



## TOOLS:

### Build a Loom



In 2004, Cornell University students worked with Marc Keane, a garden designer, to build a structure modeled on 16th-century Japanese teahouses. They used mats made from slender lengths of willow and dogwood. They wove the mats on a cleverly designed loom that at first glance resembles a sawhorse. This loom is fun to build, easy to use, and illustrates the function of all looms. These instructions make a table top loom, but you can increase the measurements to build larger looms.

**Time Required:** 2 hours

#### Materials:

- 2 pieces 1x3 wood, 16 inches long for top edges
- 4 pieces 1x3 wood, 13.5 inches long for legs
- 4 pieces  $\frac{1}{8}$ - or  $\frac{1}{4}$ -inch plywood or masonite, 6 inches x 16 inches, for panels
- 4 pieces  $\frac{1}{2}$ -inch plywood, 2 inches x 4 inches
- 2 strap hinges, 2-4 inches long
- 10  $\frac{1}{4}$ -20 machine screws/bolts, 3-inches long for bobbins
- 30  $\frac{1}{4}$ -20 nuts
- 20  $\frac{1}{4}$ -inch fender washers
- 10 2-inch square pieces of cardboard for bobbins
- 4 screw eyes
- 2 lengths of strong twine or rope, 16 inches long
- Wood glue
- Clamps
- Power or hand drill
- Screwdriver
- Ruler
- Pencil
- Hand saw
- 2 wrenches to fit nuts
- Hole punch
- Scissors or knives
- Safety glasses

#### Instructions: Loom

1. Place one 16-inch panel A and one 16-inch 1x3 top and two 13½ inches 1x3 legs on a table.
2. Apply glue to those pieces where they will touch and lay the 1x3s.



3. Apply more glue, where the second panel B will touch and sandwich the 1x3s between panels A and B.

4. Clamp together. Dry according to glue instructions. (Or, use small nails or screws to hold together.)



5. With pencil and ruler, mark notches on top of panel A, one notch in middle, then two notches on each side, each centered 2 inches apart.



6. Saw out notches. (Toughest part of the whole project.)

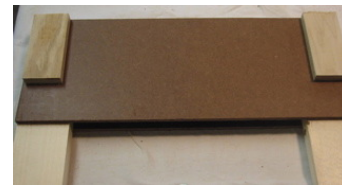


### Notes:

- 1x3 wood is always labeled as 1x3 at lumber suppliers, but actually measures about  $\frac{3}{4}$  inch x 2  $\frac{1}{2}$  inches,
- Plywood and masonite normally come in 4 ft. x 8 ft. sheets. Home supply stores often carry "half" sheets (4 ft. x 4 ft.) or smaller, and some will custom cut pieces for a nominal fee. Craft stores also may have smaller pieces.
- Plywood and masonite thickness is as labeled, e.g.,  $\frac{1}{2}$ -inch plywood actually measures  $\frac{1}{2}$ -inch thick.
- Heavy bolts for bobbins provide tension for the warp, but wooden thread spools or other devices also work.

### Instructions: Loom (continued)

7. Glue two 2 inches x 4 inches plywood pieces in top corners on panel B and dry.
8. Repeat for other side of loom.



9. Lay each loom side flat, B panels up, top edges touching and place hinges open on 2-inch x 4-inch blocks.
10. Mark pilot holes for hinge screws.
11. Drill pilot holes for hinge screws.
12. Attach hinges with screws.



13. Insert a screw eye on the inside of each loom leg, about 5 inches from the floor.
14. Attach a 16-inch length of rope or strong twine to one screw eye. Loop the other end of the rope to the screw eye on the opposite (front to back) leg.
15. Repeat step 14 on the other end of the loom. These ropes stabilize the loom and prevent its collapsing during weaving.



### Instructions: Bobbin

1. Cut  $\frac{1}{2}$ -inch slits in each side of the cardboard squares and punch a hole in the middle.
2. Place cardboard square and one fender washer on screw/bolt.
3. Add one nut and tighten.
4. Add second nut, but "tighten" only so it is  $\frac{1}{4}$ -inch from end of screw/bolt.
5. Add second washer.
6. Tighten third nut over washer.

