



# LetPot SE Instructions

Any questions, contact Steve at [steve@keepitwatered.com](mailto:steve@keepitwatered.com) or call/text 574-366-0939

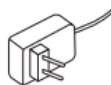
## LetPot SE Assembly

1. Remove the contents from the box and take off all packaging tape. This includes tape that's around the pump.
2. You should have a plug adapter, sponges, baskets, germination covers, nutrient A and nutrient B, water indicator, buoy protection cover, support rods, shade covers, tags, light-blocking stickers, and lights.

### Teaching Points\*:

**(\*Note: You'll find Teaching Points throughout these instructions; these suggestions are included as a guide for class discussion and application.)**

- Divide up your class into groups and open the boxes.
- As you assemble the systems with your students, discuss the different parts of the systems and how they might be used to grow plants.



Plug Adapter



Sponge x12



Basket Kit x12



Germination Cover x12



A Solid Nutrient



B Solid Nutrient



Water Indicator



Buoy Protection Cover  
(Check P3-Step2)



Support Rod x12



Shade Cover x6

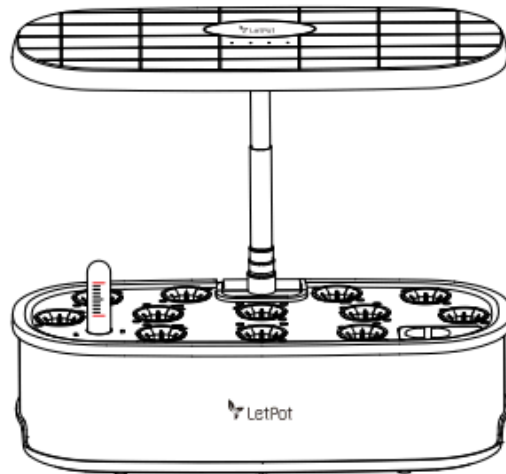
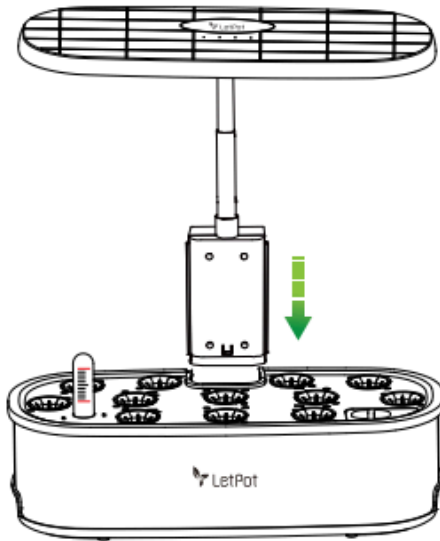


Tag x6

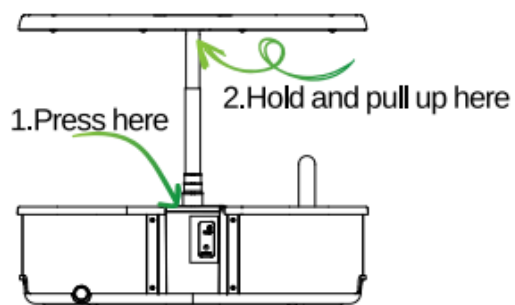


Light-blocking Sticker x12

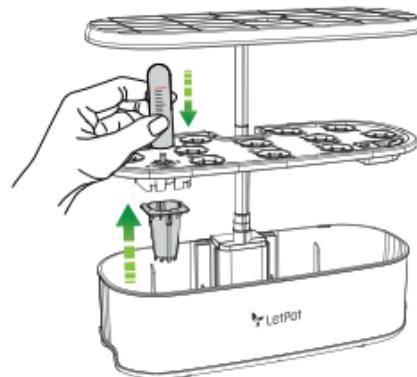
3. Inserting the Lights and the Water Level Float:



- 1** Press the bottom of the telescopic rod and the supporting part of the light panel to pull up and push down the lightpanel.



