

Every Child A Seed Programme

Lesson 3: What do plants need to grow?




Supported by:

About the Every Child A Seed programme

- A programme by NParks to encourage students to grow a plant, and learn about:
 - Plant reproduction
 - Plant parts
 - Plant needs
- We hope that students will learn to appreciate plants more, and join us in making Singapore a City In Nature!

How does planting seeds help our City In Nature?

- Everyone plays a role in creating our City In Nature, including you!
- Growing plants is an important part of our City In Nature. Roadsides, gardens, and parks are important habitats and calming spaces because of plants.
- By growing your own seeds, we hope that you will appreciate plants more, and have a deeper appreciation of our City In Nature.



**Can you point out
some living and
non-living things
in this photo?**



Non-living things:

- Buildings
- Gravel
- Plastic planter beds



Non-living things:

- Buildings
- Gravel
- Plastic planter beds


Living things:

- Plants!



**How do you know if something is
alive? Discuss!**





**All living things
can grow, and
respond to their
environment**

What do plants need to live?

What do plants need to live?

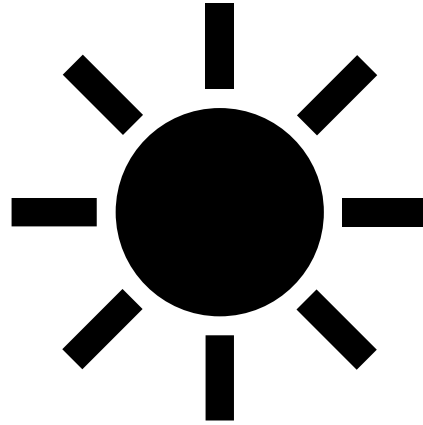


Water

What do plants need to live?



Water

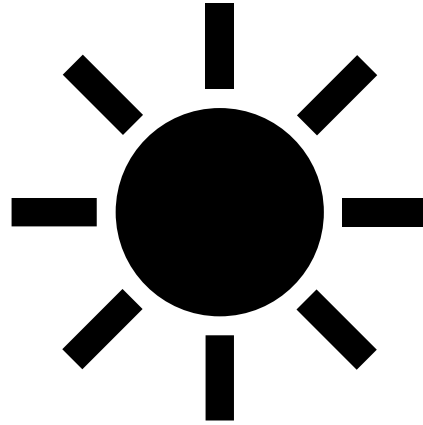


Light

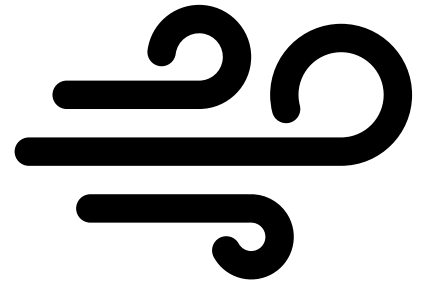
What do plants need to live?



Water



Light



Air

Plants need water

- Plants need water to:
 - Make food
 - Stand upright
- Plants that have no water will get droopy!
 - This is called wilting
 - If plants wilt too long, they will die
- Plants absorb water through their roots



How do I water my plant?

- Water your plant when your soil is dry
 - Touch the soil or use a chopstick to see if its dry
 - Soil should not stay dry for more than 2 days
 - Aim the water at the roots of the plant
- Keep watering until water comes out the bottom of the pot



Plants need light

- Plants use energy from the sun to make food
- Plants use their green leaves to absorb light
- Places with lots of light tend to have lots of plants!



The image shows two potted plants on a dark gravel surface. A large, bright shadow of a plant is cast from the left, covering the left side of the frame. The plant in the upper right is a variegated plant with green leaves and white edges, sitting in a dark pot. The plant in the lower right is a green plant with pinnate leaves, sitting in a light-colored pot. A semi-transparent white box with black text is centered over the plants.

**Which plant is in sunlight,
and which plant is in shade?**



Direct and indirect light



- **Direct light** will cast a shadow with clear, hard edges
- This light is strong and hot!
- Direct light comes from the sun, and is not blocked by other objects



- **Indirect light** will cast a shadow with soft edges
- This light is weaker, and cooler
- Indirect light is filtered through clouds, or bounced off buildings

Activity: can you find direct and indirect light in school using your shadow?



What kind of light does my plant need?

- Sweet Basil, Roselles and Sunflowers do best with at least 6 hours of direct sunlight
- Gardens with lots of lush plants generally get at least 6 hours of direct sun!
- Other places with lots of light:
 - West-facing balconies and windows
 - Rooftops



What happens if my plant has no light?

- Plants will grow towards light
- If a plant has no light, it will grow long and skinny as it looks for light
- You will see your plant lean towards light sources!



Plants need air to breathe

- Did you know that plants breathe through their leaves and roots?
- If the soil is too wet and waterlogged, the roots can't breathe, and will rot
- This is why it is important to use pots with holes to let water drain



Plants will grow bigger!

- As living things, plants will grow bigger as they get older
- Bigger plants need bigger pots!
- Move your plant into a bigger pot once you have 4 or more leaves
- Make sure that the new pot is at least 15cm deep, and 15cm wide



How to transplant young plants

1. Fill the new pot with soil
2. Gently remove the young plant from the old pot. Be careful with the roots!
3. Dig a hole deep enough to cover the plant's roots
4. Put the young plant in the hole and gently pat soil over the roots
5. Water your plant!



How can you help your plant to grow?

1. Water your plant when the soil is dry
2. Put your plant somewhere with lots of direct light
3. Use pots with drainage holes to let the roots breathe
4. Move your plant to a bigger pot when it has 4 or more leaves



Want to learn more about gardening?

- Visit a garden!
 - Community Gardens:
<https://gardeningsg.nparks.gov.sg/get-involved/community-gardens/>
 - The Jacob Ballas Children's Garden:
<https://www.nparks.gov.sg/sbg/our-gardens/bukit-timah-core/jacob-ballas-childrens-garden>
 - The Jurong Lake Gardens:
<https://juronglakegardens.nparks.gov.sg/>

Want to learn more about gardening and our City in Nature?

- Explore our online resources:
 - GardeningSG: <https://gardeningsg.nparks.gov.sg/>
 - NParks YouTube:
https://www.youtube.com/watch?v=f_Uoug7ZSeg&list=PL1_Eb2Fa0jUdX2KO14mL-StIn-EdSUqzF
 - NParks learning resources:
<https://www.nparks.gov.sg/learn/resources>