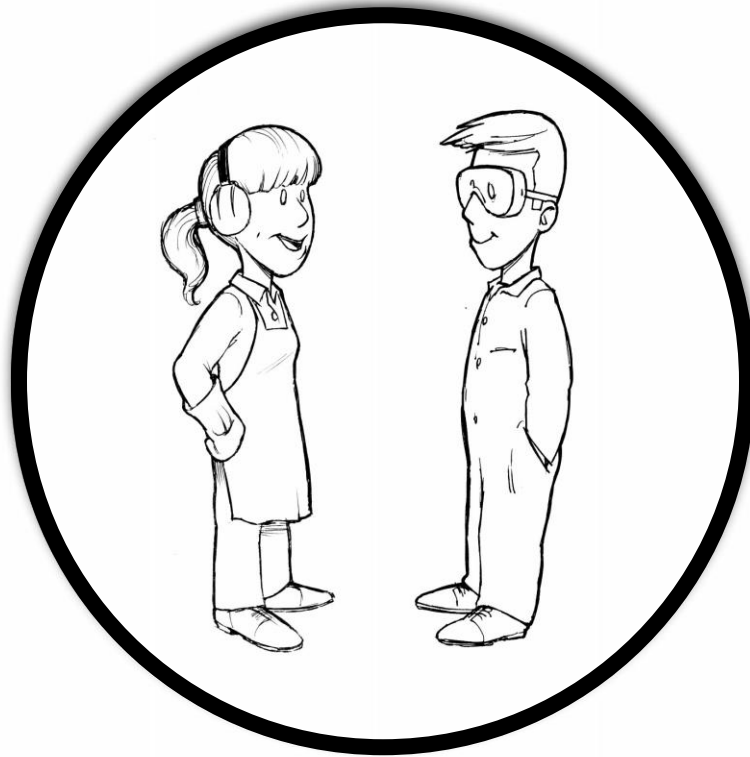


A Safety Handbook for Elementary A.D.S.T. and Makerspace Teachers

HEADS UP! *for Safety*



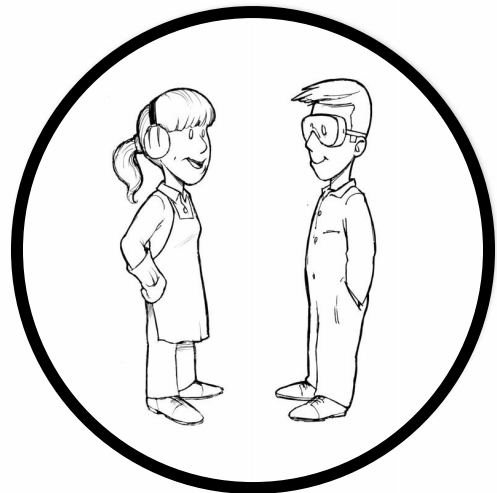
ELEMENTARY MAKER SPACE HEADS UP FOR SAFETY

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For more Safety information and Project ideas & plans, please go to The B.C. Technology Teachers Association website

www.bctea.org



Elementary

Makerspace Responsibilities

Safety in the class is everyone's business. Following is a list of responsibilities as adapted from the Workers' Compensation Board in their *WorksafeBC Online* document entitled, "Safety on the job is everyone's business."

Employer (*School District/Administrator*)

- Provide a safe environment
- Take action immediately when the worker or supervisor tells you about a potentially hazardous situation
- Initiate an immediate investigation into accidents
- Provide adequate First Aid facilities and services
- Provide personal protective equipment where required
- Provide instruction for Maker Facilitator/teacher

Supervisor (*Elementary/Maker Teacher*)

- Instruct students in safe work procedures
- Keep records of safety tests
- Correct unsafe acts and conditions

Employee (*Student*)

- Know and follow safe procedures affecting your work
- If you do not know, ask for training before you begin work
- Work safely and encourage your classmates to do the same
- Report any unsafe conditions to your teacher

Note: Students are not employees and, therefore, if injured, are not entitled to Workers' Compensation Benefits.

Due Diligence

Due diligence requires taking all reasonable steps to protect workers from harm. 'All reasonable steps' is based on the level of judgment and care that a person would reasonably be expected to do under the circumstances. An organization that actively manages health and safety and takes all reasonable steps to protect workers from harm is being duly diligent.

Due diligence requires that you:

- Identify all workplace hazards
- Implement all necessary preventive measures
- Communicate appropriately to all necessary personnel

Steps to Being Duly Diligent

1

Be Aware

Ignorance is no defence.

2

Be Objective

Identify issues for your workplace using appropriately knowledgeable people.

