



How to Grow Plants from Seed

Three Parts: [Planting the Seeds](#) [Caring for Seedlings](#) [Troubleshooting](#)

Growing plants from seeds is often cheaper than buying them. More importantly, you get to guide the plant through a whole life cycle, potentially establishing an addition to your garden that will last for years. Vegetable or flower seeds are good choices for first time growers.

Part
1

Planting the Seeds

1 Choose your seeds. A local garden store can recommend seeds that are easy to grow in your climate and at this time of year. Great beginner options for vegetables and herbs include [green beans](#), [looseleaf lettuce](#), [cherry tomatoes](#), and [basil](#). [Sunflowers](#), [cosmos](#), and [poppies](#) are some of the easiest flowers to grow from seed.^{[1][2]}

- Fresh seeds are more likely to germinate than old ones.
- Collecting your own seeds from plants or fruit is risky, but can be a fun experiment. Because of cross-pollination or grafting (attaching the branches of one variety to the roots of another), the children may not look like the parent.

2 Set the planting time. In most cases, you'll want to start your seed indoors. This means you can plant before the spring frosts have passed. Cold-hardy plants can be planted indoors in late winter or early spring. Plants that thrive in heat need a later seeding date (mid- or late spring), so the weather is warm when the plants are ready to go outside.

- Plants usually take three to six weeks to grow from a seed to a healthy plant ready to be moved outdoors, but some take up to fifteen.^[3] Because this depends so much on plant variety and local climate, it's best to ask a local gardener for advice. Local garden supply stores and agricultural extensions should be happy to help.

3 Select a starting pot. Seeds planted outdoors are vulnerable to disease, insects, and bad weather. The survival rate will be higher if you care for the young plants indoors. A seed starting tray from a gardening store is a convenient option, but you can use any small container with drainage holes.

- Before reusing an old container, scrub thoroughly with soapy water. Dip it in a solution of one part household bleach and nine parts hot water, then air dry. This will kill microorganisms that could harm the seed.^[4]
- Some plants such as lettuce, cucumbers, melons, and sunflowers suffer when transplanted if their roots are disturbed. You can start these seeds outside instead after the last spring frost, or plant each seed in a separate cell of a "plug tray" and transplant the whole chunk of soil.^{[5][6]}

4 Add seed starting mix. Making your own is simple, and much cheaper than buying it from a store. Just mix together equal amounts of perlite, vermiculite, and coir (or peat moss). This light mix drains quickly to prevent rot, and makes it easy for the sprout to emerge from the surface.^[7] Moisten the seed starting mix thoroughly, then fill containers to within ¼" (6mm) of the top. Use any clean object to gently press the mix into a firm, level surface. Let excess water drain before you continue.^[8]

- If you're using a store-bought mix, check whether it contains compost. If it does, you won't need to fertilize your seedlings. (Don't try to add compost to a homemade mix for your first project — it's more trouble than it's worth.)
- If you use peat moss instead of coir, add hot water to make it easier to mix in.^[9] Since peat moss is acidic, it helps to add garden lime (calcium carbonate) to balance it out. Try ¼ tsp of lime per gallon of potting mix.^[10]

Plant your seeds. If the seed starting mix has dried out, moisten it again before planting. Check your seed packet for

5 exact spacing instructions, or follow these guidelines:^[11]

- **Shared tray, one variety:** Scatter the seeds loosely and evenly across the tray.
- **Shared tray, multiple varieties:** Scratch shallow rows 1–2 inches (2.5–5cm) apart with a clean ruler. Drop seeds of each variety into a separate row. Label each row.
- **Separate pots or plug trays:** Plant one large seed (e.g. cucumber or melon seed) or two small seeds (e.g. most flower seeds) in each container.

6 **Cover seeds based on their size.** As a rule of thumb, bury seeds to a depth twice the diameter of the seed. Most tiny seeds need light to germinate, including petunia, lettuce, and snapdragon seeds. Just leave these on the surface of the mix.

