **accidents** \_\_\_\_\_ must be reported immediately.
16. Do not use tools that are \_\_\_\_\_ **damaged** \_\_\_\_\_ in any way.
17. Never use tools or equipment unless you have been shown how to use them \_\_\_\_\_ **correctly** \_\_\_\_\_.
18. Keep clothes tucked in and shirt sleeves \_\_\_\_\_ **rolled up** \_\_\_\_\_ neatly.
19. Watches or \_\_\_\_\_ **jewelry** \_\_\_\_\_ should not be worn in the shop.
20. Long hair should be \_\_\_\_\_ **tied back** \_\_\_\_\_ or covered with a cap.

21. You should know where the \_\_\_ **fire extinguishers** \_\_\_ are located and read the instructions posted on them.
22. Aisles and floors must be kept free of \_\_\_ **litter** \_\_\_.
23. Use a \_\_\_ **brush** \_\_\_ or a rag to clear away sawdust and scraps. Don't use your hands.
24. Use the proper tool and the \_\_\_ **right size** \_\_\_ for the job.
25. Use the \_\_\_ **equipment** \_\_\_ only when the instructor is in the shop.
26. Never use equipment until you have been properly \_\_\_ **instructed** \_\_\_ in its use.
27. A \_\_\_ **dust mask** \_\_\_ should be worn when working where there is a lot of wood dust.
28. Damp, oily rags should be kept in a \_\_\_ **metal** \_\_\_ container with a lid.
29. Always \_\_\_ **clean up** \_\_\_ spilled materials right away.
30. Never wear gloves except when handling \_\_\_ **rough** \_\_\_ lumber.