



## **Gardening Under Lights In The Classroom – Tips**

**LIGHT FIXTURE:** 40 watt “cool” fluorescent tubes are sufficient. The GrowLab comes with ‘full spectrum’ tubes which illuminate plants with the visible spectrum of sunlight.

**LIGHT DURATION:** Lights should be on 14 – 16 hours. Use the timer that comes with the unit to regulate the light switch. If you are in a situation in school where the electricity is turned off at night or on weekends, speak to your custodian or principal. There are certain power lines within the building that are always left on for safety purposes.

**HEIGHT OF LIGHT FIXTURE:** Lights should be kept 4 – 6 inches above the pots with newly planted seeds and then above the plant foliage as it emerges. Watch out for burning or singeing of leaves as they grow close to or touch the light bulbs themselves.

**WATERING:** Water when the soil feels dry; do the “finger test”, inserting an index finger about an inch into the soil. Not all plants in the GrowLab may need water at the same time; some plants dry out faster than others depending on where they are located in the tray. Always add water above to the pot until you see water come out the bottom of the pot. Invest in a good watering can, one that has a removable nozzle to provide a shower effect for watering young seedlings; the tapered tip without the nozzle will provide a fine directed stream of water to reach plants further inside the trays. As plants grow the GrowLab tray can become crowded. Be careful to apply water to the soil, not the foliage of plants; leaves will repel a lot of water which may not reach the roots in the pots.

**Weekends or short vacation periods:** Water the plants that are dry thoroughly so that water flows out the bottom. “Flood” the tray with about a quarter to half an inch of water. After a little experience with weekends it will be clear how much the plants actually dry out. Care should be taken not to flood tray too high so that the soil in pots becomes water logged or the tray starts to develop algal growth along the side. Those are signs of over watering/too much standing water in the tray.

**Plastic Tents/Longer vacation periods:** For longer term holidays such as Thanksgiving or Winter Break a plastic sheet or tent can be placed over the GrowLab to maintain humidity and decrease the rate of water loss. Use clean, clear trash bags or the clear plastic sheeting sold at hardware stores for weatherproofing. Before tenting the GrowLab water the plants thoroughly. Try to prevent the plastic from touching the leaves of any of the plants directly as this can sometimes cause the leaves to rot if they become too wet.

**TEMPERATURE:** Lights, even cool fluorescents, provide surprising amounts of heat. In fact, the “cool weather crops” like lettuce can sometimes find it too warm to grow under lights (grow them anyway – there may be a difference in the texture of the leaves. Keep the GrowLab and its plants away from direct contact with the radiators in the classroom if at all possible. If the GrowLab is sitting on a windowsill above a radiator try to create a buffer zone of a shelf in between the radiant heat and the bottom of the plants. A better place for the GrowLab is on top of a bookshelf; it does not require close proximity to the windows and it is more important to keep the plants from the warm dry air rising up from the radiator. Leaf and stem wilt are signs of excessive water loss. Over weekends and holidays the heating system in the school will probably be turned down, although never off completely – the pipes might freeze. That is another reason to keep GrowLab off a windowsill where plants might experience a draft. Tenting as recommended above for extended periods will keep plants in a humid atmosphere which will help to hold the heat. The lights on for 14 – 16 hours will provide a source of heat.

**VENTILATION:** Provide good air flow if possible around the plants. Weather permitting, they can experience a gentle breeze from an open window or mount a small oscillating fan on the GrowLab to keep the air circulating. Good ventilation helps prevent insect and fungal proliferation. On a day to day basis, keeping a tent over the plants is not a good idea because it restricts air flow. Placing the GrowLab on the floor is not recommended. The air circulation is poor and the air temperature will tend to be cooler (warm air rises, cool air falls) which can lead to plant soils retaining water too long resulting in poor plant health and possible root rot.

**HUMIDITY:** Many plants appreciate a humidified atmosphere. A spray bottle is the perfect tool for this; air in classrooms is usually extremely dry as a result of the radiator heat. Misting the leaves once or twice a day may be fine. Care should be taken not to get the leaves too wet or water logged. When seeds are newly planted, the spray mist is the best way to keep the upper half an inch of soil moistened; watering with a stream from a watering can may disturb newly planted seeds, particularly small seeds like lettuce or basil.

**ROTATION:** As plants bend toward the light, turn their pots to even out the exposure the foliage receives. Plants at the edge of the tray under the lights may do this in a pronounced manner. Plants that are on the edges of the tray can be switched with those closer to the center to offer all plants an equal opportunity for light exposure.

**EXPERIMENT:** Try growing a variety of plants in the GrowLab to see which types are favored by the conditions within the light unit. Start a wide variety of seeds, root plant cuttings taken from mature tropical or temperate plants. Collect cacti and succulents and even perhaps insectivorous plants to determine if the artificial light is sufficient for their growing needs; those plants live in very high light environments but still might grow well indoors under lights.