



Supplemental Activity: Building Grow Lights

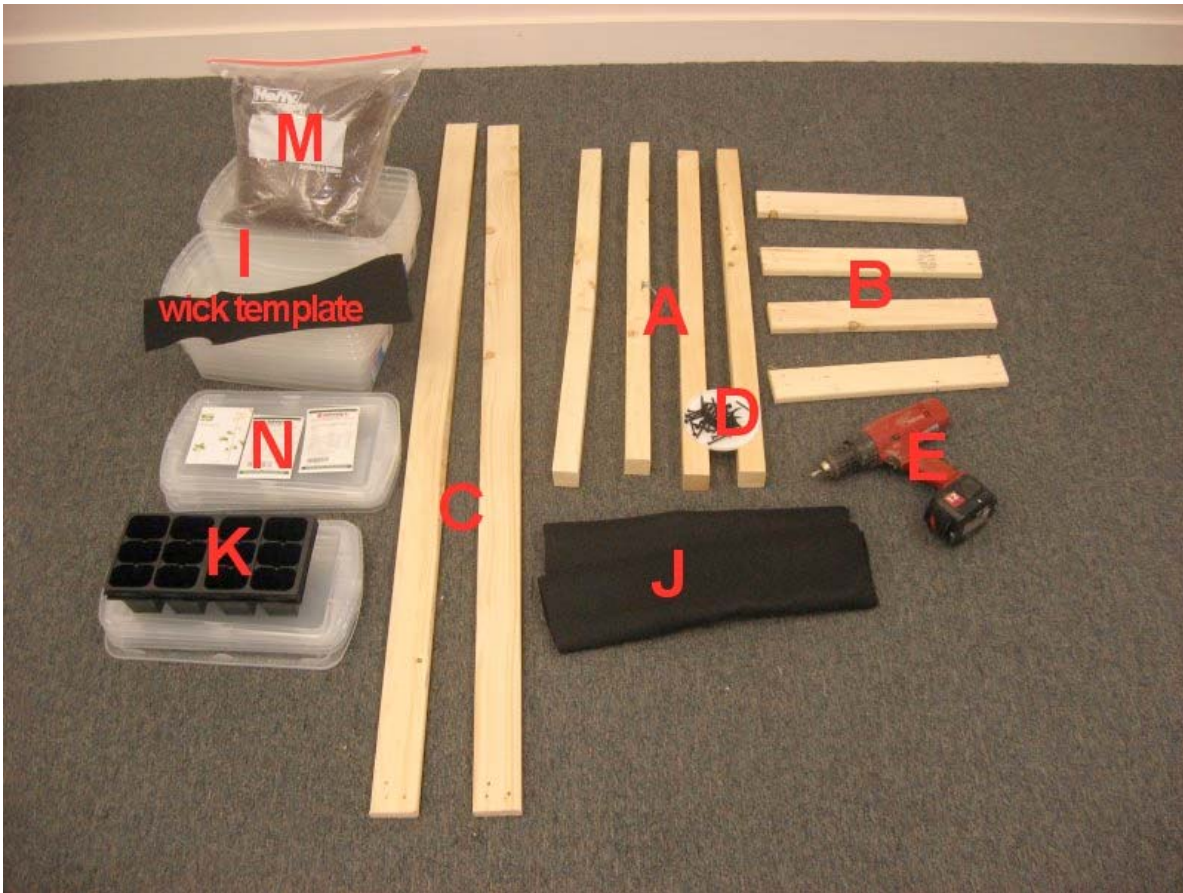
Although not essential, a set of Grow Lights is highly recommended for growing plants in the classroom. Without 24-hour lighting, the plants will be “leggy” and slow-to-grow. Without the wick watering system, the plants must be watered every day, which is very difficult in a school setting.

1) Estimated time

A setup with two light fixtures should take 1-2 hours. Students could be particularly helpful cutting out wicks from the felt.

