

2-Tier and 3-Tier SunLite® Garden Assembly Instructions

Parts List		2-Tier	3-Tier
		Qty.	Qty.
Frame	S1L Vertical Bars	2	2
	Parts: S1R Vertical Bars	2	2
	S2 Vertical Cleat Bars	2	2
	S3 Bars	4	4
	A2 Bars	3	3
	A3 Pulley Bars	2	3
	A4 Shelf Bars	4	6
Additional	48" Light Fixtures	2	3
	Parts: 4-ft SunLite® Tubes	6	9
	Poly Trays	2	3
Hardware:	Ball Chains	4	6
	Chain Connectors	8	12
	Split Rings, Large	4	6
	Split Rings, Small	4	6
	3/4" Bolts	2	2
	2" Bolts	28	34
	End Plugs	4	4
	Bolt Caps	10	10
	Casters	4	4
	Caster Inserts	4	4



2-Tier Light Garden

Safety Information

- Use the power cord only with a properly grounded electrical outlet or power strip. Do not use with a two-plug outlet or extension cord unless the adapter you use is properly grounded.
- Always turn off the power to the light fixtures when inserting, removing, or adjusting the light tubes.
- If water is spilled near the power source, unplug the unit before you wipe up the water.
- Do not put objects on top of the frame or light fixture.

Care Instructions

- To clean the Light Garden frame, unplug the unit first, then gently wipe the frame with a damp cloth.
- Clean the fluorescent tubes monthly with a soft dry cloth. An accumulation of dust and dirt can dramatically reduce the amount of light your plants receive.

Frame Assembly

With the help of one other person, you can assemble your 2-Tier or 3-Tier Light Garden in less than an hour. The only tools you'll need are a Phillips screwdriver, a hammer or rubber mallet, and pliers.

Step 1. Place all parts on a flat, clean surface. *All frame parts are labeled with a letter and number. See corresponding parts list.* Use a hammer or rubber mallet to tap an End Plug into the tops of each S1R (right) and S1L (left) Vertical Bar. The top of the S1R and S1L Bars are determined by finding the bolt holes that are only 1" from the end of each bar. The bottom of the bars have bolt holes that are 2" from the end.

Step 2. Take an S2 Vertical Cleat Bar and find the nut insert located inside the end (Fig 1a or 1b). Using the shorter $\frac{3}{4}$ " bolt, connect an S3 Bar to the top of the S2 Vertical Cleat Bar by screwing the bolt through the S3 bar and into the nut insert (Fig. 1a or 1b). *You may need to loosen bolts as you go through the rest of the assembly, so only partially tighten them for now.*

Step 3. Using a 2" bolt, attach an S3 Bar to the bottom of the S2 Vertical Cleat Bar (Fig. 1a or 1b)

Step 4. Connect the S1 Vertical Bars to the ends of both S3 Bars (Fig 1a or 1b). You have just finished the first Side Frame.

Step 5. Repeat Steps 2 through 4 to assemble the second side frame, then firmly tighten all bolts on both frames, making sure the bars are flush with one another. Next, position the Side Frames 4 feet apart, with the Cleats on each Side Frame facing out in opposite directions (Fig. 2).

Step 6. Attach the ends of two A2 Bars to the top of the S1R and S1L Vertical Bars (Fig. 2). *Only partially tighten the bolts.*

Step 7. Connect the ends of an A3 Pulley Bar to the middle of the top S3 Bars (Fig. 2). The open side of the Pulley Bar should face toward the ground. Insert the bolt through the predrilled hole above each Cleat, then screw the bolt into the end of the A3 Pulley Bar on both sides (Fig. 2). Connect the remaining Pulley Bars to the S2 Vertical Cleat Bars at each tier.
2-Tier Light Garden: two Pulley Crossbars.
3-Tier Light Garden: three Pulley Crossbars.

Step 8. Connect an A2 Bar to the middle of the bottom S3 Bars (Fig. 2).

Step 9. Connect the A4 Shelf Bars to the S1 Vertical Bars at each tier (Fig 2). Each A4 Shelf Bar is box-shaped with a thin flange. Make sure the flat side of the flange is flush with the outside of the S1 Bars on each side and pointing toward the top of the unit. The box-shaped portion of the Shelf Bars are positioned inside to act as shelves for the Poly Trays (Fig. 3a or 3b).

