

# Last Frontier Council 2001 Pow Wow Woodworking for Cub Scouts

## WEBELOS KNOT BOARD

The following project will result in a great knot board that most Webelos will be proud to hang in their room at home. In addition to providing a woodworking challenge, it also provides an opportunity to work on knot tying skills, and will display various types of rope and whipping. It may be adapted for use by the younger boys, provided there is more adult partner involvement with some of the more complicated steps.

### MATERIALS:

- 10" Length of 1x12" Wood
- One 3-1/2" Length of Sisal Rope
- Six 8" Lengths of 1/4" Cotton Rope
- One 10" Length of 1/4" Cotton Rope
- One 8" Length of 1/8" Nylon Rope ("Parachute" or "550" Cord)
- One 8" Length of 1" Dowel
- Hand Saw
- Clamps
- Scrap wood (for drill backing)
- Ruler
- Shears (or Aviation Power Tin Snips)
- Try Square
- Hand Drill and 1/4" Bit
- Blow Torch or Cigarette Lighter (**Not** to be used by boys)
- Electrician's Tape
- Masking Tape
- Dental Floss
- Hot Glue Gun
- Staple Gun and Staple
- Picture Hanging Kit (Eyehooks and Wire)

### INSTRUCTIONS:

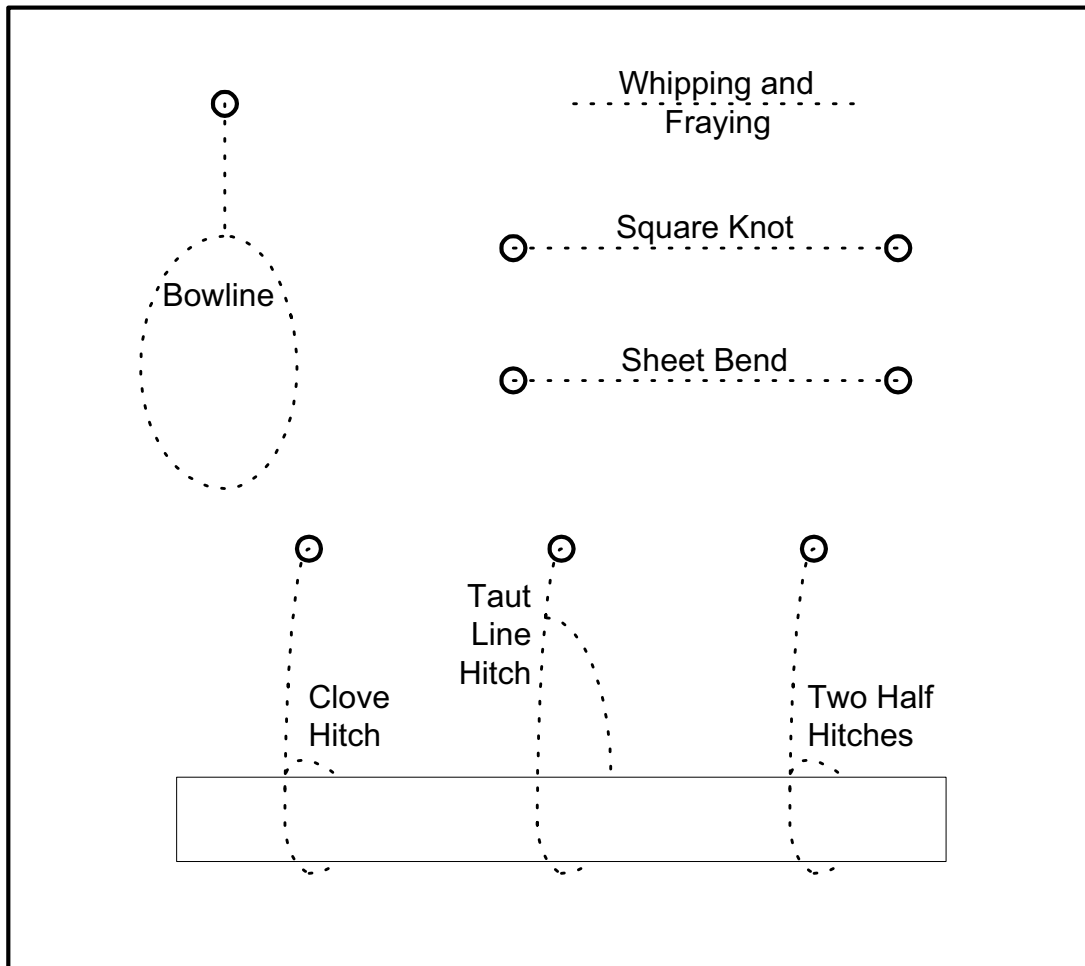
1. Use a ruler and try square to mark a line to cut 10" of length from the 1x12" stock. Use a handsaw to cut the 10" length of wood. Be sure to clamp the wood before cutting.
2. Use a ruler to mark an 8" length of the 1" dowel. Use a handsaw to cut at the mark. It may be easiest to clamp it between two pieces of wood, since it may try to roll otherwise.
3. Use a template (see below) to mark the drill holes.
4. Use a hand drill and 1/4" bit to drill at each marked location. Be sure to first clamp the project, and, since each hole must go all of the way through the work piece, to have a suitable backing that it's okay to drill holes in.
5. Sand and finish the work piece and the dowel as desired. It may be best to make the dowel a contrasting color (or leave sanded, but unfinished).

