

## Leaf Dryer Prototype Build Instructions

### Materials:

- high density fiberboard
- 3 two liter bottles
- steel sheet metal
- screen
- wood glue
- staples
- screws
- metal pipe
- plywood
- scissors
- ruler

### Cutting and Drilling Instructions:

1. Cut the high density fiberboard using a table or miter saw.
  - a. four 12" by 12" squares (box sides)
  - b. one 12 <sup>3</sup>/<sub>4</sub>" by 12 <sup>3</sup>/<sub>4</sub>" square (box top)
2. Drill a 1/2" hole near bottom of one of the 12" by 12" squares (for intake pipe).
3. Drill a hole in one of the sides 4" from the bottom and centered (make hole just large enough to insert thermocouple).
4. Cut a 4 1/4" hole into center of the top of box (for chimney)
5. Cut the sheet metal into a 14" by 13" sheet using metal shear cutters. (box bottom)
6. Drill four 1/8" holes into metal sheet.
7. Cut plywood into four 1/2" wide strips (tray frame).
  - a. trim the thickness of 2 strips off of the other two strips (gives inner and outer strips to form perfect square).
8. Cut the bottom off of a 2 liter bottle. For other two bottles, cut off both the bottom and top.

### Assembly Instructions:

1. Using wood glue, assemble the four 12" by 12" squares to make the sides of the box.
2. Glue the four plywood strips together into a frame using the wood glue.
3. Staple screen to top of frame and trim screen to size with scissors.
4. Drill four screws into the box, one in the center of each side (measure 6" from two perpendicular edges) for tray to rest on.
5. Place one of the two liter bottles without a top into the hole on the top of the box. Ensure there are no gaps or spaces (if there are, seal them with wood glue).
6. Insert intake pipe into 1/2" hole on side of box.

7. Ensure the leaf tray fits inside the box, and let it stay in the box.
8. Secure the metal sheet to the wooden stand.
9. Place box on top of stand.