



## Spark Makerspace Woodshop Class: Six Pack Carrier

This class will teach introductory hand tool use and woodworking assembly techniques. Students will cut, drill, screw, nail, glue, and sand the parts of a six pack carrier, including wooden dividers. At the end of the class, students will take the assembled carrier home to be stained, painted, clear-coated, or left raw to develop a natural patina through use.

### Class Outline:

#### Session #1 (3 hours) :

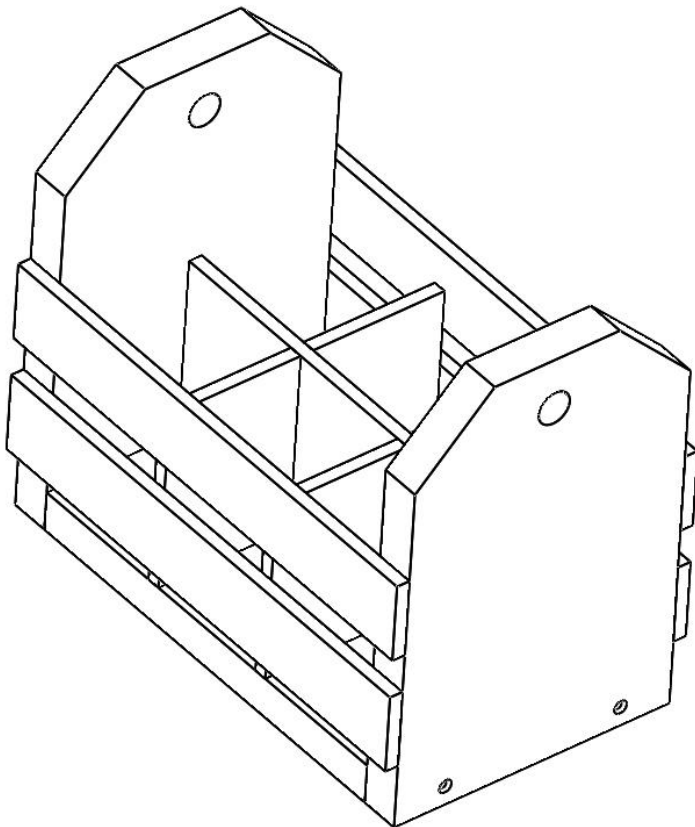
- Introduction
- Ends
- Bottom Assembly
- Side Rails
- Dividers
- Bonus: Bottle Opener

### Materials Required:

- 1" x 6" pine or fir (nominal; actual size 3/4" x 5-1/2"), 3 pieces 8-1/4 inches long
- 1/4" x 1-1/2" x 48" hardwood or plywood; popular will be used for this class
- 1/4" x 3-1/2" x 24" hardwood for plywood; poplar will be used for this class
- #8 x 2" flat head wood screws
- 17ga x 1" nails
- Wood glue; Titebond II will be used for this class

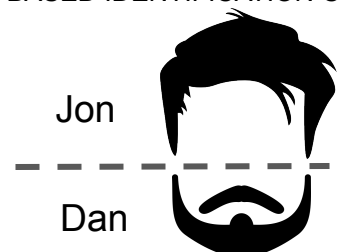
### Tools Used:

- Cordless drill
- Drill Bits:
  - 3/4-inch spade bit
  - #6 countersink bit
  - 1/16-inch twist bit
- Combination square
- Measuring tape
- Pencil
- Awl
- Miter saw
- Screwdriver
- Coping saw or dovetail saw
- Hammer
- Rasp
- Sander