- 2** Take out the components inside the water tank and install the water level float as the picture show.



## Planting Seeds

- For lettuces and most herbs: Place 6-8 seeds in each sponge hole. Use all the holes. (If you have an EC Meter [see page 4], keep one hole covered to use with the meter.)
- For fruiting plants like tomatoes and peppers: Place 1 seed in each sponge hole. Plant only 5 sponges, spreading them out in the holes on the tray. When the plants reach 3-inches tall, remove the two smallest plants. Spread the remaining plants out over the system.
- Cover unused ports with shade covers.
- Place sponges into the baskets and the baskets into the growing tray.
- Pour a small amount of water in each hole to wet the seeds. (A water bottle sprayer works best.)
- Put a sticker on each basket to keep algae from growing on the sponges. Make sure the middle circle of the sticker has been removed, creating a hole for the seedling to grow through. You'll leave these stickers on for the full life of the plant.
- Place the plastic domes on top of the baskets.

### Teaching Points:

Have students help with planting, labeling the plants, water fill-up, adding nutrient, etc.

- Talk about how outside plants get water from rain, light from the sun, and nutrient from the soil. (*Plants don't need soil. They need the nutrient that's in the soil.*)
- Introduce the idea of growing without soil compared to growing in soil. Soil can have different qualities that can affect plant growth. Water can be different as well, but can have less variants than soil.

## Mix up plant food (nutrient)

- Fill water tank with unsoftened water. Do NOT use distilled water.
- Measure the plant food into the clear caps on plant food bottles.
  - For lettuces, pour 10 ml of plant food A and 10 ml of plant food B into the tank.
  - For fruiting plants like tomatoes and peppers pour 20 ml of plant food A and 20 ml of plant food B into the tank.

### Teaching Points:

- Does growing in soil or growing in water have more problems with pests? Why?
- Ask students if they know what purpose the pump has. (*Pump runs intermittently to keep the water moving.*)
- Talk about the purpose of the lights and why veggies need more light than regular houseplants. (*Veggies need more nutrient, absorb more nutrient through photosynthesis than houseplants do.*)

### EC Meter

- The EC meter is used to test the nutrient value in the water.
  - Lettuce should have a value of at least 800
  - Tomatoes/Peppers should have a value of at least 2,000.
  - As the plants grow and water is added, the EC reading may be low. If this happens, add 10-20 ml each of Plant Food A and Plant Food B. Wait until the next day to re-test and add more nutrient if needed.
- As tomatoes and peppers grow ...
  - Use the white stakes provided to hold up the tomatoes and peppers as needed.
  - Pollinate once the plants begin to flower; do this by giving the plants a little shake each day.
  - When you start to see blossoms, switch the light mode to Fruit/Flower mode. (The indicator light will turn off and you won't see blue LED lights.)

### Light Settings

#### Manual Mode

- Press and hold the on/off button at the top to turn the LetPot on. The lights will default to 18 hours on, 8 hours off.
- Set lights to Veggie/Herb mode (Indicator light on top of light panel is on). This will stay constant throughout the growing cycle. (You'll see blue LED lights)
- Keep the light panel an inch above the plants and raise it as the plants grow.

### Teaching Points:

- How did someone engineer this to work?
- What skills would the person need in order to invent it?
- How would it be manufactured?

*(Possible answers: Parts could be 3-D printed or die-cast molded, then put together on an assembly line. A company developed the packaging. A marketing company developed the layout of the graphics on the box. Someone created instructions. A marketing department developed a way for people to learn about the system and purchase it. The system was sent by a shipping company to your school.)*

### The LetPot App

See instructions that came with the LetPot to install and use the app. The LetPot App makes it easier to adjust settings for light modes, brightness, and pump timer, but is **not** necessary to run the LetPot.

**Do NOT use a hotspot on your phone to connect to the LetPot.** When you leave for the evening with your phone, the LetPot won't be able to communicate with the network which will cause the LetPot to turn off and not turn back on.