- Dry vermiculite or milled sphagnum moss (not peat moss) are ideal for covering seeds, but you can use dry seed-starting mix instead.^[12]
- Sprinkle the material on lightly. If you press it on hard, the sprout may have trouble breaking through the compact layer.

7 **Seal moisture in with plastic.** Seeds are very vulnerable to over- and under-watering. A layer of plastic wrap or a plastic bag seals will often keep the mix moist until the seeds have germinated.^[13]

- You can [make a miniature greenhouse](#) instead, or grow seedlings in an old, covered aquarium.

8 **Keep the seeds in warm, indirect sunlight.** If the seed packet doesn't specify a temperature, keep it at daytime temperatures between 65 and 75°F (18–24°C), and night temperatures no lower than 55°F (13°C).^[14] Put a heating pad under the tray if the room is cooler than this. Most seeds do best in plenty of light, but avoid direct sunlight if the containers are covered in plastic.

- Some seeds germinate best in complete darkness, including tomatoes, larkspur, calendula, and coriander. Block the light with black plastic or cardboard.^[15]
- If you want to maximize success, you can look up your variety's specific temperature needs. In most cases, though, you'll only lose a few seeds to the "wrong" temperature, or the seeds will take longer to emerge.

9 **Check moisture levels every day or two.** If the mix looks dry, place the container in a container of water. The mix will absorb water from the base of the container.^[16] This is less risky than watering from above, which can wash away the seeds or overwater them.

- As mentioned before, the plastic is often enough to retain moisture for the whole germination period. This is just a backup.

Part 2 Caring for Seedlings

1 **Remove the plastic after germination.** Most seeds germinate (sprout) within a couple weeks. Once sprouts have emerged from the soil, take off the plastic cover (if you were using one).

- If you planted in rows in a shared tray, cut strips of plastic or cloth to cover the rows that have not yet sprouted.^[17]

2 **Provide bright light immediately after germination.** Move the container to a bright, south-facing window (north-facing in the Southern Hemisphere). If the temperature or lighting conditions on the windowsill are very different from the last location, move the seeds in several stages, gradually increasing brightness levels. Sudden changes may kill the plants.^[18]

- If it is quite cold outside, you may need to place a heat pad between the planters and the window. Otherwise, the cold will be absorbed through the window and slow the growth of the tiny seedlings.
- At far northern or southern latitudes that don't receive much sunlight, place a [grow light](#) 6 inches (15 cm) above the seedlings and turn it on for 14–16 hours a day. Move the lamp farther away as the seedlings grow to avoid burning them.^[19]

3 Rotate the plants daily. Plants grow toward the light. If light only comes from one window, the seedlings will lean into it and grow long, weak stems. Give the containers a quarter turn each day to promote even growth.^[20]

4 Keep temperatures stable. Unless your seed packet says otherwise, continue to keep the plants at daytime temperatures between 65 and 75°F (18–24°C), and night temperatures no lower than 55°F (13°C). Excessive cold or heat during this stage can cause unhealthy growth patterns, such as weak, "leggy" stems.^[21]

5 Water regularly. The mix must stay moist but not soggy, or the delicate roots will rot or drown (unable to absorb oxygen). A water bath that lets the container absorb water from the base is ideal, since watering the sprout may break it or encourage disease.^[22]

- Seeds will quickly die if allowed to dry mid-germination. Check at least once a day.

6 Provide fertilizer once the first true leaves emerge. The first set of leaves that appear are known as the seed leaves or cotyledons. The second set of leaves are the first 'true leaves,' and a sign that your plant is getting mature and ready for serious growth. Dilute a balanced fertilizer to ¼ the strength recommended on the label. Pour it into a tub and place the container in the diluted fertilizer to absorb it from below. Repeat once a week or as directed by the fertilizer label.^[23]

- If the seeds were planted in a mix that contained compost, do not fertilize them. Too many nutrients can cause "burns" or other problems.
- You can fertilize at ½ strength once the seedlings are in larger pots, and full strength once they are adults.