2-Tier Light Garden: Four A4 Shelf Bars.

3-Tier Light Garden: Six A4 Shelf Bars.

Step 10. You may now tighten all bolts on the frame, holding the bars in place as you tighten. With the frame upright, make sure all outside edges of the bars are flush and secure. Adjust the bars as necessary.



Assembly Tip: Important! Make sure the bolt enters the nut insert straight. If the bolt does not enter straight, check to see if the nut insert is off center.

If the nut insert is off center, use a hammer and a bolt to tap the sides of the nut insert until it is straight.

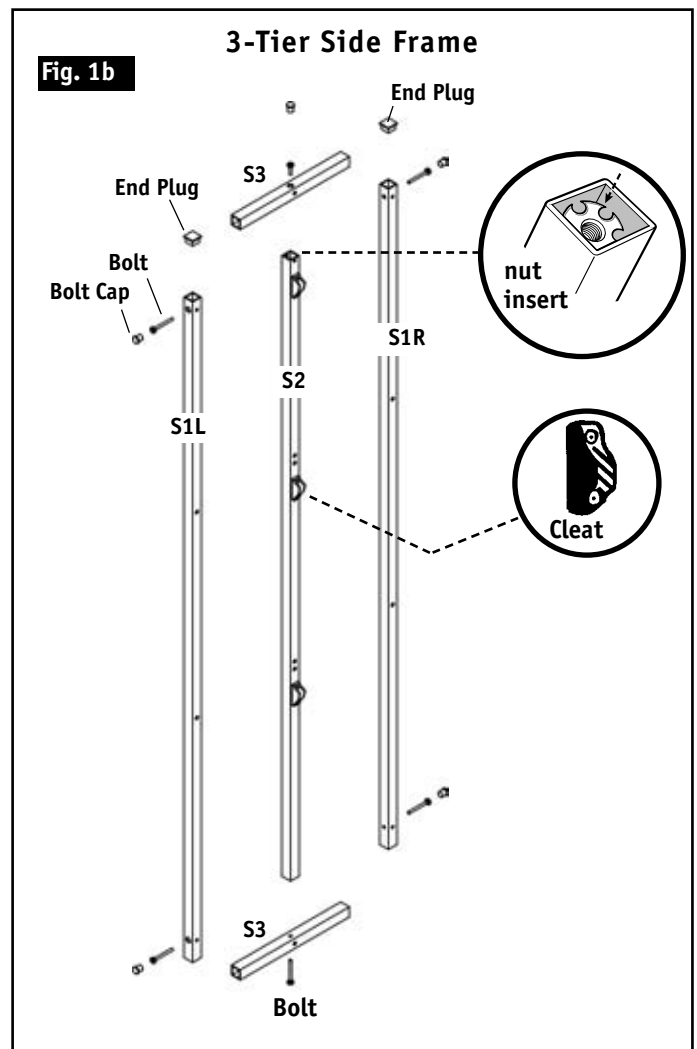
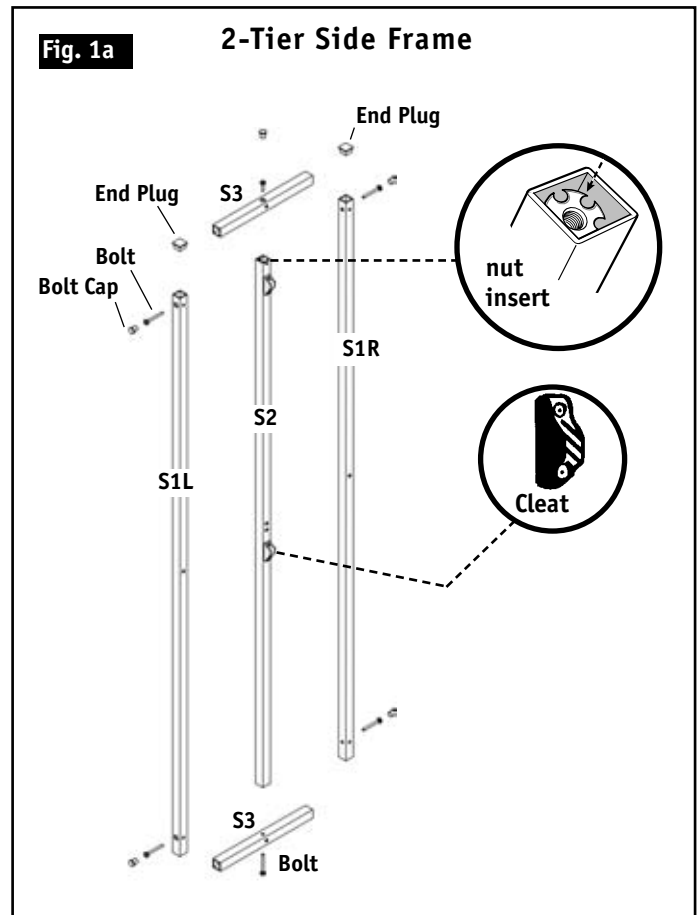


