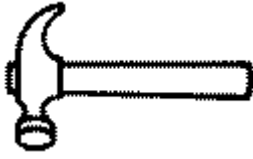


**Sam Houston Area Council  
2005 Cub Scout Leader Pow Wow – Texas Proud**

### **Craftsman (Technology Group)**



The requirements for the Craftsman activity badge include projects in wood, leather, and tin. This activity helps the boys develop confidence in their abilities by encouraging them to use their talents and skills for more advanced handicraft projects, or perhaps to develop a hobby in one of these mediums.

#### **SUGGESTED PATROL ACTIVITIES:**

1. List tools needed to complete badge.
2. Make a tool chest or bench hook for sawing.
3. Visit furniture factory, lumber mill or lumberyard.
4. Select projects to work on.
5. Have a birdhouse building contest
6. Invite someone to give a demonstration on the safe use of tools.
7. Discuss finishing methods for wood projects: Sanding, filling holes and scratches, the various types of finishes, such as shellac, stain, lacquer, varnish and enamel.

#### **SUGGESTED PACK ACTIVITIES:**

1. Exhibit tools.
2. Show wood, leather, and tin craft projects done by the boys.
3. Demonstrate the proper use of wood tools, leather tools, and metal working tools.

#### **BOARD SAWING CONTEST**

Give each boy a small handsaw, pencil, ruler, and a 2"x4" board (any length). On the word go, each boy is to mark and saw his board in half. Note: Judge the contests on skill and speed.

**Safety first: Used safety goggles when using tools**

#### **BLANK-OUT GAME**

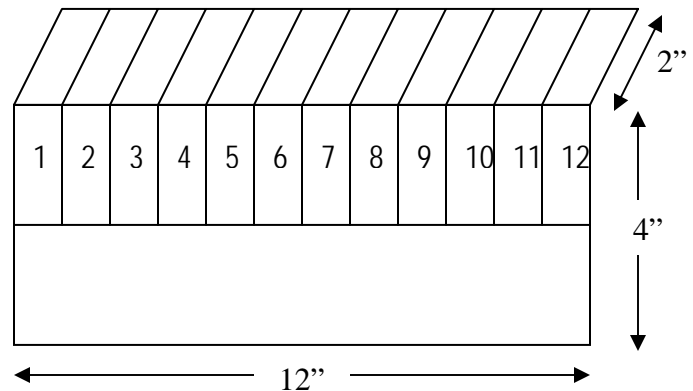
Materials:

Cut a 12" x 4" piece of 1/4" plywood

Cut twelve 1" x 2" pieces of 1/4" plywood

Cut twelve 3/4" by 3" strips of thin leather

Sand the edges very well, so that there are no sharp edges. Mark 1" x 2" rectangles across the top half of the 4"x12" board with a fine-tipped sharpie marker. Use rub-on numbers to put the numbers 1 through 12 into the twelve



drawn boxes. Brush-on a light colored lacquer stain over all of the wooden pieces. When dry, place the twelve 1" x 2" pieces over the twelve drawn boxes and glue the leather strips so that they form hinges and allow the small pieces of wood to all neatly uncover and also cover.

The game starts with all of the numbers uncovered, and the goal is to cover all of the numbers. On each roll of the dice, your dice tell you what number(s) you can cover up. E.g. a roll of 1 and 3, would allow you to either cover 1 and 3 or just cover 4. If all dice numbers rolled are already covered, you must start all over.

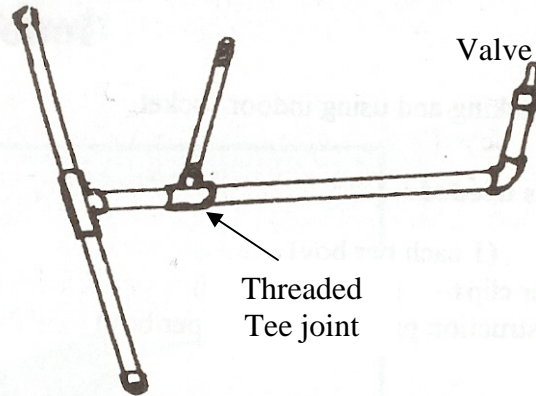
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**WATER ROCKET LAUNCHER**

**Materials:**

- 3 each ¾" PVC Cap
- One ¾" PVC Tee joint
- One ¾" x ½" threaded Tee joint
- 5' of ¾" PVC schedule 40 pipe
- One ½" x 8" threaded riser pipe
- One ¾" 90 degree ell ("L" joint)
- 1' electrical tape
- One tire inner tube valve
- PVC pipe cement or epoxy