7 Transplant seedlings to individual containers. If the seedlings are sharing a container, they'll need a larger home before they crowd each other. Delay this delicate process, called "pricking out," until the seedling looks sturdy enough to handle. Typically, gardeners will only transplant the largest, healthiest seedlings. You can compost or give away the rest. Here's how to approach the transfer:^{[24][25]}

- Wash the new container in soapy water, then rinse.
- Fill the new container with moist, room temperature potting soil. Push a hole into it large enough for your seedling's roots.
- Gently tease away the starting mix around the seedlings root using a popsicle stick or similar thin tool.
- Lift the plant by the topmost leaves. Do not handle the stem.
- Lower the plant into the hole. Use a pencil to spread out the roots a little, but don't worry if it's not perfect.
- Sprinkle moist potting soil over the roots until the seedling is planted to the same depth as before. Press the soil down lightly.
- Avoid changes in temperature and light levels for at least a few days, while the plant is recovering.

8 Harden off your plants. 'Hardening off' is a process in which you slowly expose your plants to the fluctuating temperature and weather conditions outdoors, so that they don't suffer from transplant shock. Start this process two weeks before the outdoor planting date appropriate for your plant:

- Lower the temperature indoors slightly.
- Water less frequently, but do not let the plants dry out.
- Move them outdoors for an hour or two a day, in a shady area protected from wind. Avoid temperatures below 45°F (7°C).^[26]
- Increase the amount of time spent outdoors by an hour or so each day. Gradually expose the plants to sunlight. (The correct amount of sun depends on the plant and where you plan to move them.)

Transplant your seedlings outdoors. Once the weather is warm and your plants can handle being outdoors all day,

9 transplant them to a permanent outdoor pot or garden bed. Follow the specific directions for your plant, since every species has different temperature and sunlight needs. This is the basic outline only:^[27]

- When possible, transplant on an overcast morning with minimal wind.
- Wet the soil both in your plant's pot and in the new hole.
- Carefully transfer the root ball to the new hole. Spread out the roots as much as you can without breaking them.
- Add soil to the same planting depth as before.
- "Water in" heavily to bring the soil in contact with the roots.

10 **Maintain your plants.** Transplanting is rough on plants, and it can take several weeks before new roots become established. After the initial watering, keep the plant moist but not soaked. Protect the plant from strong wind and rain until it's back to its healthy self.

Part 3 Troubleshooting

1 **Prevent fungus infection in young seedlings.** Newly sprouted seedlings die to fungus so often it has its own name: "damping off." Try again with new seeds, and take extra precautions to prevent spores from landing and taking hold:

- Use sterile potting mix and clean all containers and tools with a 1:9 ratio of household bleach and water.^[28]
- Sprinkle dry vermiculite or perlite over the surface of the container after planting.
- Avoid cool, damp conditions. If the soil drips water when you squeeze it, it is too wet.
- For best results, treat the mix with fungicide, following label instructions.

2 **Figure out why tree seeds are not growing.** Many tree seeds, including seeds taken from oranges or apples, need special treatment to trigger germination. Following the exact instructions for your species will provide best results. Most seeds of this type need one or both of the following treatments:

- Scarification: Seeds with a hard coat may need it removed or thinned. Try rubbing with a nail file or nicking it with a knife. You can even boil some tough seeds to soften the coat.^[29]
- Stratification: Many tree seeds in nature lie on the ground all winter and germinate in spring. A few weeks in a cold, damp environment mimics these conditions so the seed "knows" that it should sprout. Try keeping the seeds between two damp paper towels in the fridge, inside an unsealed zip-locked bag.

Community Q&A

Why does the plants to be leggy?

wikiHow Contributor

When a plant receives too little light, it grows "leggy" (thin and long) to try to reach more light. This results in a weaker plant and can cause the plant to die if left unresolved. Other factors can also contribute to legginess, such as temperature extremes or too much temperature variation.

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Can one seed produce more than one plant?

Ruthanee

Yes, this is very common actually. Think of it like twins: there are two embryos within the seed, so two sprouts appear.