2) Materials and tools (measurements in inches)

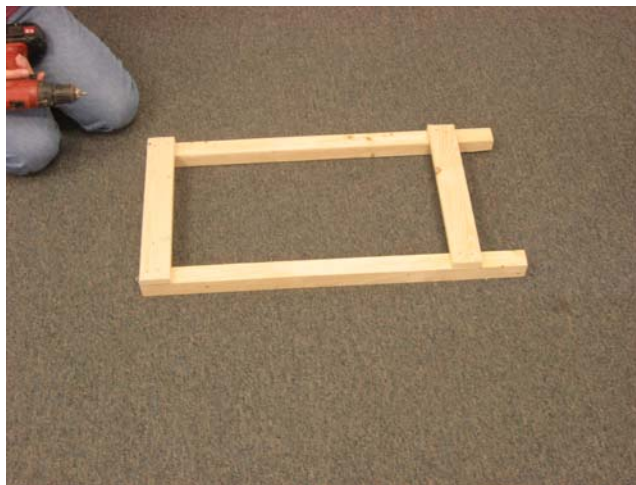
- A. (4) posts, 2x2x30
- B. (4) short bars, 1x3x15
- C. (2) long bars, 1x3x52
- D. screws
- E. screwdriver
- F. twine to hang lights
- G. (2) fluorescent light fixtures
- H. (4) T-8 light bulbs
- I. (10) plastic water trays with tops
- J. (10) large felt wicks, cut from black felt using template
- K. six-pack plant pots
- L. tiny wick for each plant pot, 1/4 x 1, cut from green felt
- M. potting mix (one bag, about 5 lb.)
- N. seed mix
- O. plastic plant labels



Assemble light frame

A. Assemble the two end pieces:

1. Put two short bars (B) on two posts (A), with the upper bar down about 3 in.



2. Screw these together with two screws (D) per joint, using the predrilled holes in the short bars.



3. Make another identical end.



B. Add the crosspieces:

1. Attach one long bar (C) to one end piece with two screws, using the predrilled holes in the long bar. Bars should be square.



2. Attach the other end of the long bar to the other end piece.

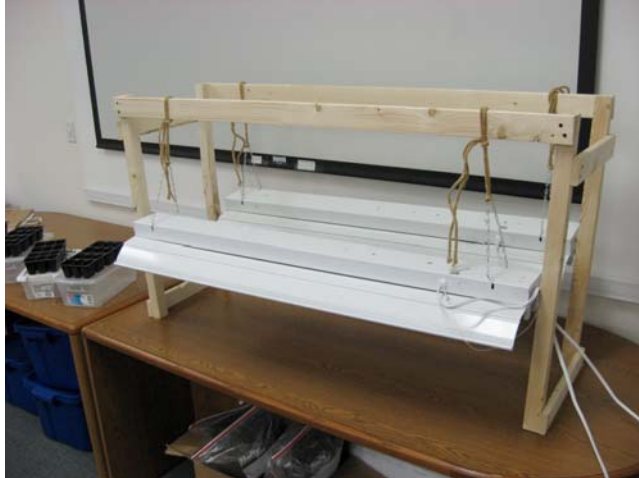


3. Attach the other long bar and set the frame upright.



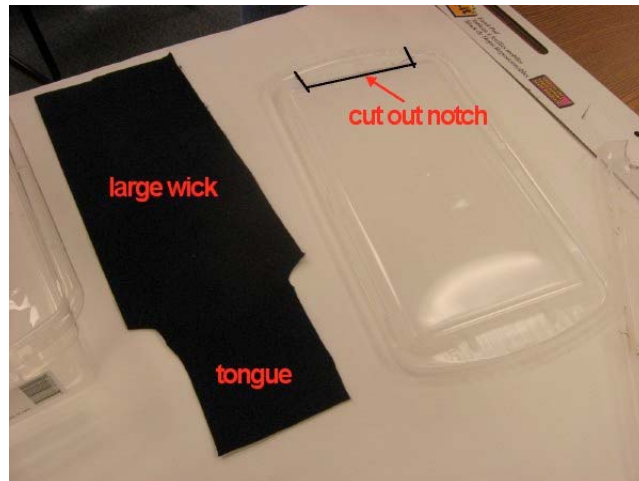
C. Hang the lights:

1. Assemble the fluorescent light fixtures according to the manufacturer's instructions.
2. Hang the lights from the frame. Note that you will need to change the height as the plants grow.

