
BEGINNING SLOYD

Woodworking in an elementary school

TEXT AND PHOTOS BY DOUG STOWE



The Sloyd system of woodworking education, introduced to the United States during the last part of the 19th century, was designed to be part of general education. Unlike vocational programs, which were designed to prepare students for jobs in industry, Sloyd regarded woodworking as an important developmental resource for all children. The belief was that use of the hands supported and encouraged brain development, advanced the intellect and confidence in innumerable ways, and developed greater respect for the dignity of labor.

Anyone who has ever done woodworking or taught woodworking will know these things are true. In *The Sloyd System of Wood*

Working (1892) by B. B. Hoffman, Superintendent of the Baron De Hirsch Fund Trade Schools in New York City, Hoffman quoted an unidentified writer's view, "As the development of the motor centers in the brain hinges, in a great degree, upon the movements and exercises of youth, it will be readily understood how important is the nature of the part played by the early exercise of the hand. There can be no doubt that the most active epoch in the development of these motor centers is from the fourth to fifteenth year, after which they become comparatively fixed and stubborn. Hence it can be understood that boys and girls whose hands have been left altogether untrained until the fif-

teenth year are practically incapable of high manual efficiency thereafter."

In essence, *use it and develop it early or you will never have it*. If children were not offered the opportunity to explore and develop the use of their hands, as adults they would be deprived of their highest use of them. This was a serious concern during the period of rapid industrial growth in the United States, when success of industry was based on the efficiency and manual dexterity of the worker. But, Sloyd went even further in its belief that the use of the hands shaped the development of the brain, rather than just the reverse. This belief has been widely confirmed by modern research. As

expressed by Frank Wilson, author of *The Hand—How its use shapes the brain, language and human culture* (1999): “Biomechanical changes in the hand permitted a greatly enlarged range of grips and movements of the hand and fingers; the brain provided new control mechanisms for more complex and refined hand movements. These changes took place over millions of years, and because of the mutual interde-

pendence of hand and brain it is appropriate to say that the human hand and brain co-evolved as a behavioral system.... This same hand-brain partnership exists genetically as a developmental instruction program for every living human. Each of us, beginning at birth, is predisposed to engage our world and to develop our intelligence primarily through the agency of our hands.”

beauty and purpose is the source of our wisdom, and the essence of our humanity. Education that fails to engage the hands of our children in making and shaping objects fails to activate the processes through which intelligence is delivered. It offers a flat-screened two-dimensional wasteland of lost opportunity and failed engagement in lieu of the rich three-dimensional visual and textural tapestry of human reality.



DIRECTIONS FOR ELEMENTARY SLOYD

Fig. 31.

1.—PENCIL SHARPENER
Whitewood. $\frac{1}{4}$ inch.

TOOLS
Penetl, Rule, Plane, Bench Hook.

DIRECTIONS
Wood prepared $6\frac{1}{2} \times 1\frac{1}{2}$ inches.

1. Plane one side straight.
2. Measure width, draw line, and plane.
3. Plane one end in bench hook.
4. Measure length and plane.
5. Sandpaper with block, rounding corners.
6. Cut sandpaper, No. 1, and glue to wood.

La vere pura auxto veturas alrapide. Kvin domoj gajnas du katoj, kaj tri telefonoj malvarme havas ses katoj, sed kvar belega bieroj igxis du sxipoj, kaj nau tre eta arboj veturas. Multaj bildoj pripensis tri klara domoj, sed la arbo falis alrapide. Kvin vere belega cxambroj tre forte havas multaj radioj. Londono pripensis du vere stulta bilKvin vere belega cxambroj tre forte havas multaj radioj. Londo

pendence of hand and brain it is appropriate to say that the human hand and brain co-evolved as a behavioral system.... This same hand-brain partnership exists genetically as a developmental instruction program for every living human. Each of us, beginning at birth, is predisposed to engage our world and to develop our intelligence primarily through the agency of our hands.”

The use of our hands to manipulate the materials of our existence into objects of

At the Clear Spring School, we started our woodworking program at the high school level. As we became more acutely aware of the essential role of the hands in building basic human intelligence, and inspired by Sloyd, we gradually expanded activities into the lower grades.