3

Be Proactive

Develop a safety program that includes procedures, and practices to minimize risk from hazards. Communicate these practices and ensure all workers are trained.

An active safety management approach — one that demonstrates due diligence — ensures that workers are provided with valuable safety information, instruction and training.

Elementary/Maker Teacher Tool Safety Checklist

It is expected a teacher using any of the tools below has received adequate professional development approved by the individual district, and fully understands the use and safety of the tools prior to using the tools with their class. Local School District Administration recognize that this document and subsequent orientation/demonstrations are a **minimum standard** for working in elementary/maker classroom environments.

Process:

- Technology education teacher demonstrates proper techniques in tool use and tests for understanding (written and demonstrated). Records kept by school district.
(This procedure may vary by individual district)
- Appropriate safety precautions and personal protective equipment is used.
- Teacher goes over tool procedures and demonstrates proper techniques to their students.
- Teacher gives safety tests for each tool requiring testing.
- Students must obtain 100% on every test. Students can make corrections to obtain this mark. **Tests must be given each year and retained if an accident occurs.**

Tools that require attention to safety concerns:

Tool	Concern
Drill	See safety procedure sheet and test
Jigsaw	See safety procedure sheet and test
Handsaw	Teeth on saw are sharp. Once saw is started into cut, fingers should be more than 2" away. Use slow, steady, full strokes of the saw to make cut. Clamp material down if it cannot be easily held down.
Hammer	Be careful of nails flying once struck by hammer, this usually happens when it is first started into wood. Use a moderate, controlled swing.
Chisel	Cutting edge is very sharp. Always have both hands on the chisel handle. Material must be clamped down. Always chisel away from yourself.
Utility Knife	Recommend only the teacher use. Only extend small portion of the blade. Cut away from yourself. Be very observant of what is underneath cut. Be aware of cutting path.
Hot Glue Gun	Easy to burn oneself. Only allow glue guns to be used in a specific location designated by teacher. Do not touch heating end of glue gun. Do not allow melted hot glue to come into contact with skin. If hot glue does stick to skin, run under cold water for 10 minutes or until it is easily removed. Do not pull glue off skin right away.
Block Plane	The blade is sharp. Never test for sharpness with finger. Use a piece of wood. Be aware of the cutting blade path. Clamp material down.
Spoke Shave	The blade is sharp. Never test for sharpness with finger. Use a piece of wood. Be aware of the cutting blade path. Clamp material down.

Elementary/Maker Teacher Tool Safety Test

*This test, as well as all of the tests in this booklet, must be completed by the Elementary/Maker teacher and should be retained by the school district administration.

Teacher name: _____

Date: _____

1. When using the handsaw, fingers should be at least how far away from the teeth?

2. If it is difficult to control the material you are sawing, what should you do?

3. Describe how you would use a hammer to nail two pieces of wood together.

4. Describe how to safely use a wood chisel. _____

5. What should you do if you get hot glue on your finger?

6. How do you test to see if a plane or spoke shave is sharp? _____

Tool Images for Identification:

Tool Image	Identification
	<p>Back Saw</p>
	<p>Coping Saw</p>
	<p>Hot Glue Gun</p>
	<p>Utility Knife</p>
	<p>Hammer</p>
	<p>Block Plane</p>
	<p>Spoke Shave</p>
	<p>Tape Measure</p>

General Workshop Safety

TOPIC	<i>INFORMATION to go over with students</i>
Accidents	Immediately report all accidents or injuries to your teacher.
Behavior	Be calm! Do not run or push others. Do not throw things!
Eye Protection	Wear safety glasses at all times when working on projects with tools.
Housekeeping	Keep floor and work areas clear and clean. Keep all materials stored where they belong. Allow time for good clean up at the end of work period.
Mental Condition	Most accidents occur when people are tired, anxious or uncomfortable using tools. If you are TIRED stop working, If you are ANXIOUS connect with your teacher. If you are UNCOMFORTABLE connect with your teacher and have them review the tool and technique with you.

GENERAL WORKSHOP SAFETY TEST

NAME: _____ DATE: _____

1. The number one safety rule when working with tools is?
 - a. wear steel toed boots
 - b. wear safety glasses
 - c. unplug a power tool
2. Accidents should be reported to the teacher.
 - a. True
 - b. False
3. Three unacceptable behaviors when working with tools on a project.
 - a. talking, eating, drilling
 - b. pushing, yelling or throwing things
 - c. sawing, securing your work, using loud equipment
4. Most accidents occur when you are _____.
 - a. excited, happy and laughing
 - b. quiet, comfortable and prepared
 - c. tired, anxious or uncomfortable
5. What should you do if you are **UNCOMFORTABLE** using a tool?