*(important: use protective gloves and goggles when gluing!!!)*



**Assembly Instructions:**

With a hack saw, cut the 5' PVC pipe into two 6", two 12" and one 18" length. Drill a ½" hole in the middle of one ¾" Cap. Push the valve stem into this hole and trim the rubber so that it will have a tight seal. Glue this cap to one 6" pipe, being careful to have the pipe end push the rubber to be tightly sealed against the cap. Assemble the rest of the launcher as shown, and glue the joints. Wrap the threaded riser pipe where it joins the threaded Tee, so that there is a tapered, water-tight connection when a 2 liter bottle, with a few cups of water in it, is pushed onto it.

**PVC RECORDER**

**Materials:** 14" long ½" PVC pipe, ½" diameter dowel, craft glue, hand drill

A recorder is a flute-like instrument where you blow into the end to create sounds as the air whistles over the holes that you cut. Cut a ½" PVC pipe to just under 14" in length. Before inserting the plug, the 1" long dowel needs to be shaved off squarely on one side, about 1/16<sup>th</sup> inch, so that air can pass through when it plugs the end. Plug one end of the pipe tightly with the inch-long dowel and glue it in place with craft glue. The shaved side of the plug directs air over the first small hole that makes the whistling sound. Make holes as shown below:

- 3/8" square hole 1" from the mouthpiece end (drill 3/8" and square it with a knife)
- 3/16" round hole 7.5" from the mouthpiece end
- 7/16" round hole 8.5" from the mouthpiece end
- ¼" round hole 9.5" from the mouthpiece end
- 3/16" round hole 10.5" from the mouthpiece end
- ¼" round hole 11.5" from the mouthpiece end
- ¼" round hole 12.75" from the mouthpiece end



**SLIDE WHISTLE**

Similar to the recorder shown above, use a 12" long piece of 1" PVC pipe and make a similar plug and first hole. Do not cut the fingering holes. Cut a 10" length of ½" PVC pipe and drill a small hole in the end, and attach a small piece of wire. Wrap a few turns of electrician's tape around the end of the slide. Slide that smaller pipe into the open end of the whistle and listen to how the pitch changes when you blow on the whistle and move the slide in and out.

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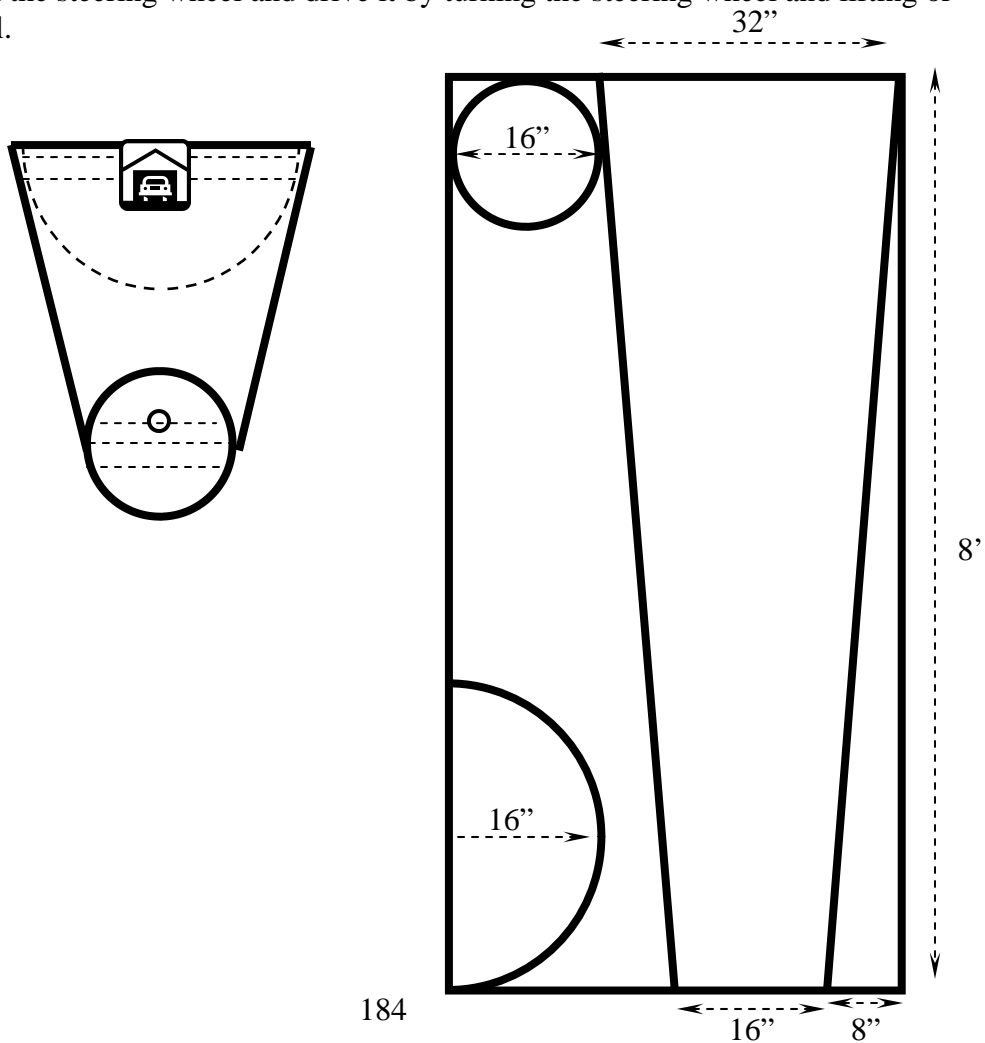
**DRIVING YOU CRAZY**

