

Constructing a Cold Frame

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I. Objective

Cold frames are necessary to keep young seedlings warm and away from frosty conditions. These plans provide a means of building a cold frame from materials easily obtained from hardware and lumber stores

II. Materials/Tools

| Material | Purpose |
|-----------------------------------|------------------------|
| (2) 8' long 2" x 4" wood pieces | runners |
| (1) 4' x 8' sheet of 3/4" plywood | bottom of the box |
| (3) 8' long 2" x 6" wood pieces | sides of box |
| (7) 8' long 1" x 2" wood pieces | the frame of the lid |
| 5' x 10' sheet of pond liner | line the bottom of box |
| 6' x 10' sheet of visquine | line the top of box |
| (4) 1" x 5" strap hinges | attach lid to box |
| 2 1/2" stainless steel screws | assembly |
| Polyurethane glue | assembly |

*Note: All wood materials should be pressure treated.

| Tools | |
|-----------------|----------------|
| power miter box | clamps |
| cordless drill | drill press |
| countersinks | ear protection |
| tape measure(s) | safety goggles |
| marking pencils | |

III. Procedures

A. Safety Procedures

The safety of the students while working with various and potentially dangerous power tools was top priority. Students wore safety goggles and ear protection at all times when working with power tools. Supervisors told student to always think about what could happen for example, where a tool would go if it slipped from their hand. Wood being drilled or cut was held securely by another person or was firmly clamped to a secure object or surface. Students were also careful to keep limbs and loose clothing and hair out of the way or path of power tools. Finally, while setting up and taking down, all power tools were unplugged so as not to incur an injury from an accidental ignition of a power tool.

B. General Procedures

To insure the accuracy of each cut, each piece-to-be-cut was measured by at least two students. For the same reason, all parts of the same length were cut at the same time or cut using a stop. All joints of the cold frame were glued in addition to installing screws. Also for all screws, pilot holes were pre-drilled in the 1" x 2" pieces to avoid splitting the wood.

IV. Measurement/ Layout

Cut...

- (1) 8' - 2 x 6 inch piece into (2) 45" long pieces (the ends of the box.)
- (4) 46½" long 1" x 2" pieces
- (8) 12" long 1" x 2" pieces
- Bevel the ends of each 2" x 4" inch pieces for the runners 45°.

V. Assembly

1. Glue and screw 2" x 4" runners on the bottom of the 4' x 8' sheet of plywood parallel to the long sides the box, and 1 foot from each of those sides.
2. Assemble the (2) 8' 4x 6's and (2) 4' - 4 x 6's into a box. Use (4) screws at each joint using 2 ½ inch screws.
3. Glue and screw the box constructed out of the 2"x 6" wood onto the 4' x 8' sheet of plywood. Space the screws 1' apart using 2" screws.
4. Make 2 frames out of 1"x 2" pieces using (2) 8' pieces and (2) 46½" pieces to make each frame. Use 1¼" screws.
5. Use 12" long 1" x 2" pieces to attach the two frames in a box shape. Attach one 12" long 1"x 2" piece inside each corner.
6. Of the remaining (4), put (2) 12" long 1" x 2" pieces in the back long edge, and the other (2) in the front long edge, 24" on center.
7. OPTIONAL: Line the bottom box with pine liner by stapling it to the edges with 3" heavy-duty staples and folding it like rapping a present. Trim away the excess.
NOTE: The pond liner is only necessary if you will be growing seedlings that need standing water, as is the case with black mangrove seedlings.
8. Cover the top with the frame composed of the 1" x 2" pieces with clear visquine and wrap as you would a present. Trim off the excess.
9. Attach frame to the box with (4) strap hinges. Use the screws that come with the hinges.
10. NOTE: Drill holes in the bottom of the cold frame to allow water to drain.

DIAGRAMS FOLLOW ON THE NEXT PAGE

VI. Diagrams:

