



Building a Grow Light Frame

Resource Sheet for 4 ft. grow frame

Materials

All PVC pipes should be 1" (this will make your grow-light frame sturdy and safe for your classroom)

- 3 – 10' long PVC pipe
- 8 – PVC Tees (all soc, not threaded)
- 6 – PVC 90° elbows (all soc, not threaded)
- 2 – PVC 45° elbows (all soc, not threaded)
- Lighting
- Hacksaw or PVC cutter
- Pliers
- PVC Glue (e.g. Christie's Red Hot Blue Glue)

*All of these materials are available at Home Depot, depending on the lighting.

Instructions

1. Cut the pipe
 - a. Cut 4 pieces of the 10' PVC pipes into 46" sections.
 - b. With the remaining PVC piping, cut two 26" pieces, two 22" pieces, two 19.5" pieces, two 7.5" pieces and two 2" pieces.
 - c. At this point you should have:
 - i. Four 46" pieces
 - ii. Two 19.5" pieces
 - iii. Two 26" pieces
 - iv. Two 22" pieces
 - v. Two 7.5" pieces
 - vi. Eight 2" pieces

2. Assemble the sides

*Note about assembly: The glue sets extremely quickly (15 seconds), so you do not have much time to adjust angles after the glue is put on. We recommend doing a "dry-fit" without the glue first to make sure everything fits together correctly.

- a. Connect a 90° elbow to each end of a 19.5" pipe piece.
 - b. Connect a Tee into each of the 2 elbows (with a 2" connector piece), you can adjust the angle later.
 - c. Connect a 22" piece into one of the tees (front side). Connect a 26" piece into the other tee (back side). Connect a tee on top of each of the 22" and 26" pieces.
 - d. Connect a 45° elbow into the tee on the 22" piece (with a 2" connector piece) and a 90 degree elbow (with a 2" connector piece) into the tee on the 26" piece. Connect those elbows with a 7.5" piece of piping.
3. Glue pieces together
 - a. Assemble the other side the same way as the first. After a "dry-fit," glue the side-pieces together to form two sides. This will help the grow-lab frame be easily assembled and disassembled.

4. Final assembly
 - a. Connect two 46" pieces into each of the bottom tees, to create the base.
 - b. Connect the other two 46" pieces into the top tees. These are to hang the lights on.

5. Hang the lights
 - a. Loop the chain around a top 46" pipe. Close the loop by using your pliers to open up a loop on the chain and connecting it to another link on the chain. Attach an S hook to the end of each of the chains and attach these to the lights. Make sure to crimp the S hook closed around the chain to make sure it will not come off.
 - b. Do this with all 4 chains. Loop two chains on the front bar and 2 chains on the back bar.
 - c. You can adjust the height of the lights by hooking the S hook on the light higher up on the chain.

Estimated Costs*

10' PVC pipes (x3)	\$12
PVC Tees (x8)	\$8
PVC 90° Elbows (x6)	\$7
PVC 45° angles (x2)	\$2
Glue (shared)	\$1
Light Fixture (x2)	\$81
Chains (x4)	\$3
S-Hooks (x4)	\$1
<hr/> Total	<hr/> \$115

*as of 2015



4 Foot Grow Lab Frame

* All cut dimensions

1" PVC

- 46" x 4
- 19.5" x 2
- 26" x 2
- 22" x 2
- 7.5" x 2
- 2" x 8

PVC Connectors

- 90° elbows x 6
- 45° elbows x 2
- Tees x 8

Black Chain

- 24" x 4
- S Hooks x 4

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Table Top Version, 2 ft.

If space is an issue, you can make a smaller version with the following materials. Assemble as directed above, replacing the 46" PVC piping with 24" PVC piping.

- 3 - 10' long PVC pipe (1"), cut:
 - 24" (x4)
 - 19.5" (x2)
 - 26" (x2)
 - 22" (x2)
 - 7.5" (x2)
 - 2" (x8)
- 8 - PVC Tees (all soc, not threaded)
- 6 - PVC 90° elbows (all soc, not threaded)
- 2 -PVC 45° elbows (all soc, not threaded)
- Lighting
- Hacksaw or PVC cutter
- Pliers
- PVC Glue (e.g. Christie's Red Hot Blue Glue)

Estimated Costs*

10' PVC pipes (x3)	\$12
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PVC 45° Elbows (x2)	\$2
Glue (shared)	\$1
Light Fixture (x2)	\$66
Chains (x4)	\$3
S-Hooks (x4)	\$1
<hr/> Total	<hr/> \$100

*as of 2015

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