

Physics lab/Use of tool Safety Contract.

A requisite for students and parents to before starting on the Rock&Roll Guitar



Dear parents and students,

Guitars and other stringed instruments are prime examples of “physics in action”. Vibrations which start on the strings are transferred via “the bridge” to “membrane” (the front face of the guitar) which then transmit the vibrations into a volume of air (inside the body) which then resonate and are effectively amplified (based on the shape of the body) and are then transmitted back out (to the audience) via a sound hole. Building an instrument which maximizes this resonant process and creates the rich, rewarding tones of a well-built instrument are not trivial and require ingenuity, creativity, skill, patience and craftsmanship. In today’s modern public school system, many students have never had the opportunity to develop “woodshop” skills (let alone simply learning how to use common tools such as power drills, band-saws, etc.). With this in mind, it is not surprising that the “guitar building project” in physics has rapidly become one of the most popular projects we do (with many students signing up for my class because of their interest in this project specifically).

This being said, working with tools and shop safety is NOT something to be studied at the start of a training project and then forgotten. As of this date, we have had zero accidents in class, however teenagers plus “power tools” with sharp edges (like saws, drills and files) certainly create the opportunity for accidents, primarily for students (or anyone) who are not paying attention or who are being careless.

The following “words of wisdom” have been copied from generic “wood shop safety” contracts for use in this physics classroom (primarily for this and other “build” projects coming into the end of the year).

SAFETY FOR THE SHOP ● Keep the shop clean. Wood scraps should be placed in the scrap bin. Never allow them to remain on the bench or floor. ● Exercise extreme care when machining unfamiliar materials. ● The shop is a place to work, not play. It is NOT a place for "horseplay". A "joker" in a wood shop is a "walking hazard" to everyone. Daydreaming also increases your chances of injury. ● **Never operate power tools or equipment under the influence of drugs, alcohol, or medication.** ● Secure help when moving heavy machine accessories or large pieces of wood stock. ● Dress properly. Avoid wearing loose fitting sweaters or clothing. Rings and other jewelry should be removed. ● Wear appropriate safety gear. In noisy areas, use hearing protection. ● **Always protect your eyes.** Eyesight that has been damaged or destroyed cannot be replaced. Safety glasses will be provided for you. Take no chances! Wear eye protection whenever students are working in the shop ● Know your job! It is foolish, and often disastrous, to operate machines without first receiving proper instructions. **Get additional help if you are NOT sure what must be done or how a task should be performed.**

GENERAL MACHINE AND POWER TOOL SAFETY

- Avoid operating a machine until all guards are in place!
- Stop the machine before making adjustments or measurements! Resist the urge to touch a surface that has been machined while the machine is running. Severe injury can result.
- Keep the floor around the machine clear of oil, wood chips and scraps.
- It is NOT considered good practice to talk to anyone while you are operating a machine. You might become distracted and injure yourself, or someone else.
- Do not talk to distract somebody else while they are operating a machine. Injury may result.
- NEVER attempt to remove chips or scrap with your hands or while the machine is operating or powered on. The machine must be at a dead stop and you must use a brush or push stick.
- Secure prompt medical attention for any cut, bruise, scratch, burn or other injury. No matter how minor the injury may appear, report it to your instructor.

I, _____ (student's name) have read, been instructed and agree to follow all of the safety rules set forth in this contract.

- I realize that I must obey these rules to insure my own safety, and that of my fellow students and instructors.
- I will cooperate to the fullest extent with my instructor and fellow students to maintain a safe shop environment.
- I will also closely follow the oral and written instructions provided by the instructor.
- I am aware that any violation of this safety contract that results in unsafe conduct in the shop or misbehavior on my part, may result in being removed from the shop and a failing grade for this project.

_____ Student Signature/date.

Dear Parent or Guardian; Your signature on this contract indicates that you have read this Student Safety Contract, are aware of the measures taken to insure the safety of your son/daughter in the physics lab/shop, and will instruct your son/daughter to uphold his/her agreement to follow these rules and procedures in the laboratory.

_____ Parent Signature/date.