Fig. 2

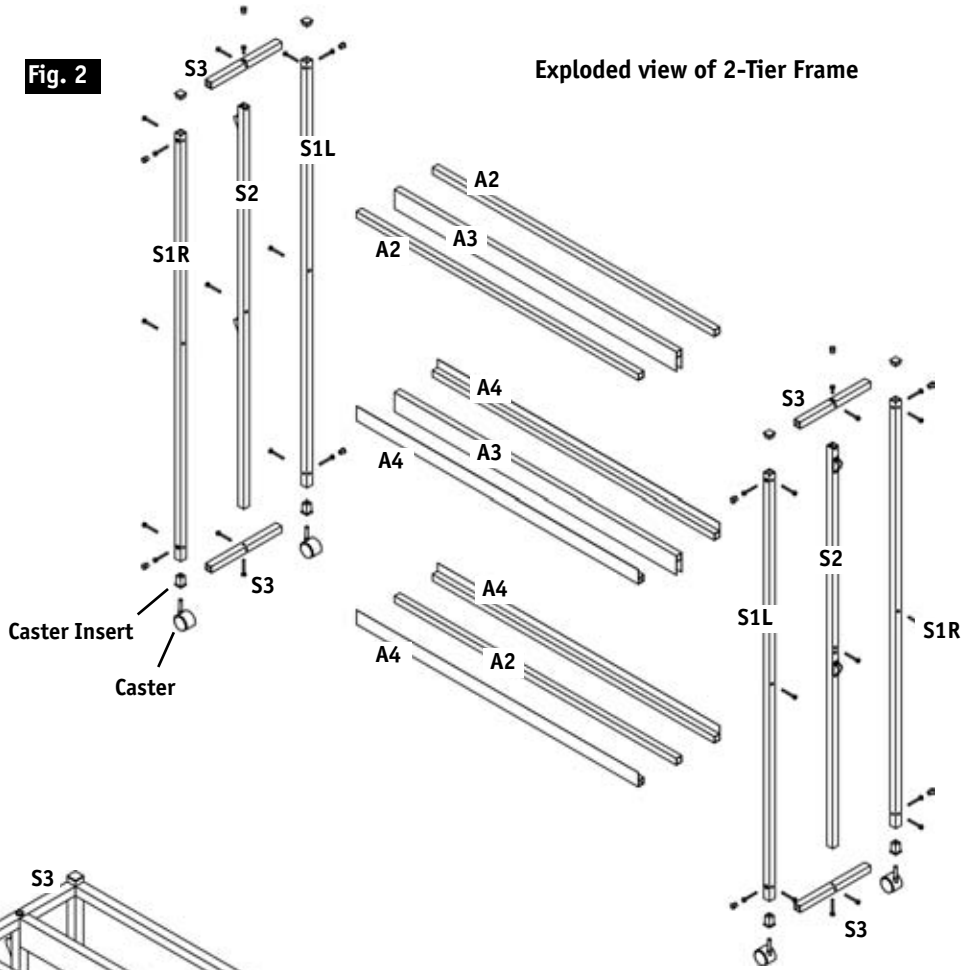


Fig.3a

Box side of Shelf Bar faces inside and the flange is positioned up.