### As You Grow

- For lettuces, add 10 ml each of Plant Food A and 10 ml of Plant Food B when you fill up the water tank.
- For fruiting plants like tomatoes and peppers, add 20 ml each of Plant Food A and 20 ml of Plant Food B when you fill up the water tank.

### Teaching Points as You Grow:

#### **Socioeconomic:**

- Ask students if growing your own food could help with world hunger.
- Can someone grow their own food at home?
- How many systems would it take to feed a family of 5?

***Adaptability and survivability in environment:***

- How do we create the right conditions to grow food?
- How are plants adapting as they grow?
- If you have two systems, some plants in one LetPot might lean towards the other LetPot for more light as they grow. What would happen to the plants if we turn the lights off on one system and leave the other system's light on?
- If growing at home, would pets, such as cats, make it more difficult? Any other difficulties that might be at home versus at school?

***History/Agriculture:***

- Compare hydroponic gardening to how we grew plants in the early 1900s.
  - What type of plant will grow best in a hydroponic system?
  - Can root crops like potatoes, or large crops like corn, grow?

***Maintenance:***

- When servicing the systems, talk about how water pollution makes it more difficult for plants to grow.
  - What would happen if someone put oil or trash in the system?

***Science:***

- Electrical circuits needed to run the system.
- The timing of the lights.

***Unit of Measurement:***

- Have students measure the length and width of the leaves, stems, and other parts of the plants as they grow. Use tables to convert these measurements to meters, centimeters, etc.
- Talk about how the parts of a plant help it to grow.
- Have students hypothesize how tall the plants are, then see who's the closest.

## Weekly Plan

**Week 1:** Assemble your LetPot and plant seeds.

- Check daily for sprouts and remove the plastic dome if sprouted. (Leave on the light blocking stickers)

**Week 2:** Add water as needed.

- Use the EC meter to test nutrient value:
  - Lettuce should have a value of at least 800.
  - Fruiting plants like peppers and tomato should have a value of at least 2,000.
  - If EC reading is low, add 10-20 ml of Plant Food A and Plant Food B. Wait until the next day to re-test, and add more nutrient if needed.

**Week 3:** Record growth. Add water. Use EC Meter to check nutrient value and add Plant Food as needed.

**Week 4:** Record growth. Add water. Use EC Meter to check nutrient value and add Plant Food as needed.

**Week 5:** Record growth. Add water. Use EC Meter to check nutrient value and add Plant Food as needed.

- Use the stakes to hold up the tomatoes and peppers as needed.

**Week 6:** Record growth. Add water. Use EC Meter to check nutrient value and add Plant Food as needed.

- By week 6 lettuce might be ready to harvest and eat. If it is, cut the lettuce, clean out the LetPot, and replant.

**Week 7:** If growing fruiting veggies, continue recording growth and adding nutrient until the veggies ripen and can be eaten.

Replacement supplies can be purchased at [www.keepitwatered.com/letpot](http://www.keepitwatered.com/letpot).

To order tax exempt, email [steve@keepitwatered.com](mailto:steve@keepitwatered.com).

## Growth Tracking Chart

What Planted: \_\_\_\_\_

Date Planted: \_\_\_\_\_

Quantity Planted: \_\_\_\_\_

Number of Ports: \_\_\_\_\_

Amount of Water: \_\_\_\_\_

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**Today's Date:** \_\_\_\_\_

*Water Added/Date:* \_\_\_\_\_

*Date Nutrient Added:* \_\_\_\_\_

*Amt Nutrient Added:* \_\_\_\_\_

*EC Meter Reading:* \_\_\_\_\_

*Height of Plants:* \_\_\_\_\_

*Avg Rate of Growth:* \_\_\_\_\_

*Any System Adjustments (Lighting):* \_\_\_\_\_

*Pollinated Y or N? If Y, explain method:* \_\_\_\_\_

*Detailed General Observations:* \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_