

Using Recycled Wood – Old is Not New -- (Miscellaneous)

Info in red font is for the benefit of the teacher (notes and ideas for differentiated learning etc). Delete text in red font from the copies that are distributed to students.

In a document / template that is intended to be "filled in" by students for assessment / evaluation purposes, the Version History table can be retained for students to use. Making an improved version is great learning.

Version History:

V #	Date	Author	Short Listing / Description of Changes
1	July 16/12	D.B. McCowan	Initial Version -- uploaded to OCTE Safety Portal
2			

1 Expectations

Design / Build a Marketable Picture Frame Using Scrap Wood Flooring	
1 Curriculum Expectation <i>In this unit the student will demonstrate / practise the following:</i>	2 Activity -- What You Will Do in this Lesson
D1.2 -- demonstrate an understanding of and follow personal and environmental health and safety procedures with respect to processes, materials, tools, equipment, and facilities throughout the design process and related activities (e.g., use protective equipment; set tool and equipment guards properly; ensure adequate ventilation and ergonomic seating and other workplace arrangements; follow safe operating procedures; keep work areas clean and organized; store materials and dispose of wastes properly).	Critical Thinking – “Risk Assessment”

2 This Lesson is Extremely Important Because... Old is Not New

Most products today are made to industry standards. For example, a lumber-yard-bought 2 x 4 wood stud was milled from a log, dried, heat-treated, handled and stored in such a way that the consumer takes it for granted that the 2 x 4 is all set to use – graded as to an intended use, no hunks of metal buried in it, no carcinogenic toxins and no insects eating away at its structural strength. In your construction project, if you intend to use a 2 x 4 that you found on the side of the road as a substitute for one from the chain store lumber yard – you’ve got some investigating to do. And of course, wear your personal protective equipment and VENTILATE!

Think Critically About This:

Should you question the integrity of the 2 x 4 from the chain store lumber yard? What can or should you do as a smart, critical consumer?

3 Critical Thinking – Safety at the Forefront of the Mind

As mentioned in several previous lessons, the teacher can, in a sense, play the devil’s advocate. He or she may deliberately start to show students something that you should question – and then look around waiting for a comment. Don’t just stand there – say something!

Shouldn’t you hold it like so? Shouldn’t it be the other way around? Why do it that way? Why not do it this way? Wait sir, what about...

In this exercise, in column 2 you will be given a proposed situation (from the Devil’s Advocate). In column 3 enter your concerns, criticisms and other comments.

Note to Teacher: Delete text in red font from the copies that are distributed to students.

1 #	2 Proposed Situation from the Devil’s Advocate	3 Your Issues / Concerns / Comments
1	<i>“I will run this old board through the thickness planer to take off the old paint. It’s just paint.”</i>	-a high voltage motor drives the planer knives so fast that you really don’t know what is happening to the pieces of old paint as the wood goes through the planer -was it lead-based paint? -should lead-based paint be mixed in with sawdust in the collection tower? -check for nails, staples and screws first -scrape the dirt and cement residue off first. -refer to document 16.1_Old-Finishes.doc
2	<i>“The little holes in the wood mean that the bugs have gone – Elvis has left the building. See, there is no pile of frass powder around the hole. Let’s toe-nail it in.”</i>	-the adult insect could have mated and come back again to lay eggs in her own exit hole or in some other crack in the wood home that some natural instinct tells her to return to -there could still be larvae elsewhere in the wood – same generation or a newer generation -if the wood is heat-treated again to 150°F for 4 hours, all stages of the insect life cycle should be killed; then surface treat with a varnish, stain or paint to discourage all bugs from returning
3	<i>“I’ll hammer a spike into this hole in the wood. If I punch a broken nail out the other side, we’re good to go.”</i>	-if the spike is sharp, it could easily slide off the hidden nail and not punch it out -either grind the spike tip flat or use a non-tapered shank punch (such as a long-shanked nail set) to punch out broken nails -if you can see light through a hole, it is clear (except if you made the mistake in the first point above)
4	<i>“We don’t have a metal detector. Even if we had one, they are not reliable for finding nails buried in a piece of wood.”</i>	-KISS – keep it simple smart guy -an amplifier takes a weak signal and makes it bigger – more detectible to humans -a very simple lever amplifies a distance moved -fasten a good-sized strong permanent magnet to one end of a meter stick -balance the meter stick lever by fastening it to a piece of string at its fulcrum -the distance from fulcrum to magnet should be about a fifth of the distance from the fulcrum to the other end of the meter stick (the measuring end) -holding the balanced lever by the string, slowly move the magnet along the top of the board which has a broken nail buried in it -a weak magnetic attraction signal received by the sensor end (the magnet) will be amplified by this first class lever -- the measuring end will rise about 5 times farther than the magnet moves downward

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1 #	2 Proposed Situation from the Devil's Advocate	3 Your Issues / Concerns / Comments
5	<i>"Pulling nails is too simple to require a safety lesson. Just yank 'em out."</i>	<p>-someone skilled at pulling nails is a far cry from a beginner</p> <p>-pulling nails is extremely dangerous unless done carefully</p> <p>-some nails, especially old nails in old hardwood, can be very difficult to pull safely</p> <p>-if skilled at pulling nails and if your shop setup allows it, do this demonstration</p> <p>-WARNING:</p> <p>THIS INSTRUCTIVE AND ALARMING DEMONSTRATION MUST NOT BE ATTEMPTED BY ANYONE WHO IS NOT HIGHLY SKILLED AT NAIL-PULLING</p> <p>-put students behind a glassed partition wall; teacher wears full head protection such as a welding mask; make sure there are no light fixtures directly above or behind the direction of the nail pull; plan for the nail, when pulled, to be shot toward a part of the wall where nothing will be damaged</p> <p>-obviously, after this demonstration of how NOT to pull a nail, spend ten minutes demonstrating several proper and safe techniques for pulling nails</p>