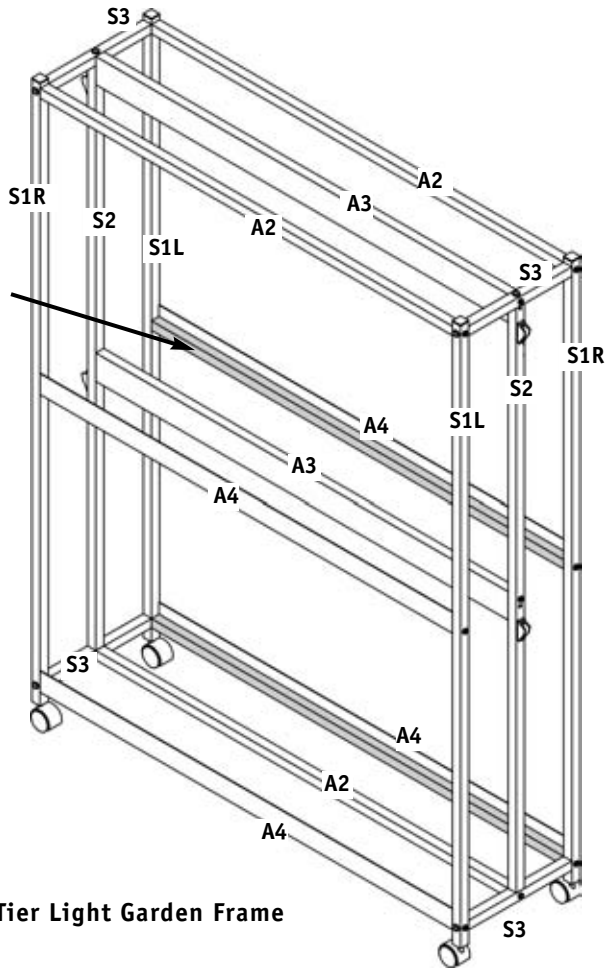
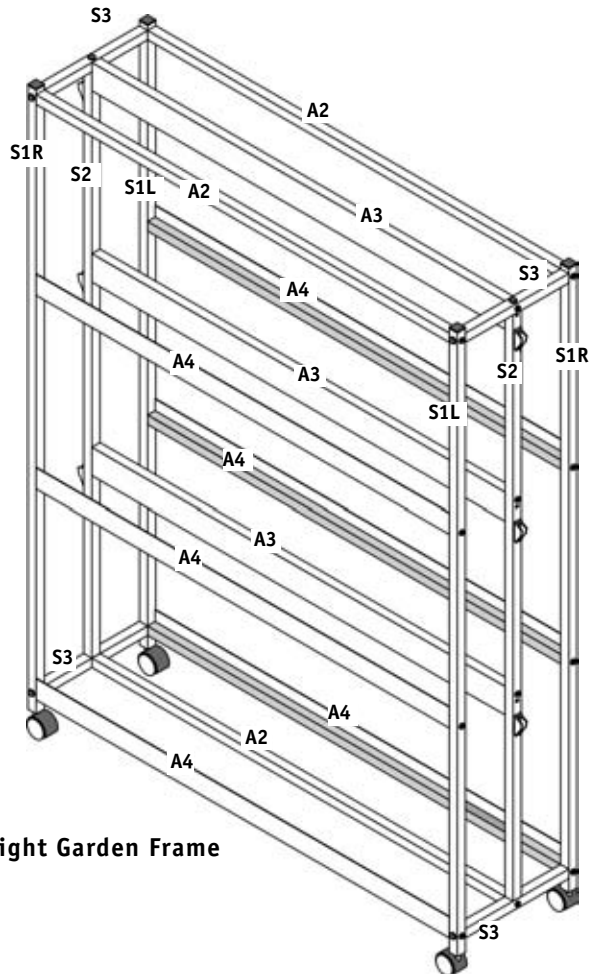


Fig.3b



Step 11. Gently lay the entire frame on its side. Place a Caster Insert into the bottom of all four S1 Vertical Bars (Fig. 2). Firmly push a Caster into each insert.

Step 12. Stand the unit upright, then place a Poly Tray on the A4 Shelf Crossbars at each level. Rest a Spacer Board (not shown) to one side of each Poly Tray. Cover all the bolt holes with a Bolt Cap. You are now finished assembling the frame.

Ball Chain Assembly

Step 13. Attach a Chain Connector to all the Split Rings (Fig. 4). If necessary, use pliers to pry open the Split Rings. (Needlenose pliers work best.)

Step 14. Connect a Ball Chain to each Chain Connector on the Large Split Rings only. The last ball of each chain will “snap” onto the connector (Fig. 4).