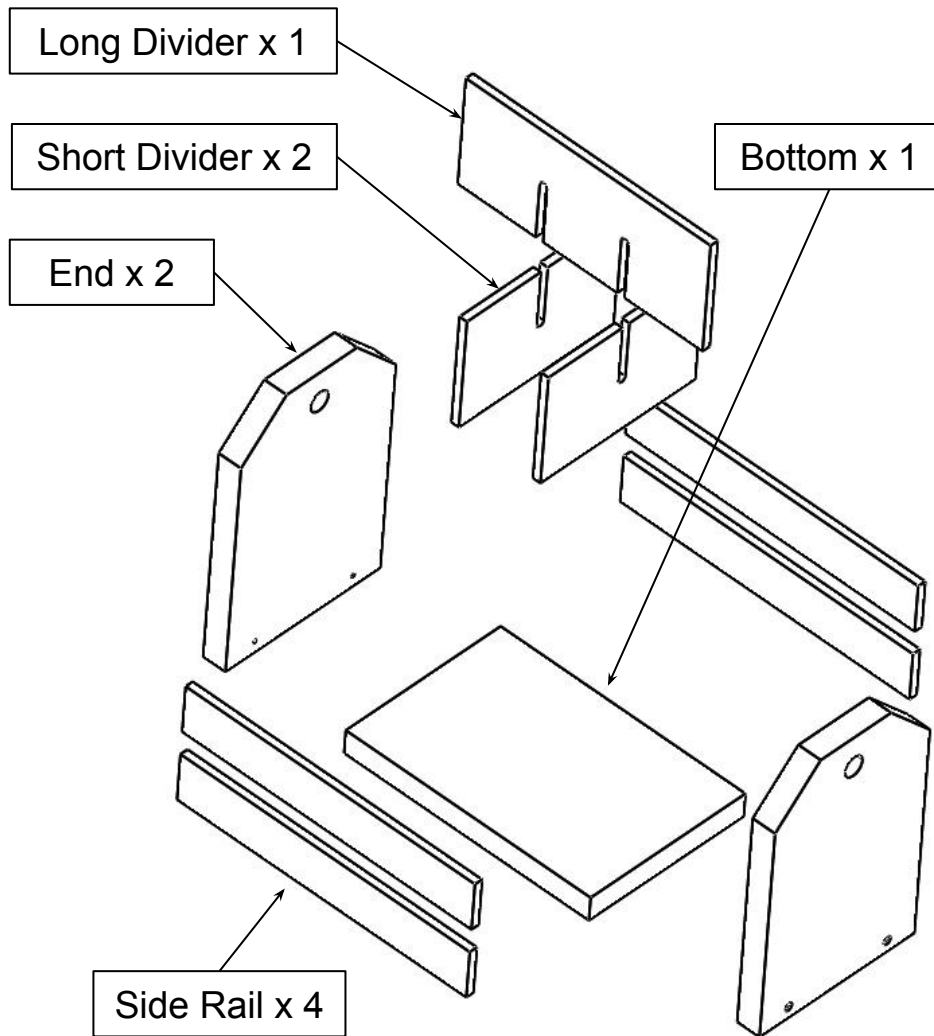
Assembled Wooden Parts of the Carrier  
(rope not shown)

SPARK WOODSHOP INSTRUCTOR  
HAIR-BASED IDENTIFICATION CHART:



## Exploded View of Six Pack Carrier

Fasteners not shown



## Operations:

- 1) Drill 5/8" hole in each end
- 2) Trim corners of each end
- 3) Align ends with bottom
- 4) Drill countersunk pilot holes
- 5) Add glue and screws
- 6) Cut four side rails to 9-3/4"
- 7) Pre-drill nail holes in side rails
- 8) Glue and nail side rails
- 9) Cut long divider to 8-1/4"
- 10) Cut short dividers to 5-1/2"
- 11) Locate and drill 1/4" holes in dividers
- 12) Cut divider slots
- 13) Sand everything
- 14) Assemble and install dividers
- 15) Add rope

**Bonus Bottle Opener** will be assembled if class time allows; otherwise materials may be taken home for completion

- 1) Mark center of hole
- 2) Drill divot with forstner bit
- 3) Drill screw hole with 1/16" bit
- 4) Cut rabbet
- 5) Shape handle
- 6) Sand
- 7) Mount washer with screw

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## Drill and Cut Ends:

