

# Success with Houseplants

Taking care of indoor plants

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## What are houseplants?

- *"The most common [houseplants] are native to warm, frost-free parts of the world and can be grown indoors in colder climates"*
- Challenge: Re-create the plant's natural conditions indoors
  - Light
  - Water, humidity & nutrients
  - Temperature
  - Plant sanitation
  - Insect pests



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## Comparing Indoor & Outdoor Plants

<p><b>Indoor Plants</b></p> <ul style="list-style-type: none"> <li>• Requires special climate/temperature</li> <li>• Grown in potting soil           <ul style="list-style-type: none"> <li>◦ Sterile</li> <li>◦ Fertilizing required</li> <li>◦ Roots contained</li> </ul> </li> <li>• Uses artificial light</li> <li>• Hand-watering</li> <li>• Limited pest list</li> <li>• Live year-round</li> </ul>		<p><b>Outdoor Plants</b></p> <ul style="list-style-type: none"> <li>• Thrives in MN climate/temperatures</li> <li>• Grown in ground soil           <ul style="list-style-type: none"> <li>◦ Microbes &amp; insects</li> <li>◦ Natural compost</li> <li>◦ Roots free-roaming</li> </ul> </li> <li>• Uses sunlight</li> <li>• Rainwater</li> <li>• Numerous pest risks</li> <li>• Live seasonably</li> </ul>
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### Why grow houseplants?

- Houseplants benefit our physical and mental well-being
- Benefits
  - Absorb CO<sup>2</sup> & other chemicals
  - Release moisture into the air to increase humidity
  - Reduces blood pressure & stress
  - Increase productivity & creativity
  - Decrease depression



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### Raising Houseplants



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### Containers for Houseplants

- Requirements
  - Large enough for the plant & water
  - Stable (won't tip over)
  - Allows drainage
- Popular container options
  - Clay
  - Plastic
  - Ceramic
  - Double-potting
  - Self-watering/Reservoir pots



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### Soil for Houseplants

- Requirements
  - Use sterilized soil-less potting medium – a.k.a. Potting Soil
- Potting soil components
  - Combinations of peat/sphagnum moss, compost, decomposed bark, vermiculite & perlite
  - Amendments like calcined clay, charcoal, dolomitic lime, sand & sterilized topsoil
  - Specialty mixes good for some plants



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### Fertilizers for Houseplants

- Requirements
  - Most potting soil mixes do not provide adequate nutrition for plants to thrive. Additional fertilizer is recommended.
- Recommendations
  - Apply when plant is actively growing (not dormant); often every two weeks March through September (*unless specified*)
  - Follow instructions for houseplants
  - Do not fertilize when soil is dry
  - Many types of fertilizers are ok for houseplants (*Liquid vs granule, or Synthetic vs organic*)



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### Repotting Houseplants

- When to Change Containers:
  - Wilting within a day or two after watering
  - Very little/no new growth & a general lack of vigor
  - Plant becomes root-bound
- When to Replacing Potting Soil:
  - Soil level decreasing
  - Excess salt build-up
  - Presence of soil pest (fungus/insect)



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### Light for Houseplants

- Requirements
  - Intensity (brightness)
  - Duration (length of time)
  - Quality (color wavelengths)
- Challenges
  - Window direction (North, South, East, West)
  - Distance from the light source
  - Light-blocking obstacles (window coverings, film/dirt on windows, dust on leaves)
  - Time of year



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### Measuring Light Intensity Indoors

- **Direct or Bright Light** creates a shadow with sharp edges
  - South-facing windows
  - Directly in front of light source
- **Medium Light** creates a shadow with fuzzy edges
  - East- & West-facing windows
  - 5-10 feet away from light source
- **Low Light** creates a shadow without clear edges
  - North-facing windows
  - 15-20 feet away from light source



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### Water for Houseplants

- Requirements
  - Water "when it's needed"
  - Direct water to the roots
- Considerations
  - Type of plant & stage of growth
  - Container & potting soil
  - Ambient humidity & temperature



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### How to Water Houseplants

- Determine IF the plant needs water
  - Feel the soil regularly – “finger test”
  - Check the weight of the container
  - Allow soil to dry between watering
- Water soil from the top
  - Use untreated water if possible
  - Bring water to room-temperature
  - Add water until excess runs out the drainage holes in the bottom
  - Empty standing water after 10 minutes



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### Humidity for Houseplants

- Requirements
  - Most houseplants are from tropical or sub-tropical areas (45-50% humidity)
  - May vary on plant species
- Recommendations
  - Aim for 30% humidity at home
  - Use a humidifier
  - Set containers on a tray filled with pebbles & water (Note: plants should NOT sit in water)
  - Cluster plants together
  - Enclose plants in a terrarium



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### Temperature for Houseplants

