

Teaching General Power Tool Safety

Power tools serve us well. They enable us to perform difficult tasks with greater ease and accuracy than most of us could ever hope for without them. However, they demand respect. To avoid accidents, power tool operators must be knowledgeable and thoroughly prepared. Inexperienced, untrained, and unprepared operators can be injured within minutes of attempting to use a power tool. Your teaching will play a critical role in helping your students avoid serious injury now and throughout their lives.

Modern power tools are designed to operate safely when used prudently and according to all instructions in the tool's operator's manual. Virtually all power tool accidents are preventable. Yet, accidents happen to novices and experienced operators alike.

Experienced tool operators get into trouble when they are careless or give in to the temptation to hurry or violate safety rules. Accidents involving novices are most often caused by a lack of necessary safety knowledge and/or respect for what a tool can do. The inexperienced tool operator may fail to identify a potentially dangerous situation. He or she may not recognize, for example, the sound of a saw that is beginning to labor because of a binding or pinching condition on the blade. The knowledgeable operator knows that sound is warning of an impending kickback condition. Your students need to learn such things too.

Three of the major causes of power tool injuries are inattention through repetition, an unexpected event, and inexperience or over-confidence.

Inattention Through Repetition

Inattention through repetition is most likely to occur at a busy jobsite or in a production shop. Hurrying to beat deadlines increases the risk of accidents and injuries. No matter how competent and confident the operator, he or she must not allow himself or herself to become complacent. Teach your students to pause deliberately after every few repeat operations to refocus

on the task at hand and then proceed with renewed awareness.

Unexpected Events

Because most power tools operate at high speeds, when things happen, they tend to happen very quickly. A kickback situation can suddenly hurl a workpiece — or a portable tool itself — at the operator. Fingers might be drawn into the blade in some instances, or the tool may move toward fingers or other body parts that are in the wrong place at the wrong time. Working with fingers too near the blade can result in a wide variety of unpleasant surprises. Giving into distractions such as trying to catch a waste strip moving backward on a table saw after the cut can cause an operator to thoughtlessly move his or her hands into dangerous areas.

Unexpected events are more likely to end badly when operators are inexperienced, plan poorly or don't understand how a particular tool works. For example, attempting to cut, joint, or shape small workpieces without a guard and the use of work helpers (or jigs) can end in disaster. Blades and cutters can mangle fingers when an operator attempts to machine small pieces. Teaching your students how to build and use jigs and fixtures that keep the workpiece under control and hands well away from blades and cutters is essential.

Inexperience and Overconfidence

Some people with many years of experience grow accustomed to working with their hands dangerously close to blades and cutters - sometimes without protective guards in place. A sudden grab of the workpiece or a kickback condition can cause fingers or hands to be pulled into the cutter almost instantaneously. Experience, although a good teacher, can lull us into overconfidence. The foolish risks we then become willing to take can inflict very painful lessons on us and our families. Teach your students that risks like these are absolutely not worth it.

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Power tool safety begins with several basic, universal tenets. Students who learn to apply these can approach any power tool with confidence.

Many basic safety rules and terms are summarized on the following four pages. Photocopy these for your students to keep and learn, and/or enlarge them for use as posters in your classroom.

*To have your students read and understand the words in context, refer them to **Safety Is Specific**.*

Train your students to understand that there are many other safety considerations beyond those on the photocopied pages. Remind them to always use good common sense.

*Information on general power tool use and safety abounds in your PTI package materials. The DVD **Power Tool Accidents, They Can Be Prevented** provides an excellent overview, and therefore, an appropriate starting point.*

Refer To ...

Power Tool Accidents -They Can Be Prevented, 19 minute DVD.

Safety Is Specific

A Teacher's Reference Guide to Power Tool Safety

Lesson Suggestion ... Play Safety Cop

Objective: To teach students how to prepare themselves, their tools, and their job sites for the safe use of power tools.

Materials/Requirements: **Teacher's Video Guide, Power Tool Accidents - They Can Be Prevented** DVD, and a well appointed shop environment.

What To Do:

1. Review the Teacher's Guide which accompanies the DVD.
2. Introduce the DVD by instructing the class that it covers four areas for safe use of power tools.
 - Safe Work Area
 - Electrical Safety
 - Good Personal Work Habits
 - Proper Use and Care of Tools
3. Encourage the students to look for examples of each while reviewing the DVD.
4. Show the DVD.
5. Review the points made in the DVD.
6. Photocopy the safety rules in "Safety Is Specific" and the Teacher's Guide and distribute these to your students.
7. Answer students' questions and discuss general safety procedures with them.

Following this orientation, choose a student to serve as "Safety Cop" at your next working session. He/she will inspect each student job site and determine whether or not it is in acceptable condition according to the safety precautions and procedures read and discussed. Allow no one to begin working until the "Safety Cop" and you have inspected and approved the job site. Allow students to knowingly display errors to test the Safety Cop's expertise.

Assign a different student to play "Safety Cop" at each of your working meetings until every student has had a chance.