1. A diagram with the dimensions of the ends (both are identical) is included at the end of this handout.
2. Start by marking the locations for the large hole, the two small holes, and the points where the corners will be removed.
3. Drill the large hole first, using a 5/8" spade bit.
  - a. Clamp the board to the workbench
  - b. Drill through the board until the point of the bit is showing through, then flip the board and finish the hole from the other side.
  - c. Repeat for the second end board.
4. Draw the cut line for each of the four corners to be removed (two on each end)
5. Turn to the next page

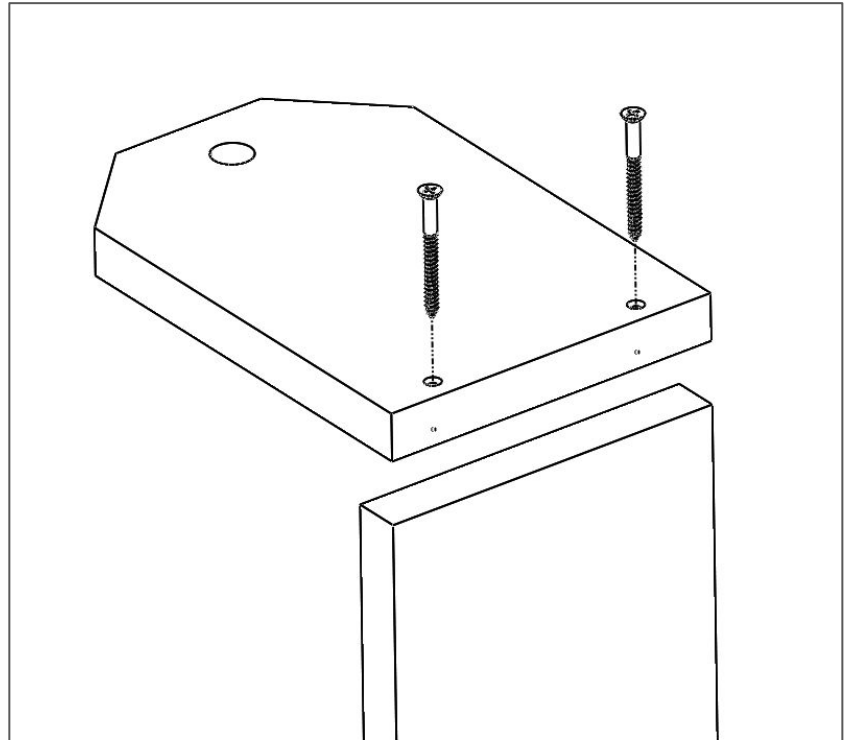
### **Ends, Continued:**

6. Clamp the board in the workbench with the marked corner line vertical, so gravity helps with the cut.
7. Cut along the line with the backsaw
8. Repeat for each of the other corners (four total)
9. Use the rasp to remove sharp edges and rough surfaces. The part will be sanded later, so the finish doesn't have to be perfect.

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### **Join Ends to Bottom:**

1. Clamp the bottom in the workbench, with the short edge of the board just sticking up about 1/4" from the work surface.
2. Mount the #6 (smallest) pilot and countersink bit in the drill.
3. Align the end board as shown to the right, and drill the two screw holes. Getting the depth of the countersink right takes practice, so don't feel back if you're a little off. It won't affect the function of the final product!



