



Garden Lesson 2: Transplanting Seedlings

SCIENCE Question, Observe, Monitor

MATHEMATICS Collect Data, Model

LANGUAGE ARTS Comprehend, Read, Write

VISUAL ARTS Design, Create, Draw, Colour

2.1 INTRODUCTION

When a seed begins to sprout, it grows tiny "seed leaves" (cotyledons) which will eventually wither and fall off to make room for the "true" or adult leaves. Once a seedling has grown 3 or 4 true leaves, which is usually about 2 weeks after the sprout emerges, we can predict that the roots will soon need more space to grow and it is time to transplant.

Lesson 2 will guide young gardeners through the process of transplanting seedlings into larger pots to make room for growing roots, as well as how to gently transition seedlings to living outside. First, gardeners will learn how to create a Sun Map to determine the best location for seedlings to grow, whether indoors or outdoors.

2.2 CREATE A SUN MAP

- In the garden journal, write "Garden Sun Map" at the top of the next blank page. The following activity will be completed on this page.
- For now, these plants are too small and delicate to go outside. We will start by choosing an indoor space for the seedlings to grow. Plants need a lot of sun, so in order to pick a good spot for them to live indoors, we will create a Sun Map.
- Observe this space for an entire day. Make note of:
 - Which spots are sunny in the morning? Afternoon?
 - Which spots feel warm?
 - Which spots have good air flow from a nearby window or door?
- Draw a map of this space, including any relevant details (like furniture and windows). Using a ruler can make it easier to keep your map looking neat and tidy.
- Based on the observations from Step 3, fill in the sunny and shady spots on the map with colours, pictures or shading. Add as many details as would be helpful.
- Using this Sun Map, decide where the seedlings will grow. Choose somewhere that the seedlings will be warm. Most plants need at least six hours of direct sunlight, so consider that as well when choosing the perfect spot. In the example below, the counter-top in front of "Window 2" appears to be the best spot. This spot is sunny all day and the window can be opened to allow air to flow through.

2.2 MATERIALS:

- Garden journal
- Pencil or pen

OPTIONAL:

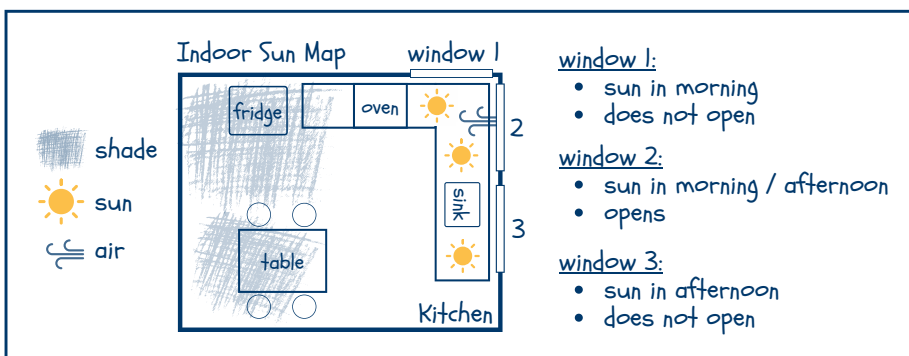
- Coloured pencils or markers
- Ruler

TIPS AND TOOLS

Plants need sunlight, water, nutrients, room to grow, and air. They need to breathe for the same reasons we do.

Wherever the seedlings are grown, they should ideally get a little bit of airflow from an open door or window to help them breathe.

2.2 EXAMPLE:



2.3 TRANSPLANT SEEDLINGS

1. Prepare each plant container by filling about $\frac{3}{4}$ of the way with soil.
2. Cut or tear each individual cup, with the seedling inside, away from the egg carton. If there is more than one seedling in a single cup, have a container prepared for each seedling (or simply choose the tallest/healthiest seedling to keep and discard the others).
3. Gently scoop or push the soil and seedling into your hand. Be careful with the roots!
4. Place both plant and soil into the prepared pot and add more soil to fill the remaining space around the seedling. Gently pat the soil down to get rid of trapped air.
5. Repeat as necessary for each seedling.
6. Put the pots in the place chosen for them in the previous activity. Keep the pots in a waterproof tray to catch excess water.
7. Transplanting can be stressful for seedlings, so be sure to water generously. As they grow, water them frequently (at least once per day) to keep the soil moist but not soaking wet.

Wait until seedlings are 7-10 cm tall before completing the following activity (2.4).

2.4 "HARDEN OFF" SEEDLINGS

1. Plants can be transitioned outside after the last frost date. Research online or using a farmer's almanac to find out when the last frost date is in your area.
2. The transitioning process the plants will need to undergo to live outside is known as "hardening off." This will make them strong enough to survive in changing weather. There are three factors to consider when hardening off:



Sunlight: Start putting the plants outside on mild days. Place them in partial shade to avoid sunburn. Move them back inside in the evenings when it gets cold.



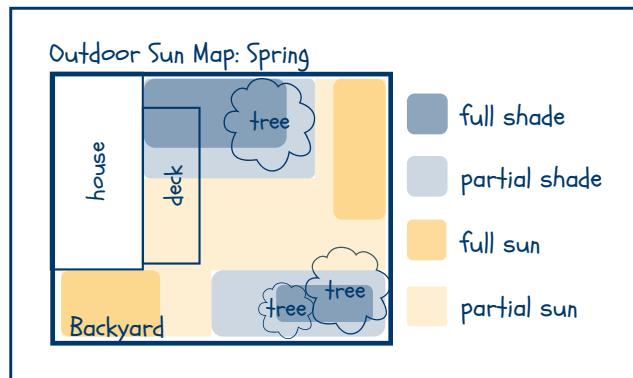
Temperature: Check the temperature every night. When the nights are consistently warm enough (over 10°C), plants can safely stay outside overnight.



Water: Begin to water plants less frequently (about every few days). Forcing them to search for water with their roots allows them to strengthen their root system.

3. Once the process of hardening off is complete, the plants should begin to thrive outdoors. It's now time to choose a spot outside where they can continue to live comfortably.
4. On the "Garden Sun Map" page in your garden journal (or the following page, if space is limited), repeat Steps 3-5 of Activity 2.2 to draw another Sun Map of your outdoor space.
5. As with the first Sun Map you drew, this will inform where the plants will live. As the year progresses, consider drawing a Sun Map for each season.

2.4 EXAMPLE:



2.3 MATERIALS:

- Plant pots
 - *If using recycled containers, poke a few small holes in the bottom for water drainage.*
- Potting soil
 - *You can also use dirt from outside mixed with compost.*
- Waterproof tray
- Seedlings

OPTIONAL:

- Craft supplies for decorating plant containers

2.4 MATERIALS:

- Garden journal
- Pencil or pen
- Seedlings

OPTIONAL:

- Outdoor thermometer
 - *Alternatively, check temperatures via local weather information.*
- Coloured pencils or markers
- Ruler



TIPS AND TOOLS

When "hardening off" plants, start by putting them outside for only a few hours at a time.

Gradually increase the time outside every day.

This allows them the time they need to adjust to varying temperatures.