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Which part of the plant develops seeds?

wikiHow Contributor

Depending on the plant, you can find the seeds inside fruit, or inside seed pods that develop on or near dead flowers. Some plants produce bean pods. If the plants are producing fruit or flowers, that part of it also has seeds in it. Bean plants produce pods which need to dry out before the seeds (beans) inside can be planted.

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Are plants easy to grow?

wikiHow Contributor

Yes, sometimes it depends on the type of plant. For a beginner needing to be inspired, pick something easy to grow, like a basic garden flower. Take the seeds and some dirt, also a pot and put most of the dirt in the pot. Then put about 6 to 7 seeds and put the rest over the seeds, but not too much, just enough to cover the seeds. Then give it water every

day. The seed packets will always give you instructions for more customized care.

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What causes plants to be really spindly?

wikiHow Contributor

Often this can be caused by a lack of light; the plants grow out really fast trying to reach a stronger light source. It can also be caused by a lack of nutrition, If the plants cannot get the nutrients they need, they cannot produce the thicker foliage of normal growth.

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How do I plant vegetables?

Ruthanee

Research germination time and care for the vegetable you want to grow, whether you need to cover the seeds with soil for them to germinate or not (if the seed is the size of a bell pepper seed or bigger, cover with soil, otherwise don't), and whether you need to soak the seeds in water before planting.

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Do I need a heat or plant lamp?

wikiHow Contributor

Many people feel strongly that a heat lamp is a bad idea, since it can dry out or even burn the plant. A heating pad may be a better choice if you don't have a warm room to keep the seedling in. The plant lamp, however, is useful when lighting conditions are not sufficient for the type of plant you're growing. Make sure the lumens (brightness) is sufficient for the plant; full sun is considered to be over 10,000 lumens. The lamp will not be as bright, but you can leave it on for longer to compensate.

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Can aerial roots breathe in air?

wikiHow Contributor

Yes, they can, but should they be aerial? If the roots should not be aerial, then the exposure could also harm the plant by drying it out, not providing nutrients, allowing exposure to pathogens, etc. Only certain species of plants are able to grow in air.

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I planted some seeds and, though they sprouted, some fell over and died. How do I find out if I am planting them in the right type of soil?

wikiHow Contributor

Check the light and moisture conditions first. The seedlings may be burning if there is too much light, or they may be drowning if there is too much moisture. That said, you can check online for the soil and environmental conditions that are prime for the seeds you are planting. Also, make sure the soil is light and does not contain any contaminants, such as bacteria, fungus, toxins from weed killer, or fertilizer, which can burn the seedlings. The soil should be loose, light, and drain easily.

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How long does it take for a plum seed to germinate?

wikiHow Contributor

Like many tree seeds, plum pits need a special cold period called stratification before they will germinate. [Read the full instructions here.](#)

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Tips

- Pick out a garden plot outdoors for your seedlings long before planting; you may need to amend the soil or make other preparations in the time that your seeds are germinating.
- Some gardeners "pet" the top of their seedlings each day. This seems to promote stronger, shorter stems. Wind has the opposite effect, encouraging taller but weaker growth.^[30]

Things You'll Need

- Seeds
- Soil
- Variety of pots
- Fertilizer
- Water

Sunlight

Sources and Citations

• Videos provided by BubbleBeet

1. <http://www.mnn.com/your-home/organic-farming-gardening/stories/17-easy-to-start-seeds-for-beginner-gardeners>
2. <http://www.treehugger.com/green-food/no-green-thumb-try-growing-these-three-easy-vegetables.html>

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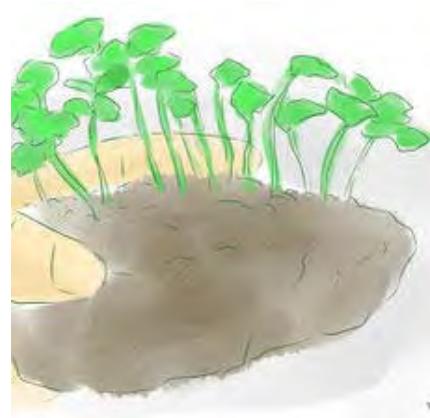
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