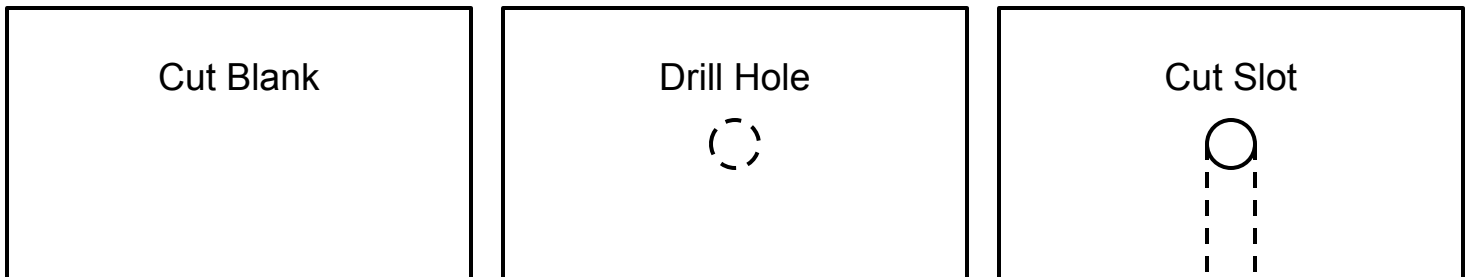
4. For extra alignment support, the first screw can be inserted before the second hole is drilled. Once both holes are drilled, run both screws in with a screwdriver, but don't tighten them completely yet - you'll be pulling the out again in a minute to add glue.
5. Repeat the same thing on the other end.
6. Remove the countersink bit from the drill, and replace it with the Phillips screwdriver bit. Going forward, either the drill or the screwdriver can be used to remove and replace screws - whatever you're comfortable with.
7. Working one end at a time, the screws should be removed, and glue added to the contact areas between the base and the ends. Replace the screws, tightening them down firmly, and wipe the excess glue ("squeeze out") off the surface.
8. Glue and screw both ends to the bottom. The main structure of the carrier is done!

### **Side Rails:**

1. Start with the 1/4" x 1-1/2" board. Use the miter box and backsaw to cut four pieces 9-3/4" long
  2. Put a 1/16" drill bit in the drill
  3. Pre-drill holes for nails in the ends of the side rails
  4. Use nails and glue to attach the side bars. The top of the upper bar should be about 5-1/2" from the bottom of the carrier.
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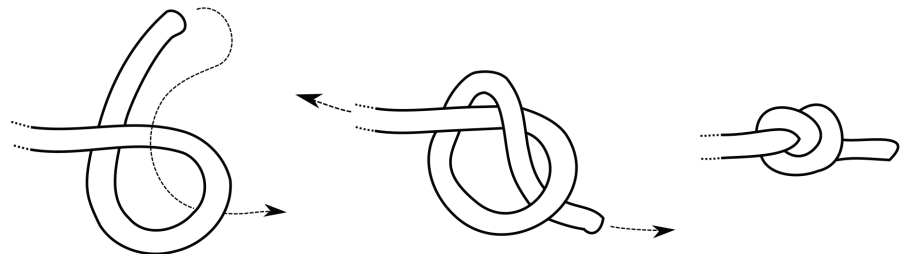
### **Dividers:**

1. Take the 1/4" x 3-1/2" board. Using the miter box and backsaw to cut one piece 8-1/4" long, and two pieces 5-1/2" long.
2. Find the diagram at the end of the handout. Lay out the locations of the holes in the middle of each piece - four in total.
3. Chuck a 1/4" drill bit in the drill.
4. Use the point of the awl to mark the center point for each hole.
5. Clamp each board to the workbench, using either a sacrificial board or aligning the future holes off the edge of the workbench.
6. Drill the holes through each board.
7. Using a square, mark each cut line so it lines up with the edge of the holes.
8. Clamp the board to the workbench, and use the coping saw to cut the slots, ending at the holes. This will give your slots a nice rounded end.
9. Assemble the dividers, and drop them into your carrier.



### **Rope:**

1. Feed each end of the rope through the holes in the carrier ends, and tie an overhand knot in each end. Your six pack carrier is complete!

