

GROWING TRANSPLANTS/STARTING SEEDS INDOORS

Growing transplants allows you to start seeds early indoors in order to get a jumpstart on the season. Indoors, you are able to germinate seeds and get them started growing until it's the appropriate time to plant them outdoors. In Michigan, this is especially helpful for hot weather crops, like tomatoes, peppers, and eggplants, which take a long time to mature. Learning to grow your own transplants also allows you to grow different varieties that may not be readily available to you to purchase as transplants.



Light and Stand



Timer



Heat Mat

BASICS OF SEED STARTING:

- **HEAT:** Seeds need a warm place to germinate. The top of the refrigerator, near a radiator, or ideally on a heat mat. 'Hot crops' like tomatoes, peppers, and melons really benefit from this sort of heat, while lettuce and other leafy greens can do with or without additional heat.
- **LIGHT:** Your transplants will need approximately 12-16 hours of light a day. A shop light positioned directly above the plants is the best way to provide the amount of light needed. An alternative is a sunny south-facing window, although it's often tricky to get enough direct sunlight, especially during the winter months. A standard shop light from the hardware store works great. There are also a lot of great LED light options. Grow lights work great but tend to be more expensive. You can make a DIY stand with PVC similar to the photo left or use bricks at either end to prop up the light.
- **WHAT TO PLANT:** Decide what you want to grow, and how much. Typically, long-season crops (60+ days) are most commonly started indoors. As a general rule, root crops like carrots or radishes should not be started as transplants as they do not like their roots disturbed and will not transplant well. When thinking about how many to grow, remember that each seed becomes one plant. When it is transplanted into the garden it will take up much more space!
- **WHEN TO PLANT:** When starting seeds indoors, you can calculate when to get started by working backward from the last frost date (May 10th in Detroit). Seed packets will provide information on how many weeks before the last frost to plant seeds. For example, kale can be transplanted outside four weeks before the last frost and it takes about four weeks for transplants to be ready to plant outside. Since the last frost date is May 10, start them 8 weeks prior (March 15th).

OTHER MATERIALS

- **SOIL/POTTING MIX:** Seeds are generally started in a "soil-less" mix. Look for something with peat, perlite and compost in it or make your own mix with 25% compost, 65% peat and 10% perlite. Pre-mixed soils are convenient but often have chemical fertilizers. Check the bag for details if you are concerned or trying to use organic methods. Sunshine mix is a good option.
- **COMPOST:** Compost is essential for providing nutrients to your growing medium.
- **PLANT LABELS-** Popsicle sticks (or cut up old plastic blinds or containers) can be used for labeling crops with planting date and varieties.
- **FAN-** Used to provide air circulation.
- **LIGHT TIMER-** A plug in timer like those used for Christmas lights to automatically turn the lights (and fan) on and off.
- **CONTAINERS** - including egg cartons, milk cartons cut lengthwise, styrofoam coffee cups, and homemade paper pots. Most anything will work if it has a hole for drainage. Make sure you paying attention to where your seedlings are draining!
- **WATERING CAN** - This could be a plastic water bottle with holes in top. Your goal is to gently water without washing the seeds away.



This Resource Guide is prepared by Keep Growing Detroit for participants in the Garden Resource Program. For more info please contact 313-656-4769 (GROW), info@keepgrowingdetroit.org or visit our website at WWW.KEEPGROWINGDETROIT.COM. Like us on Facebook and follow us on Instagram.

HOW TO START SEEDS

PRICKING OUT/TRANSPLANTING METHOD - This method is ideal when planning for more than a dozen plants. Estimate how many plants you want to grow out and add about 30% to compensate for poor germination and weak looking plants. For example if you want 30 plants start approximately 39 seeds. Plant seeds in a shallow flat or larger pot spacing them right next to each other. Be sure to plant them at the proper depth as discussed above. Place seeded container on warm surface or heat mat and keep evenly moist until the seeds germinate. After they are germinated remove them from the heat mat and put them under lights as outlined below. Once most of them are healthy and have 2-3 'true' leaves on them, you can gently dig out a section of them, and gently pull the roots apart, holding a leaf but not the fragile stem, and then plant them in their own containers. First dibble a hole in the container with a pencil or chop stick then use the pencil to push the roots into the bottom of the hole then gently tamp the soil around the stem.

PLANTING DIRECTLY INTO CONTAINERS METHOD- This method is ideal when you are starting just a few plants. Plant at least 2 seeds in each cell or container. Place seeded container on warm surface or heat mat and keep evenly moist until the seeds germinate. This method can be difficult for very small seeds. After the seeds have germinated cut or remove all but one of the plants per cell/container.

Maintenance and Care

LIGHT Place germinated seeds under shop lights and adjust the height of the to be approximately an in from the tops of the leaves. Plug the light into the timer and set it to run for 12 hours on 12 hours off. Adjust the light higher as the plants grow taller always keeping the light within 1 inch of them. NOTE: After plants get to about 6 inches they will need sunlight to grow to maturity the shoplight doesn't provide enough light for the plants to grow to maturity.

WATERING - Check your plants daily to see if they need to be watered. Water them gently when they are young using a watering can or a plastic water bottle with holes drilled in the cap. Be sure to water them thoroughly to avoid dry pockets which are detrimental to the plants. Allow the soil to dry out some between watering but don't let the soil dry out completely.

AIR CIRCULATION- Set up a fan near the transplants if available. Point it so the breeze is going near or above the transplants, but not directly on them so you don't dry them out.

LABELING- Always label plantings right when you plant them to avoid confusion when trying to identify them later on.

HARDENING OFF - Once plants are ready to be planted outdoors (roughly 4-6 inches tall) they need to be hardened off before planting. Put them outside for a few hours the first day and gradually increase their time outside for 4-5 days to help them adjust.

APPROXIMATE NUMBER OF WEEKS FROM SEED TO MATURE TRANSPLANT- Use the timeline below for an example of some varieties. Some varieties may vary from this list. Determine readiness for planting by how the plant looks and the soils conditions outside. Are they 4-6 inches yet? Has the soil thawed and temps are consistently above 60F?

3 weeks: squash, melons, cucumbers

5 weeks: lettuce, spinach, kale, collards, broccoli, cabbage, cauliflower, Brussels sprouts

8 weeks: eggplant, sweet pepper, tomatoes

9 weeks: hot peppers

11 weeks: onions

A NOTE ON GERMINATION

Germination is the process of a plant emerging from a seed. Because germination rates may vary, it is usually recommended that you plant a few more seeds than you anticipate you will need. You can always remove additional plants you don't need, but with some plants taking up to a week to germinate it's better to be on safe side and plant a few extra. When planting seed pay attention to planting depth on the packet or instructions. As a general rule plant seeds 2x as deep as the seed is wide.

