

Constructing a Light Box System for Phytoplankton Enrichment / Limitation Assays

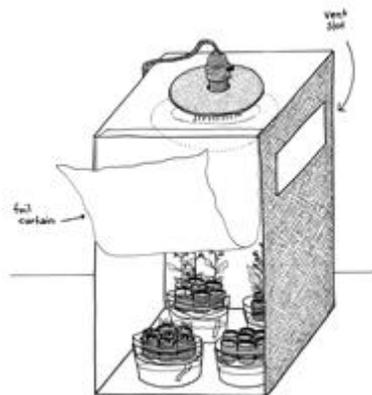
The Light Box System described here is a low-cost alternative to an environmental chamber for growing algae and other plants. This system was originally created by Dr. Paul Williams of the University of Wisconsin to use in growing Fast Plants® in the classroom. It is ideal for small classroom experiments or group projects, and is designed so students and teachers can build their own. These instructions will guide you in building a light box using a cardboard box as the frame and an "energy saver" fluorescent bulb as the light source. Larger, more substantial light boxes can be constructed using plastic crates and larger fluorescent fixtures.

Materials

- One empty "copy paper" box, (e.g., Xerox)
- Aluminum foil (approximately 10-15 feet)
- Electrical cord and light socket
- Plastic plate or lid (5-10 inches in diameter)
- Glue stick
- Clear tape
- Scissors and utility knife
- 30 to 39-watt fluorescent circle light
OR a XX-watt spiral fluorescent light

Construction

1. Apply a thin layer of glue to cardboard box or double-stick tape and attach aluminum foil to cover the *entire* inner surface.

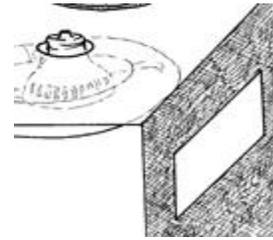


2. Cut a 1-inch diameter hole in the center of the top of the box. This hole will be used to install the light socket and fixture.

Use a plastic plate or lid with the edges trimmed off and a center hole to reinforce the hole in the box.

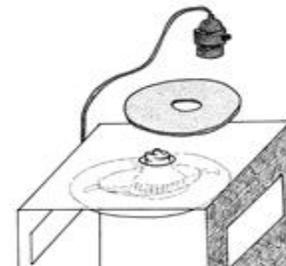


3. Cut 3 vent slots (4 x 14 cm) in the top of sides and back of the box.



4. Insert the light fixture through the hole inside the box.

Place the plastic plate or lid over the light fixture from the top and attach the socket and plug.



5. Tape aluminum foil curtain to top front edge of box.

Strengthen the edges and center of the curtain with clear tape.

Your Light Box System is ready!