## Last Frontier Council 2001 Pow Wow Woodworking for Cub Scouts

6. While the work piece finish is drying, cut the correct lengths of rope (see above). Use shears to cut the rope (aviation power tin snips also work very well!).
7. Take the piece of sisal rope and whip one end with dental floss. Use [American Whipping](#). Frazzle the other end (as a demonstration of *why* we whip rope).
8. Take all of the cotton ropes and whip one end by wrapping with electrical tape. Be certain to leave a small gap between the end of the rope and the edge of the whipping (about the diameter of the rope – 1/4")
9. Take the piece of nylon rope and fuse it by holding the end in a flame. It will catch on fire. This must be done by an adult, who should explain to the boys what is occurring. Be careful to not spill or spatter any of the molten nylon material onto anyone, or onto anything that might be damaged. Blow out the fire on the nylon rope and set aside to cool (it will be HOT!).
10. Take two 8" lengths of 1/4" cotton rope and tie a [square knot](#) in the whipped ends.
11. Take one 8" length of cotton rope and one 8" length of 1/8" nylon rope and tie a [sheet bend](#) in the whipped ends.
12. Take one 8" length of 1/4" cotton rope and tie a [taut line hitch](#) around the length of dowel. Use the whipped end. Be certain to leave a gap between the knot and the dowel, as shown on the drawing (remember, the taut line hitch is used to adjust the length of a line, not to secure the line to a pole/post).
13. Take one 8" length of 1/4" cotton rope and tie a [clove hitch](#) around the length of dowel, just to the left of the taut line hitch tied in the previous step. Use the whipped end.
14. Take one 8" length of 1/4" cotton rope and tie [two half hitches](#) around the length of dowel, just to the right of the taut line hitch. Use the whipped end. Be sure to snug this knot all the way to the dowel.
15. Take the 10" length of 1/4" cotton rope and tie a [bowline](#) in the whipped end.
16. Take each end of every piece of rope in the project that hasn't been whipped yet (except for the piece of sisal rope) and wrap a piece of masking tape around it. Don't leave an exposed end as you would for whipping. Instead, you're trying to make the end compact enough to fit through the 1/4" holes that have been drilled into the work piece. With your fingers, twirl each piece of masking tape to form as small a diameter as possible.

## Last Frontier Council 2001 Pow Wow Woodworking for Cub Scouts

17. Using the annotations on the template figure (see below), mount each knot in its correct location. Push the masking taped end of the rope through the correct drilled hole. Adjust the length of the knot on the “pretty” side of the board by pulling it through the hole from the backside. Then, fold the rope over against the board and staple into place with a staple gun.
18. Use a hot glue gun on the back side of the whipped sisal rope and the following knots to secure them into place: Bowline, Clove Hitch, Taut Line Hitch and Two Half Hitches.
19. Screw two eyehooks into the back side of the knot board and run a piece of picture hanging wire through them. Adjust as necessary to hang the knot board straight without the wire showing, and without the knot board leaning too far forward (eye hooks should be about 3” down from the top, and 1” in from the left and right sides).



To use this drawing:

- The hard way: The drawing is a 1:2 scale. You can take measurements directly off of this drawing, then double them to get the correct dimension.

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Take these measurements and transfer them to your work piece using a pencil, ruler and try square.

- The easy way: The drawing is half size. Put it into a copier set to 100% enlargement. Make sufficient copies for each boy to have one. Then use it as a paper template, just as was done for the Thinking Game earlier in this section.
- The really easy way: Make one permanent template (as described in the Thinking Game section) using either procedure above, then let each boy use it.