Step 15. Take the loose end of one Ball Chain and thread it through the top guide hole above the Cleat (Fig. 5). Direct the loose end of the chain over the lip of the pulley inside the A3 Pulley Bar. ***If this proves difficult, attach a twist-tie or wire to the end of the chain to help lead the chain over the pulley.*** Repeat this step to install the Ball Chains on both sides and at each tier of the frame. Attach a Chain Connector and Small Split Ring to the end of each Ball Chain (Fig. 5).

Step 16. Place a Light Fixture, right side up, on each Poly Tray. Orient all power cords to one side of the frame.

Step 17. Find the two slots with the “T”-shaped tabs in the top of each Light Fixture. Hook the hanging Small Split Rings around the “T”-shaped tabs (Fig. 6).

2-Tier Light Garden: two Light Fixtures installed.
3-Tier Light Garden: three Light Fixtures installed.

Adjusting the Fixtures

Step 18. Check the Ball Chains to make sure they are correctly positioned and move freely over the pulleys.

Step 19. Carefully adjust the height of the Light Fixture one side at a time. Pull the chain out of the Guide Hole horizontally. This will allow you to adjust the height with the least amount of resistance and protect the Guide Holes from abrasion (Fig. 7).

Step 20. After you’ve raised the Light Fixture to the desired height, bring the chain down to meet the Cleat. “Lock” the chain into place by allowing it to wedge up into the

Fig. 4

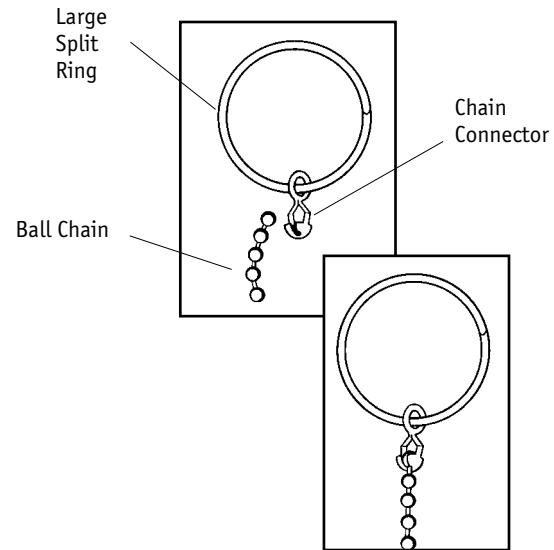
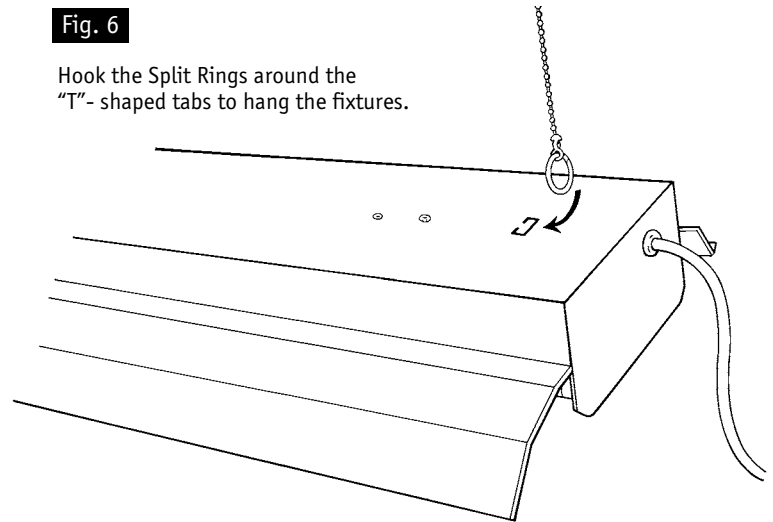


Fig. 6

Hook the Split Rings around the “T”-shaped tabs to hang the fixtures.



Slide the pins down the tube sockets then rotate the dimple guide is positioned.

Fig. 8

Turn Fixture upside down to expose tube sockets.

