

# Introduction to Indoor Gardening





## Community in Bloom Indoor Gardening

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As Singapore transforms into a City in Nature, Community in Bloom (CIB) continues to reach out to all residents to promote a greater appreciation for greenery and to nurture a gardening culture.

With the rapid urbanisation of our nation, land has become a scarce resource. Many residents now live and work in high-rise buildings. Creating indoor gardens give us plenty of opportunities to enjoy greenery in our everyday lives and deepens our appreciation for nature.

Through CIB's Indoor Gardening Programme, you can now transform your home and office into indoor gardens.

# What is Indoor Gardening

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As more residents take up gardening as a hobby, new gardening enthusiasts may be unable to find space for gardening. This is where the CIB team can assist by providing advice on indoor gardening.

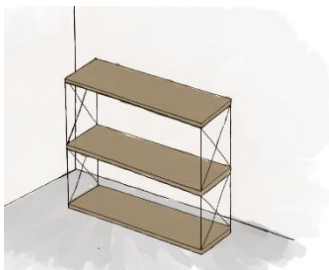
Studies have shown that plants have a positive effect on our mental, physical and emotional well-being. Some studies even suggest that greenery can aid us in memory retention! Hence having a garden in our homes, offices or schools can benefit us all.

An indoor garden can be as simple as having an arrangement of dish gardens or terrariums on your desk, or having a few potted plants around. You may also take it one step further by constructing an indoor landscape!

With a little creativity and passion, anyone can transform an indoor space into a green sanctuary.

# Indoor Garden Considerations

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## Space

Identify a corner for you to set up your indoor garden. It should be large enough to house all your plants.

## Light

Find a space where there is an east or west-facing window. In case of insufficient light, consider setting up artificial lighting such as a table lamp or grow lights.



## Water

Water is essential for all plants, with some requiring more of it than others. Plan a schedule to help you remember when to water your plants.

## Plant Choice

Do some research on plant choice before purchasing to avoid buying plants that are not suitable for your home, particularly if you have children or pets.



# Indoor Garden Considerations

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## Air flow

Good air circulation is needed for plants such as *Tillandsia* sp. and succulents. Air-conditioning also lowers the humidity which causes some plants to lose water at a higher rate.



## Cleanliness

Use soil-less media such as pumice or sphagnum moss instead of potting mix for easier cleaning in case of spillage. You could also look into keeping plants that do not require soil such as *Tillandsia* sp.



## Group Activities

Besides maintaining your indoor garden regularly, why not plan activities with other gardeners?

These could include mass propagation of plants for giveaway or sharing ideas to redesign plant labels for the garden.



# Plant Necessity - Light

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**Light** is one of the main requirements for a plant to photosynthesize. The quality and quantity of light are attributing factors for the plant's health.

Access to a bright east or west-facing window with about 4 hours of sunlight should be sufficient for most indoor plants since most are shade-loving plants. However, without access to natural light, **artificial lighting** may be needed for the plant to thrive indoors.

## What is photosynthesis?

**Photosynthesis** is the process where the plant utilises light to synthesize nutrients from carbon dioxide and water. Chlorophyll which is present in leaves absorbs most of the light from the **red** and **blue** light spectrum. Other wavelengths of light are absorbed by the plant but in small quantities.

Tip: The recommended distance between the light source and plants is about 20 cm to prevent leaf burn.

# Using Artificial Lighting

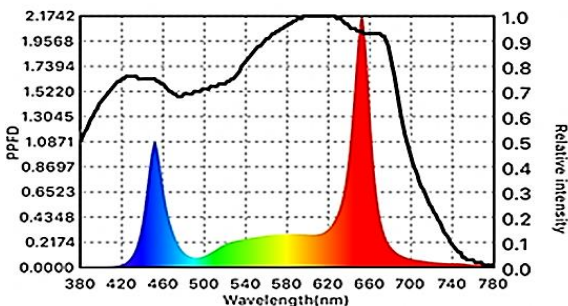
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## Understanding the light required for your plants

**Light intensity** is measured in **lumens (lm)** for most household lights. Lumens is a basic unit of measurement for light brightness as perceived by the human eye.

However, what our eyes perceive as bright might not appear as bright to plants. A light fixture that has more blue and red light would have lower lumens than a green and yellow light which our eyes are more sensitive to.

The spectral range useful for plant growth is defined as **Photosynthetically Active Radiation (PAR)** which refers to wavelength from 400nm to 700nm. This is shown in the graph below.



To determine how much useful light is reaching your plants, you will need to understand the **Photosynthetic Photon Flux Density (PPFD)** value. Its unit is in  $\mu\text{mol}/\text{m}^2/\text{s}$  which measures the number of **photons** in the suitable spectra range received by the plant surface at a certain time.

The larger the value, the more usable light is reaching the plant surface. This value can be found in the specifications for various grow lights.

**Lights  
(Generalised  
comparisons)**

**LED  
household**



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Soil scoop

Gloves

Spray bottle

Secateurs

Forceps

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