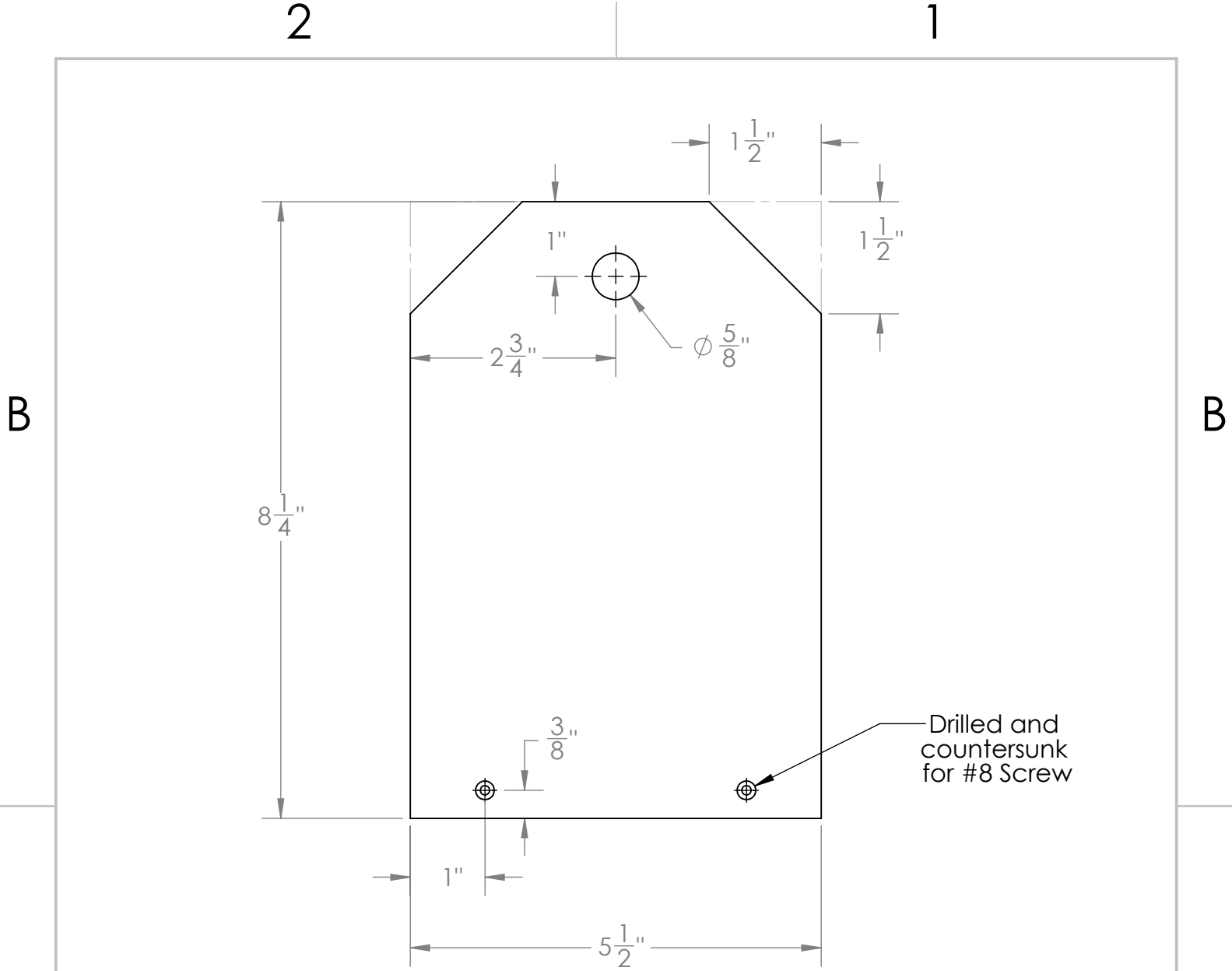


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Spark members with approved shop access may use the shop to create items, like those described in this tutorial, at any time. If you have any question on methods, materials, or tools, please contact the Spark

Woodshop Leads at:

WOODSHOP@SPARKMAKERSPACE.ORG



1. FOR EASE OF MEASUREMENT, DRILL 5/8-INCH HOLE BEFORE CUTTING OFF CORNERS
2. DRILL 5/8-INCH HOLE PARTWAY, UNTIL POINT OF DRILL BIT SHOWS THROUGH BOTTOM, THEN FLIP BOARD AND FINISH DRILLING FROM OTHER SIDE
3. COUNTERSUNK HOLES SHOULD BE DRILLED WHILE END PIECE IS ALIGNED TO BOTTOM OF CARRIER TO ALLOW CORRECT ALIGNMENT OF HOLES