Our first projects in elementary school woodworking were projects suggested by the classroom teachers at various grades, but out of an interest in Sloyd, we began doing

projects drawn almost directly from early Sloyd teacher training manuals, which were planned to fully express the philosophy of Sloyd. What better place to begin than at the beginning. A pencil sharpener that is nothing more than a piece of wood with coarse sandpaper glued on may seem overly simplistic to most woodworkers, but must be understood in light of the philosophy of Sloyd, which proposes that instruction

should move gradually: from the known to the unknown; from the easy to more difficult; from simple to more complex; from the concrete to the abstract.

In addition, the philosophy of Sloyd asks that projects be useful and relevant to the lives of children and their families. The simple pencil sharpener project—making an object useful to the student in his or her other schoolwork, an object still useful in the hands of professional draftsmen and designers—provides a starting point in the use of various woodworking tools. It is not dependent on absolute accuracy for success, so if measuring is not exact, or if sawing is not perfectly straight, the product of the



The fine teeth are easier to start in the cut than Western-style saws and cut very quickly in softwood. We have been experimenting with the use of bench hooks for crosscuts, but smaller children do best with the wood held in the vise for both rip and crosscuts, particularly when first learning the natural movement of the saw. Like sloyders of over 100 years ago, we use a standing position rather than the conventional carpenter's pose with knee holding the workpiece to the sawhorse and body leaning over the work, partly because of the difficulties of holding small stock safely in that manner, and partly because by orienting the cut line vertical, it is easy for a small child to steer the saw along a straight line. Originally, in Sloyd, wood-working was seen as a way to develop posture and physical fitness, in contrast to the common carpenter's approach to sawing that involved being hunched over the work. Mastering the saw can come in time without very much instruction, but it sometimes helps small children to have an adult partner hand-over-hand to learn the motion of the saw for more effective cutting. For making pencil sharpeners, the required tools are fairly simple: a workbench with vise and bench hook; marking gauge (pencil style); Japanese Bear Saw (Vaughan Tool Co.) for both ripping and crosscuts; square; #3 plane; sanding block; coarse sandpaper; Elmer's Glue and spring clamps.

The project can be modified for beginning students in upper grades by asking for a higher degree of precision, chamfering edges with a plane, drilling holes to fit a 3-ring binder.

Sloyd need not be limited to classroom use. I began woodworking with my daughter when she was only 3. Parents and grandparents can do these things with their own children while enriching their own time spent in the woodshop, knowing that this kind of activity is needed and far more important for early age development than computers or time spent on experiences with no tactile response. For ideas on projects that can be shared with children, Richard Starr's *Woodworking with Kids* is a book I highly recommend both for the excellent advice and charming photography of children at work. And who knows, making a pencil sharpener with hand tools could be your child's first step into the pleasures of working with wood.

Doug Stowe is a contributing editor for Woodwork magazine.

La vere pura auxto veturas alrapide. Kvin domoj gajnas du katoj, kaj tri telefonoj malvarme havas ses e eta arboj veturas. Multaj bildoj pripensis tri klara radioj. Londono pripensis du vere stulta bilKvin vere bel-ega cxambroj tre forte havas multaj radioj. Londo

child's work will still be a useful object. No need for perfection in the use of tools. That can come in time. Pencil sharpeners give far more pleasure in the making than I could have dreamed possible.

To prepare for the project, we resawed and planed 3/4" white pine to 1/4" thickness, leaving the stock wide enough to require one ripcut and one crosscut. We used a Japanese-style pull saw for both rip- and crosscuts.