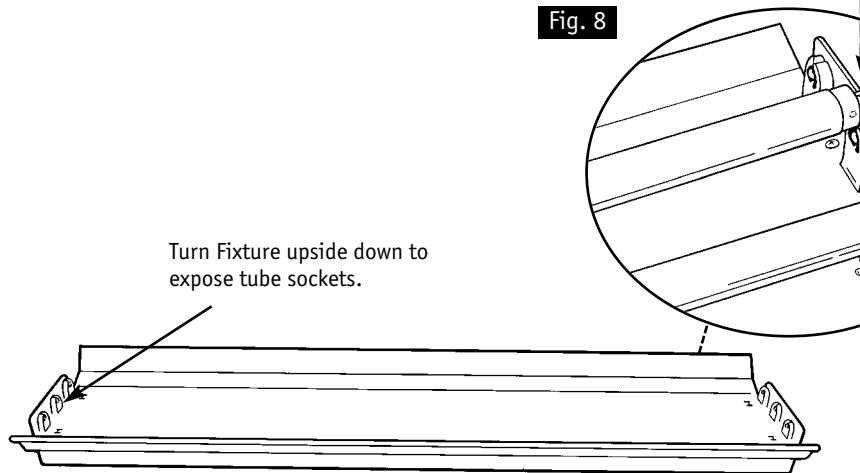
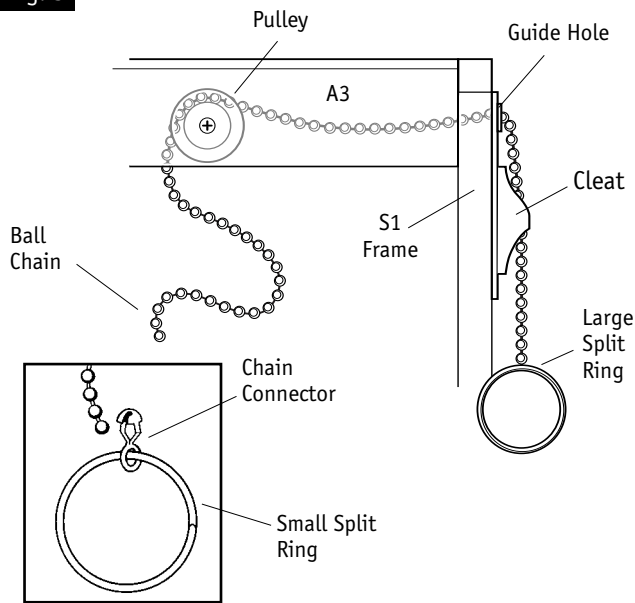


Fig. 5



grooves of the Cleat, then release the chain (Fig. 7). To release the chain, pull it down and out of the Cleat, then adjust the height as necessary by pulling the chain in or out of the Guide Hole in a horizontal direction. **For greater stability, you may support the fixture or hold onto the frame with your other hand as you work the Ball Chain.**

Installing the Light Tubes

Important notes on light tube adjustment:

- Always turn off the power to the Light Fixtures when inserting or removing Light Tubes. If you insert a Light Tube when the power is on, it may trigger an auto safety mechanism, resulting in the light shutting off. If this happens, turn off the Fixture, make sure the Light Tubes are fully seated in the Tube sockets, wait for thirty (30) seconds, then turn the Fixture on again. This will reset the Light Fixture so the lights operate normally.

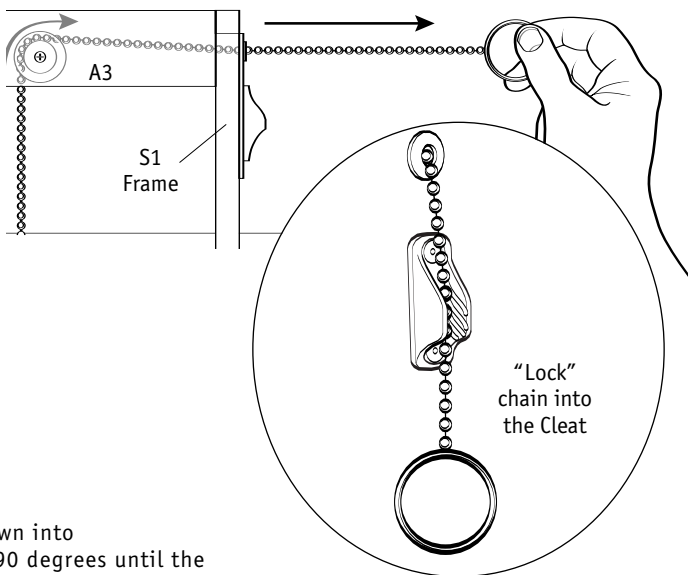
- For best results, attach a timer to your lights to control the length of time the lights are on and to be sure your plants get adequate light — even if you're away.