<b>SPARK MAKERSPACE</b>			
End Piece for Six Pack Carrier			
SIZE <b>A</b>	DWG. NO. End	REV.	
SCALE:1:4	WEIGHT:	SHEET 1 OF 1	

2

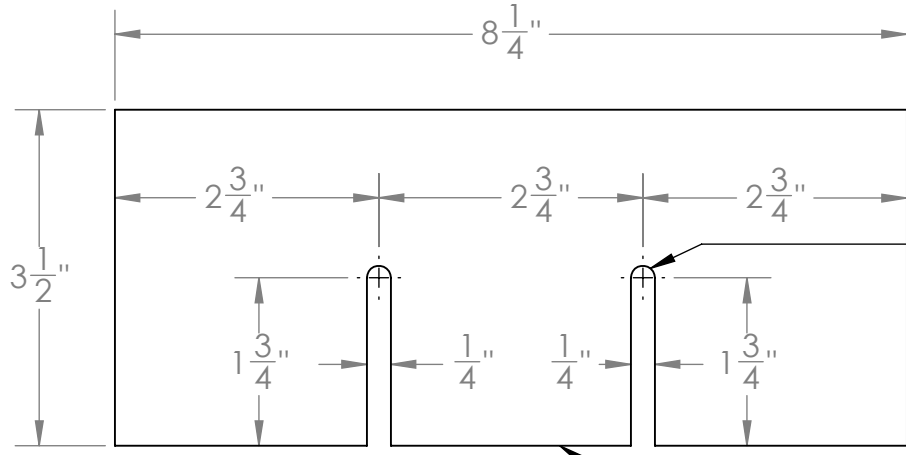
1

2

1

B

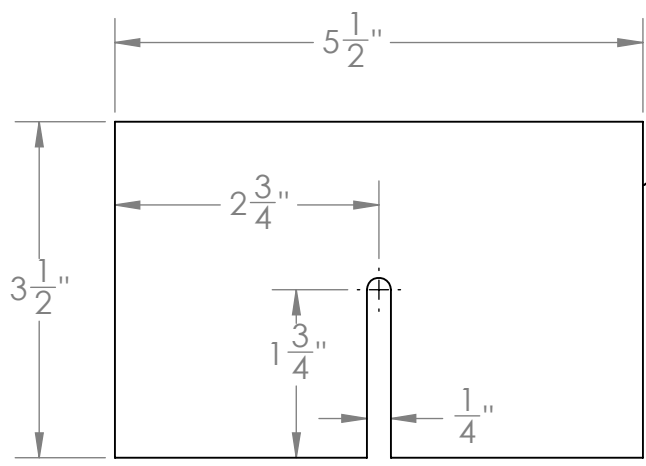
B



DRILL 1/4" HOLES  
PRIOR TO CUTTING  
SLOTS

LARGE DIVIDER  
ONE (1) REQUIRED

SMALL DIVIDER  
TWO (2) REQUIRED



A

A

**SPARK MAKERSPACE**

Large and Small  
Dividers for Six Pack  
Carrier

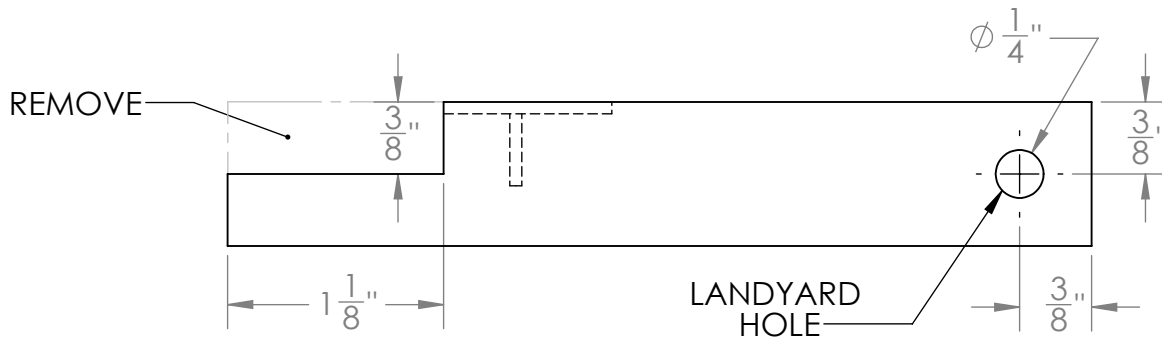
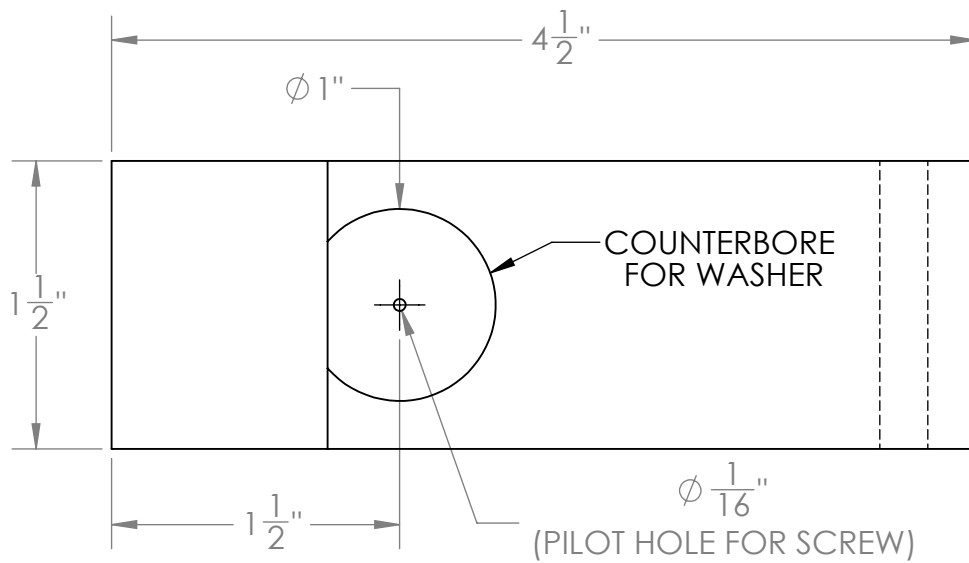
SIZE	DWG. NO.	REV.
A	Dividers_For_Drawings	
SCALE:1:2	WEIGHT:	SHEET 1 OF 1

2

1

2

1



#### Stock:

Start with 1-inch x 2-inch (nominal) of strong hardwood (actual dimensions 3/4 by 1-1/2 inches). Oak will be used in class. The length is not critical, but at least 4-1/2 inches (shown) is suggested.