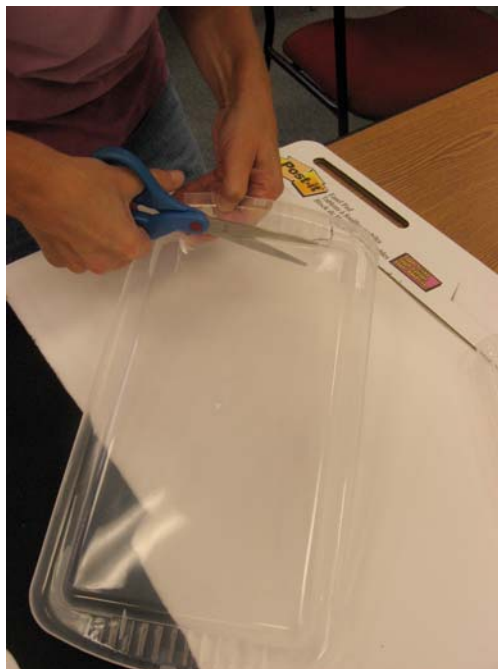


Watering system assembly

1. Find the templates for the large felt wick (black) and the water tray lid with a notch.



2. Mark the notch on each water tray and cut it out.



3. Make as many large felt wicks as needed (one for each water tray, ten per grow light setup), using the felt template. The provided bolt of felt (J) is 36 inches wide and the wick is 6 inches wide, so lay out six wicks side by side across the bolt of felt.

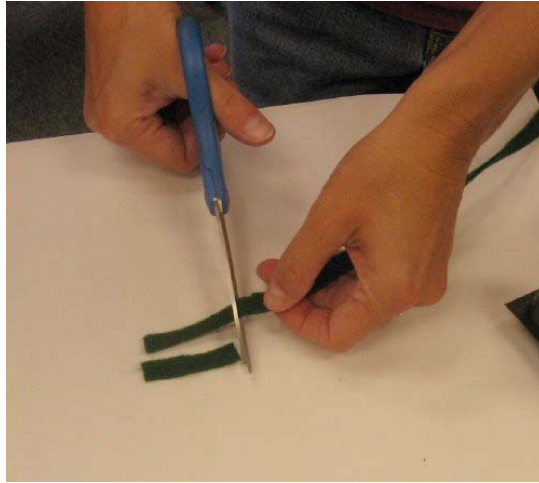
4. Fill each water tray with at least 1 in of water.



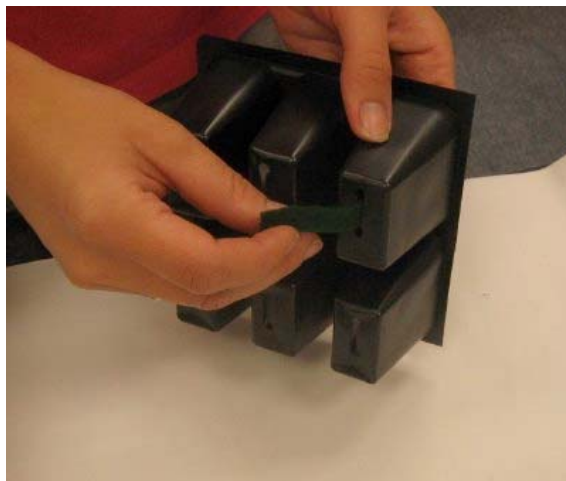
5. Place the large felt wick on the top and put it on the tray, with the "tongue" down in the water.



6. From the green felt, cut a small wick about 1/2 inch wide and about 1 1/2 inches long. One wick is needed for each planting cell, or six wicks per 6-pack.



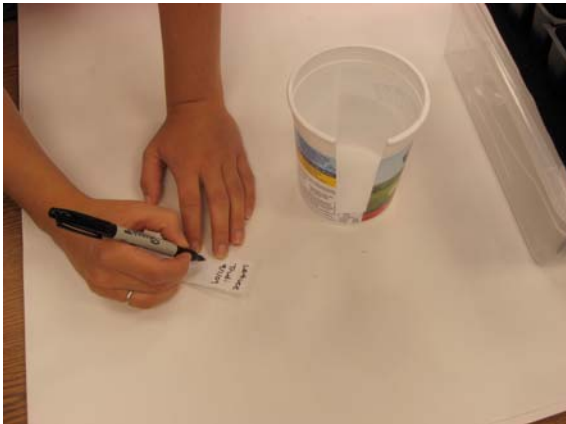
7. Slip the small wick about halfway into the hole in the bottom of each cell.



8. Fill each 6-pack with dampened potting mix (M).



9. Make labels from pieces of a plastic yogurt container.



10. Place the trays under the grow-light assembly. Note: five trays will fit under each of the two lights with two six-packs on each tray. So the setup can light 120 cells!