- For on/off manual control of your lights, use the switch located on each Light Fixture.

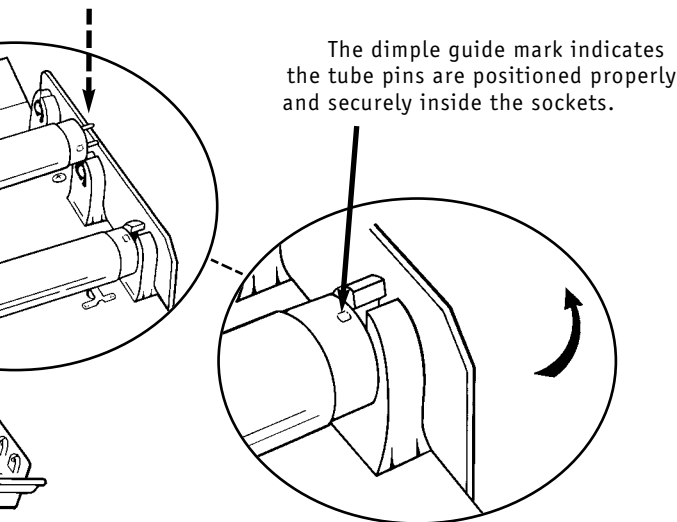
Step 21. Unhook the Chains from the Light Fixtures and place each Fixture upside down on a Poly Tray. This will reveal the light sockets (Fig. 8). Then, take a Light Tube and find two pins on each end of the Tube. Slide the pins into the tube sockets, then rotate the Tube 90 degrees until it "locks" into place, revealing the dimple guide mark on the end of the Tube (Fig. 8). This guide mark indicates proper placement of the Light Tubes inside the sockets.

Fig. 7

Pull chain in a horizontal direction.



Slide pins down into the sockets and rotate 90 degrees until the dimple is positioned at top.



2-Tier Light Garden

Installing the Tubes correctly will ensure they produce the optimum amount of light.

Install three Light Tubes per Fixture.

Step 22. Turn the Light Fixtures upright and reconnect them to the Ball Chains. Guide the power cords through the bars and down one side of the frame, making sure they don't interfere with your ability to raise and lower the lights.

Growing With Your Light Garden

By controlling the intensity and duration of light, you can grow healthier and more beautiful plants than ever before. The proximity of the light fixtures to your plants is very important because it affects light intensity. The closer the light, the greater the intensity. Plants that normally grow outdoors in full sun require the highest light intensity. This includes most flower and vegetable plants, orchids, gardenias and citrus. For these plants, light tubes should be very close—no more than 3 inches away from the foliage. This need for intense light holds true for seedlings too (your vegetable and flower seedlings will grow tall and spindly if they are too far away from the lights).

Most common flowering houseplants do not require as much light intensity. African violets and begonias will be quite happy 10 to 12 inches away from the light tubes. Nonflowering tropical plants such as philodendrons and ivies can be placed between 20 and 36 inches from the light (see chart).

If you're growing different types of plants under one light fixture, you may need to vary the height of the pots. Place light-loving plants on an upside down flower pot or other platform to get them closer to the light. Your plants will also receive the best light intensity if they are placed under the middle section of the light fixtures, rather than the ends.

As your plants grow, raise the light fixture to maintain the appropriate distance between the top of the plant and the light tubes.

Leaving the Lights On

No matter what types of plants you are growing indoors, you should always give them time to "sleep". When it's dark, plants respire, which is an important part of their growth process. The balance of rest time to active growth time affects many biological processes, including growth rate and the setting of buds and fruit.

Like people, plants differ in the amount of rest they require. They are categorized according to their preferred day length: short-day, long-day, or day-neutral.

Short-day plants, such as chrysanthemums, kalanchoe, azaleas and begonias will thrive on 12 hours per day. In fact, these plants usually require a series of even shorter days (less than 12 hours) before they will set buds and flower.

Long-day plants (vegetables and most flowers) require at least 14 to 18 hours of light each day. Day-neutral plants, which include non-flowering foliage plants, as well as geraniums, coleus, and African violets are usually satisfied with 8 to 12 hours of light all year-round.