#### Additional parts required:

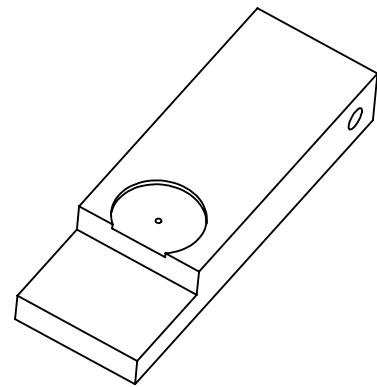
1. #4 x 1/2-inch flat head wood screw
2. 1/8-inch by 1-inch fender washer

#### Modifications:

Ends and edges may be rounded or shaped for hand. Hole for landyard cord may be drilled at any location or orientation.

#### Assembly:

- Drill counterbore deep enough for washer to sit flush with surface.
- Drill pilot hole for screw
- Make cuts for "step"
- Round ends and edges as preferred
- Sand all surfaces
- Mount washer in counterbore using woodscrew.
- Coat in alcohol-resistant finish, or leave unfinished to develop patina



## SPARK MAKERSPACE

Bonus Bottle Holder for  
Six Pack Carrier Class

SIZE A	DWG. NO. BottleOpener	REV.
SCALE:1:2	WEIGHT:	SHEET 1 OF 1

2

1