Materials:

One 4' x 8' piece of 1/4" plywood	One 8' 2x4 pine lumber	Ten 1.5" wood screws
Small box of 6 penny nails	One large ball bearing	Elmer's Glue

- Cut the plywood into the shapes shown at bottom right of this page. Drill a hold large enough to put the ball bearing through, two inches above the center of the 16" disk.
- Cut the 2x4 into 28" and 13" lengths.
- Sand and paint the 16" disk to look like a steering wheel.
- Sand and paint the long trapezoid to look like roadways and green scenery.
- Sand and point the 16" radius half circle black.
- Nail through the top of the roadway sheet of plywood into the 2" side of the 13" long 2x4, centered under the short end of the trapezoid and flush with the end of the plywood. Nail through the top of the roadway sheet of plywood into the 2" side of the 28" long 2x4, centered under the long end of the trapezoid and flush with the end of the plywood.
- Center the "steering wheel" to the top surface of the roadway sheet of plywood, and drill tap holes for the screws to go into the 2x4. Affix the steering wheel with four screws.
- Align the top of the rocker half circle to the top surface of the roadway sheet of plywood, and drill tap holes for the screws to go into the 2x4. Affix the rocker with six screws.

Decide on a destination for the ball bearing near the large end and drill a hole or build a "garage" to "drive to" and "park" the ball bearing in. Add obstacles as desired. Pop the ball bearing through the hole in the steering wheel and drive it by turning the steering wheel and lifting or lowering the wheel.



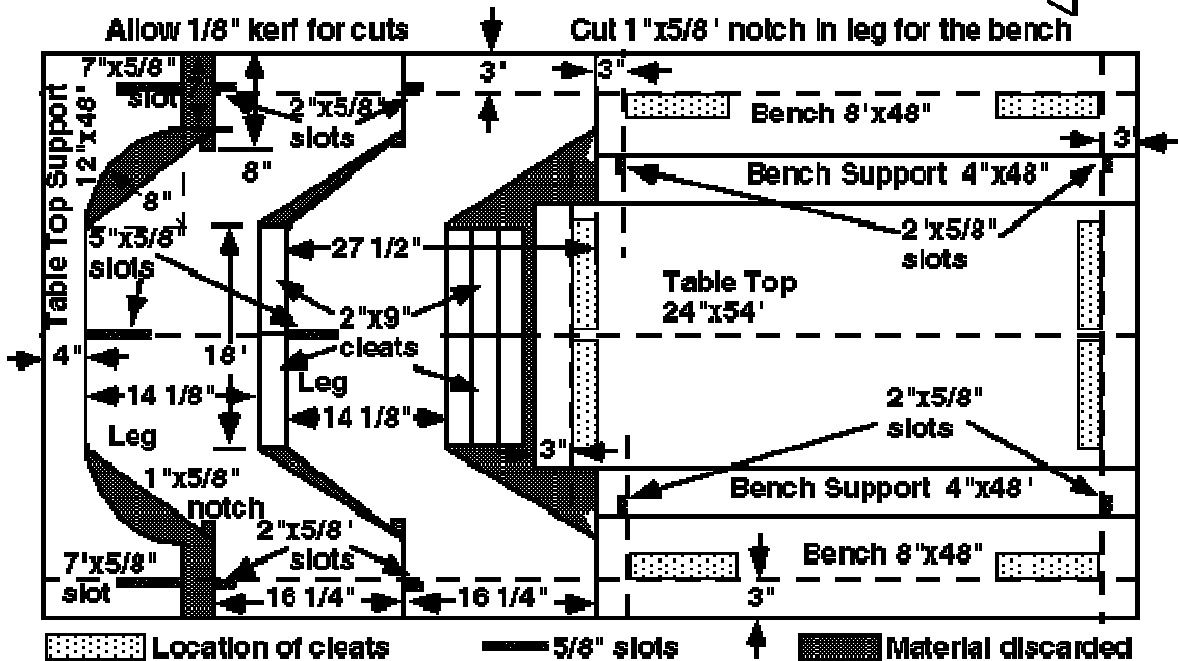
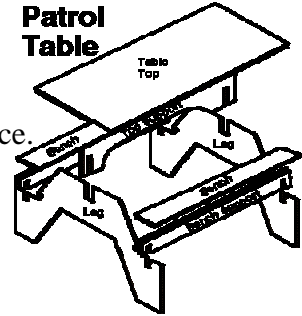
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**Patrol Table Plans**