Hand tool Safety

TOPIC	INFORMATION to go over with students
Handsaw	Teeth on saw are sharp. Once saw is started into cut, fingers should be more than 2" away. Use slow, steady, full strokes of the saw to make cut. Clamp material down if it cannot be easily held down.
Hammer	Be careful of nails flying once struck by hammer, this usually happens when it is first started into wood. Use a moderate, controlled swing.
Hot Glue Gun	Easy to burn oneself. Only allow glue guns to be used in a specific location designated by teacher. Do not touch heating end of glue gun. Do not allow melted hot glue to come into contact with skin. If hot glue does stick to skin, run under cold water for 10 minutes or until it is easily removed. Do not pull glue off skin right away.
Screwdriver	Be careful to ensure that you are using the right screwdriver for the selected screw. Hold the handle with the bit pointing downward. Use a firm grip and moderate pressure as you turn the screwdriver.
Tape Measure	This is the most important tool in the Makerspace. Tape measures come with both Imperial and Metric measurements. The tape measure should be handled with care, and not dropped on the floor or other hard surfaces. Care and attention should be paid when retracting the tape measure, so fingers don't get pinched.
Wood Burner / Soldering Iron	When you plug in the Wood burner /Soldering iron make sure the cord does not touch the tip. The tip is HOT and should not be touched for any reason while plugged in. Always place the Wood burner/Soldering iron in the holder – NOT ON THE DESK/TABLE . Unplug the unit by grasping the plug, NOT the cord. Put your Wood burner/ Soldering iron away in the appropriate location once it has cooled completely, ensuring the tip does not touch the cord. Wood burners & Soldering pencils stay hot for a long time after they are unplugged.

**Materials should never be held in an Operators hand, while using tools.
Materials if at all possible should be secured to a bench or work table.**

HAND TOOL SAFETY TEST

NAME: _____

DATE: _____

1. When using the handsaw, fingers should be at least how far away from the teeth?

- a. 2 inches
- b. 4 inches
- c. 1 inch

2. Describe how you would use a hammer to nail two pieces of wood together.

3. What should you do if you get hot glue on your finger?

4. How should you hold a screwdriver?

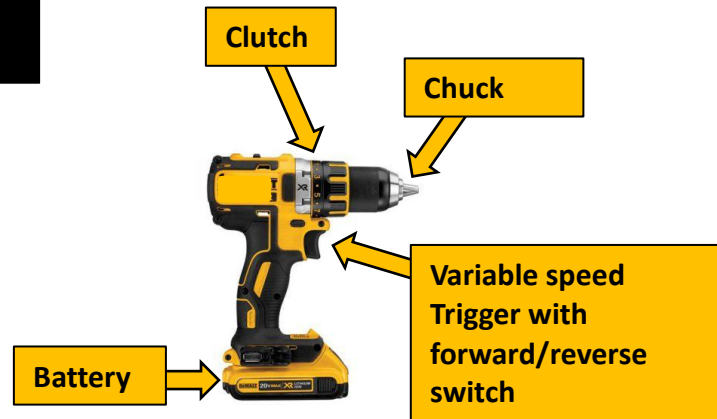
- a. By the handle, pointing towards the sky
- b. By the handle, pointing towards the floor
- c. By the bit end

5. The tip of the Wood burner / Soldering iron is **EXTREMELY HOT**. True / False

6. What should you be paying attention to when retracting a tape measure? Explain.

7. Describe how to put away a Wood burner / Soldering iron.

Cordless Drill



SAFETY PROCEDURES

- Always wear safety glasses when using power tools.
- Tie long hair back
- Always ask teacher permission before using the tool.
- Disconnect power or unplug the Drill when changing Bits.
- Make sure drill bit is placed correctly in drill chuck, centered, and that the drill bit is secured tightly in drill chuck.
- Check the rotation of the drill bit before starting to drill. Forward for drilling a hole, reverse for pulling the drill bit back out.
- Beware of hot drill bits after drilling holes.
- Make sure the material being drilled is held down firmly or clamp material down. When using large bits or drilling small pieces, clamp material down.
- Make sure the drill bit has a clear path under the material being drilled, or have a scrap block of wood for the drill bit to go into after drilling through your project.
- Try to have your material being drilled in a horizontal or vertical position so you can more easily drill the hole square with the material.

CORDLESS DRILL SAFETY TEST

NAME: _____

DATE: _____

1. What is the number one safety rule when using power tools?

2. Before changing drill bits you must first?

3. Long hair should be:

4. How should material be held down?

5. You must ask teacher permission before using the cordless drill.

a. True b. False