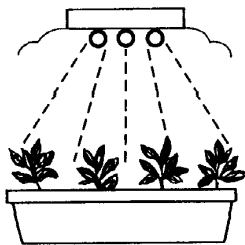
Using automatic timers is the best way to ensure your plants receive the right duration of light each day. Group your plants under each light fixture according to what day length they prefer and your indoor gardening adventures will be easier and much more rewarding.

Recommended Distance Between Houseplants and SunLite Tubes*

Plant	Approximate Distance (inches)
African violet	10"-12"
Azalea	10"-12"
Cactus	10"-12"
Cineraria	10"-12"
Caladium	18"-20"
Camellia	10"-12"
Chlorophytum (spider plant)	18"-20"
Chrysanthemum	3"-4"
Citrus	3"-4"
Cyclamen	10"-12"
Dendrobium	3"-4"
Gardenia	3"-4"
Geranium	3"-4"
Gloxinia	10"-12"
Herbs (culinary)	3"-4"
Hibiscus	3"-4"
Jasmine	10"-12"
Kalanchoe	3"-4"
Oncidium orchid	3"-4"
Peperomia	18"-20"
Phaelenopsis orchid	3"-4"
Philodendron	20"-36"
Sansivieria (snake plant)	20"-36"
Schefflera (umbrella plant)	18"-20"
Scindapsus (pothos plant)	18"-20"
Streptocarpus	6"-8"
Succulents	10"-12"

* (based on a 2-bulb fixture.)

Some plants need higher light intensity than others



For most seedlings, keep plants no more than 3 inches from the lights.

Water and Humidity

Seedlings and other plants that are placed close to warm fluorescent lights will require watering daily or every other day to keep the soil from drying out. If you're using our Accelerated Propagation System (APS), check the water level in the reservoir twice a week.

Your houseplants may require less water if they are placed further away from the light fixtures (room temperatures can also affect how frequently you have to water). Generally, water houseplants once or twice a week, allowing the soil to dry between waterings.

Many plants, including most orchids, require high humidity as well as adequate water. You'll need to pay more attention to this when they're growing under lights. To create a humid environment, fill a shallow tray with gravel or marbles, set the orchid pot on top and then cover the gravel with water. The water will evaporate around the pots to create a more humid environment. You may need to experiment for the first few weeks to determine a good watering schedule.

Getting the Most From Your Lights

- When the ends of a fluorescent tube darken, it means that the light is aging. Light output from an old tube can be less than half that of a new tube. Replace the light tubes when this occurs.
- An accumulation of dust and dirt can dramatically reduce the amount of light your plants receive. Be sure to clean your fluorescent tubes monthly with a soft dry cloth.
- T-8, 32-watt fluorescent tubes can provide many years of use (up to 24,000 hours); however, when it comes time to dispose of light tubes, please do so responsibly. Dispose of light tubes at your nearest waste recycling center.

Guaranteed Easy-to-Grow Plants

You can grow almost any plant under lights if temperature and humidity are right! Garden newcomers will have good success with easy-to-grow seeds like zinnias, marigolds, tomatoes, and cucumbers. Easy-care plants include: begonias, ferns, geraniums, oxalis, jade, philodendrons, and all types of succulents. If you like the cactus members of the succulent family, they're some of the easiest of all!

*For step-by-step instructions and expert tips,
visit our Seedstarting Department at www.gardeners.com*

Ordering Information

SunLite® Gardens

- #37-110 SunLite Floor Model Garden
- #37-122 SunLite Tabletop Garden
- #37-121 SunLite 2-Tier Garden
- #37-119 SunLite 3-Tier Garden
- #37-874 Garden Starter System
- #37-817 Tabletop Grow Light

Accessories

- #35-651 Power Strip and Timer
- #33-867 Soil Heating Cable
- #35-657 Deep-Root Seedstarting System

Replacement Lighting

- #34-745 4-ft SunLite Bulbs, set of 3

To place an order, please call us or visit our web site for current prices.



128 Intervale Road, Burlington, Vermont 05401

PHONE ORDERS: 1-800-427-3363 CUSTOMER SERVICE: 1-800-876-5520

E-MAIL: info@gardeners.com WEB: www.gardeners.com