Note: the materials list shows how to cut all of the pieces out of one 4' x 8' sheet of 5/8" plywood. The plywood should be exterior grade with one smooth sanded surface. All cut edges need to be sanded. The cleats should be fastened with waterproof glue and rust resistant screws. A good penetrating oil finish will further prevent splinters and improve the life of the table.

**Materials:**

- 4'x8' sheet of 5/8" exterior plywood with one smooth sanded surface.
- Exterior penetrating finish
- 1" Rust resistant screws
- Waterproof glue



**Notes:**

1. When cutting top support you may use an 8 inch radius for the curved section.
2. Bench Supports have a 2"x5/8" slot for legs centered 2 11/16" from each end.
3. Legs have a 2"x5/8" slot for bench supports centered 2 11/16" from each end.
4. Legs have a 5"x5/8" slot for the top support centered in top.
5. Top support has 7"x5/8" slot for legs centered 2 11/16" from each end.
6. Legs have a 1"x5/8" notches to lock the benches in place.
7. The cleats are positioned to keep benches and top from sliding.
8. Fasten the cleats in place with rust-resistant screws and water-proof glue.
9. Finish with a nontoxic penetrating exterior finish.

From Henning's Scouter's pages

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**Make Your Own Leathercraft Mallet:**

When you are tooling or stamping imprints into leather, you need a wooden mallet to hammer on the metal tools. You could buy a mallet, but what fun is that?

Materials for each mallet: 10" long piece of 7/8ths inch diameter dowel (oak is best)

2 inch diameter limb, approved to be pruned from someone's yard

Hand saw sharp knife Drill with 7/8ths inch bit

Carpenter's wood glue or Elmer's Glue

- Cut the 2" diameter limb into 4" to 5" lengths.
- Sand the faces if the cut wasn't straight.
- Hand drill a little over halfway into the exact center of the mallet head.
- With your knife, slightly carve the tip of the dowel, so that it will go more smoothly into the hole. Don't carve off too much; just enough not to "catch".
- Coat the inside of the hole with wood glue.
- Hammer the dowel into the mallet head that you made until it goes all the way in. Do not use a metal hammer directly onto the wood of the dowel. Place a scrap piece of 2x4 over the end of the dowel, put the mallet head on the ground and hammer the dowel in as far as it will go.



**Leathercraft Lacing**

Many fun leather projects are available, and some of the most useful required lacing together pieces of leather. Billfolds, coin purses, etc. are good examples. Simple lacing is OK, but it looks a lot better if you do a more professional stitch, and these boys are capable. A leather lacing needle makes it easier.

**To lace an item that will finish lacing at the same place where you start:** Push the lacing through the first hole and pull all but 1" through the hole. Bring the lace over the edge (without a twist) and go into the next hole, leaving a small loop. Go through the loop front to back, then tighten the stitch from the back, removing the loop. Continue lacing in this manner. When you get back to the start, pull the original lacing out of the starter hole and add one more stitch through that hole. Remove the starting lace from the next loop and thread the needle down through this loop. Pull both ends through hole 2 to the inside and cement in place.