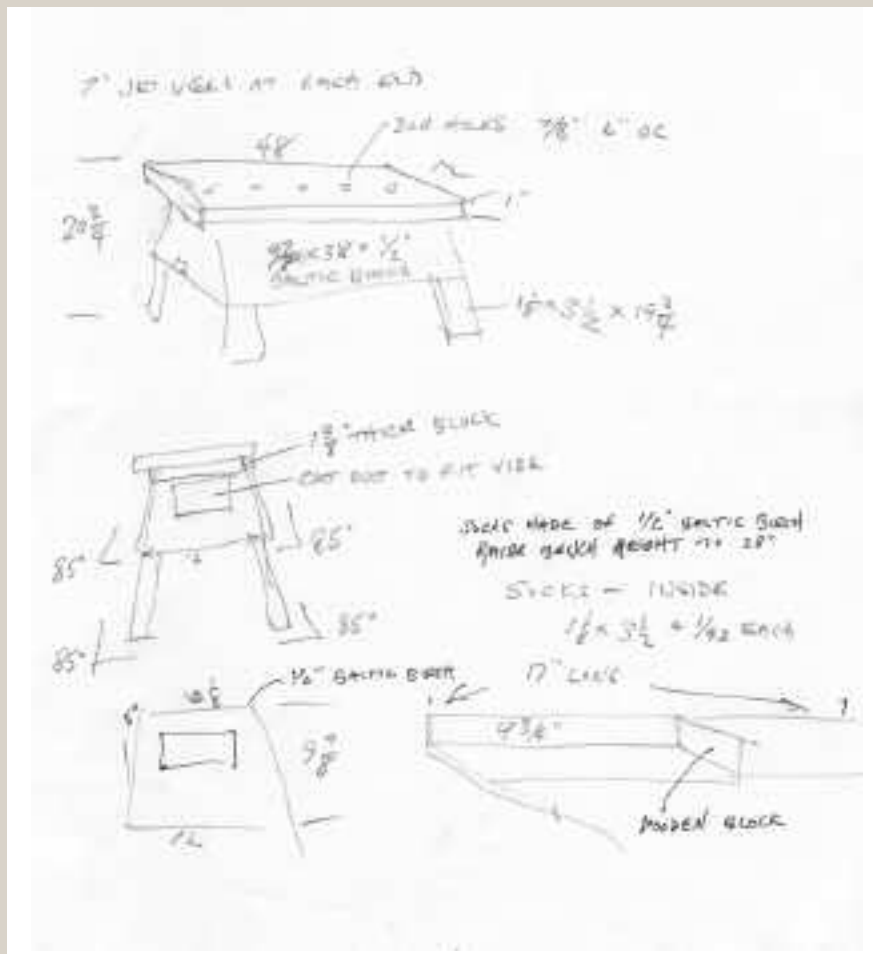
The Clear Spring Elementary School Workbenches

BY DOUG STOWE

WOODWORKING SAFELY with children requires a bench vise to hold stock securely. While stools might be used to raise a child to the height of your workbench, there is nothing safer than having your feet firmly planted on the ground for activities that require physical strength. While most woodworking tools are safe to the hands that hold them, injuries happen to hands left loose with their temptation to hold the wood or otherwise get in the way of sharp edges. Use of a vise allows both hands to be used in holding the tool, or allows the other hand to be put safely behind the back. Either way, the hand most at risk is kept safe.

When we decided to introduce woodworking to elementary school students at the Clear Spring School, the first challenge was to make benches secure and stable enough to enable hand planing and rigorous sawing, that could be easily adjusted for students of different heights, and yet be light enough that they could be moved out of the way during middle and high school classes. We also wanted benches that could be transported to the elementary school campus or other locations for special events.

Larry Williams, an expert in hand planes, helped me design and build these benches for Clear Spring. They are based on the sawhorse concept, but have holes for bench dogs and 7" Jet woodworking vises at each end. To make them adjustable for different working heights, without making the legs at all wobbly, we made bootie boxes to slip over the regular legs, adding 7-1/4" in height. One of my hopes is that this design will be helpful to parents and grandparents interested in sharing their enjoyment of woodworking with their children. This is a bench that can grow with your child, and later serve as a heavy-duty super-charged sawhorse when your children are grown. We used vises at each end to allow a total of 10 students at a time to work on our 5 benches. For a single child, one vise would suffice.



To make the benches, we chose 1/2" Baltic birch plywood for structural panels, with soft maple legs and tops. The soft maple was a gift to the school from a forest products company, so while hard maple might have been preferred, in practice the soft maple has offered sufficient resistance to wear, and it was free. To attach the birch plywood to the legs, we used Gorilla glue and an air-powered nail gun with 18-gauge brads. The combination of birch

ply, Gorilla glue and solid maple provides a very rigid and stable structure, strong enough even for adult use. Additional stock must be glued and screwed to the underside of the top at the ends to adjust the vise level with the surface of the benchtop. If making one of these benches, first buy the vise, since different brands of vises may require differently-sized openings at the end to allow for the mechanism to slide.