- Requirements
  - Most houseplants are from tropical or sub-tropical areas; they require warm & constant temperatures.
- Recommendations
  - Aim for temperatures similar to the plant's native home
  - Keep plants away from windows in winters to avoid cold damage
  - Provide additional protection as needed: shades, curtains, drapes or move to a warmer location



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### Cleaning Houseplants

- Requirements
  - As plants grow, it is normal for older leaves to drop off, new growth to stray & dust to collect on leaves. These can affect plant health and should be removed.
- Recommendations
  - Remove dust from leaves
  - Remove dead and dying plant material
  - Prune plant to maintain good size and overall health



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### Inside-Outside Transitions



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### Reasons to move outdoors

- Benefits for Houseplants
  - Increased intensity & quality of light
  - Rainwater (untreated water)
  - Higher humidity
  - More natural temperatures
- Challenges
  - Sensitivity to ambient changes in outdoor growing conditions
  - Weather risks (wind, excessive heat/cold, heavy/no rain & hail)
  - Insects & other animal pests



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### Moving plants between environments

- Allow time for plants to acclimate to their new environment
- Wash plants & check for pests
  - Remove debris & infected material
  - Check for signs of insects
  - Prune & trim as needed
- Keep isolated from other plants for 1-2 weeks
  - Includes new plants from store
  - Prevents pests & infections from spreading to healthy plants



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### Normal transition behavior

- What to expect while plants adjust to new location
  - Slower growth
  - Delay of new growth
  - Existing leaves, buds & flowers may drop



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### Houseplant Challenges

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### Common Problems

- Insufficient light
- Improper watering
- Lack of nutrients
- Insects & pests
- Other common problems
  - Unsuitable potting medium
  - Insufficient humidity
  - Incorrect temperature



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### Light Problems: Too Much / Too Little

- Symptoms of too little light
  - Flower don't bloom
  - Stems are spindly & grow slowly
  - Leaves turn yellow & drop off
  - New leaves are smaller & lack color patterns
- Symptoms of too much light
  - Leaves may curl at the tips
  - Leaves turn yellow or brown & drop off
  - New leaves are faded (less green)



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### Water Problems: Over- /Under-watering

- Symptoms of too little water
  - Plants are wilted
  - Leaves tips & edges become dry or brittle
  - Leaves turn brown & drop off
- Symptoms of too much water
  - Plants wilt
  - Lower leaves turn yellow & drop
  - Roots rot
  - Oedema develops on the underside of the leaves
  - Plants grow adventitious roots



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### Nutrient Problems: Too Much / Too Little

- Symptoms of too little nutrition
  - Plants are undersized (stunted)
  - New leaves are faded (less green)
  - Leaves drop off
  - Few flowers develop
- Symptoms of too much nutrition
  - Plants wilt
  - Plants are undersized (stunted)
  - Leaves are poorly-shaped
  - Leaves tips & edges become dry or brittle


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### Insect Problems

- Symptoms of insect problems
  - Plants are wilted
  - New leaves are faded (less green)
  - New leaves are smaller
  - Leaves are poorly-shaped
- Identifying insect pests
  - Inspect tops & undersides of leaves
  - Look for insects, webbing, holes, honeydew & eggs
  - Watch for movement when watering, fertilizing & cleaning plants


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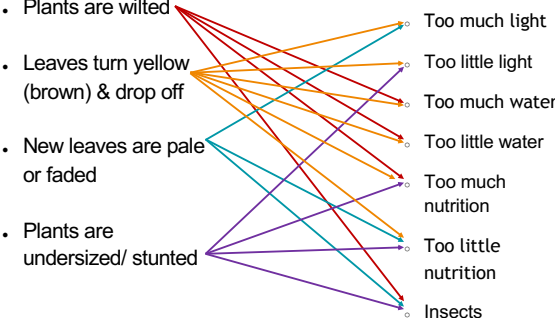

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### Common Problems Overlaps

- Plants are wilted
- Leaves turn yellow (brown) & drop off
- New leaves are pale or faded
- Plants are undersized/ stunted

- Too much light
- Too little light
- Too much water
- Too little water
- Too much nutrition
- Too little nutrition
- Insects


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# Houseplant Summary



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## Recap

1. Houseplants are often sub/tropical plants. The gardener needs to recreate those conditions indoors.
2. Know what your plant needs. With the right amount of water, light, nutrition, & temperature, houseplants will thrive.
3. Many problems have multiple possible causes. The gardener needs to figure out the real problem to help the plant recover.

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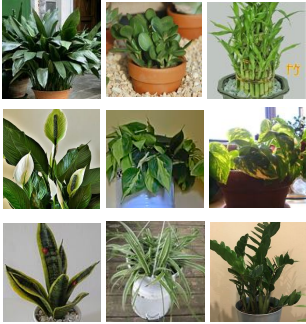

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## Beginner Houseplants

*These plants are: shade-tolerant, easy-to-water, low-maintenance & pest-resistant*

- Cast Iron Plant
- Jade Plant
- Lucky Bamboo
- Peace Lily
- Philodendron
- Pothos
- Snake Plant
- Spider Plant
- ZZ Plant

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### Common Houseplants

<p><b>Sun-Loving</b></p> <ul style="list-style-type: none"> <li>• Common Geranium</li> <li>• Dwarf Citrus</li> <li>• Herbs             <ul style="list-style-type: none"> <li>◦ Sweet Basil</li> <li>◦ Oregano</li> <li>◦ Rosemary</li> <li>◦ Thyme</li> </ul> </li> <li>• Succulents             <ul style="list-style-type: none"> <li>◦ Jade Plant</li> <li>◦ Hens and Chicks</li> <li>◦ Aloe Vera</li> </ul> </li> </ul>	<p><b>Shade-Tolerant</b></p> <ul style="list-style-type: none"> <li>• African Violet</li> <li>• Chinese Evergreen</li> <li>• Dracaena</li> <li>• Hoya</li> <li>• Peace Lily</li> <li>• Philodendron</li> <li>• Pothos</li> <li>• Ponytail Palm</li> <li>• Snake Plant</li> <li>• Spider Plant</li> </ul>	
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### Learn More

**Websites**

- U of MN Extension: <https://extension.umn.edu/yard-and-garden>
- Ramsey County Master Gardeners: <http://www.ramseymastereardeners.org/>
- TIP: Google "Houseplant site:edu" (or site:gov) for additional advice

**PDF References**

- [Growing Indoor Plants with Success](https://extension.uga.edu/publications.html) (University of Georgia Extension, <https://extension.uga.edu/publications.html>)
- [Houseplants: Proper Care and Management of Pest Problems](https://www.ars.ndsu.edu/publications) (North Dakota State University Extension Services, <https://www.ars.ndsu.edu/publications>)

**Books**

- [Taylor's Guide to Houseplants](#), (by Gordon DeWolf & Norman Taylor)

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### Common Questions

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### U of MN Extension Website

<https://extension.umn.edu/yard-and-garden>

- Lots of information
  - Common pests
  - Diagnosing problems
  - Details for growing
  - Tips & best practices
  - More resources




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### Question: Why is my houseplant dropping leaves?

- Common Causes
  - Overwatering
  - Underwatering
  - Change in growing conditions
    - Light
    - Temperature
    - Environmental stress




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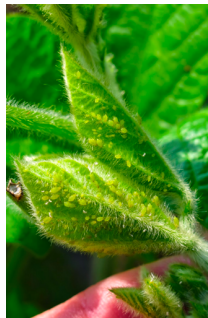
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### Question: What are the most common pests for houseplants?

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| <ul style="list-style-type: none"> <li>• Insects           <ul style="list-style-type: none"> <li>◦ Aphids</li> <li>◦ Fungus gnats</li> <li>◦ Mealy bugs</li> <li>◦ Scale insects</li> <li>◦ Spider mites</li> <li>◦ Thrips</li> <li>◦ Whiteflies</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Diseases           <ul style="list-style-type: none"> <li>◦ Anthracnose</li> <li>◦ Bacterial Leaf Spots</li> <li>◦ Fungal Leaf Spots</li> <li>◦ Powdery Mildew</li> <li>◦ Root Rot &amp; Stem Rot</li> </ul> </li> </ul> |
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Question: Why won't my Christmas cactus bloom?

- Primary cause: Too much light
  - Christmas Cacti need short days and long nights in a 24 hour time period in order to flower.
  - Put plant in total darkness for 12 hours each day
  - Move into bright light for the rest of each day
- Other reasons
  - Too warm
  - Under-fertilized



Learn more: <https://extension.umn.edu/house-plants/holiday-cacti>

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Question: How to make my orchid re-bloom?

- Specifically for moth orchid (Phalaenopsis)
- Requirements
  - Night temps 10-15° F cooler than day temps
  - Cool light 12-14 hours per day
- Check for
  - Healthy root system
  - Don't use of treated tap water
  - Avoid overwatering (root rot)



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Question: How do I make my poinsettia re-bloom?

- Poinsettia need short days & long nights each day in order to flower.
- Requirements
  - Between Sept. 21 and Thanksgiving, put plant in total darkness for 16 hours each day (Not even the slightest bit of light!)
  - Expose the plant to bright light for the rest of each day
  - After Thanksgiving, put the plant in a sunny area that gets at least 6 hours of direct light



Learn More: <https://extension.umn.edu/house-plants/poinsettia>

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**Question: What do I do with my amaryllis after it blooms?**

- Keeping the plant healthy and growing will promote blooming.
  - Remove flowers after they fade
  - Do not remove the stalk until it turns yellow
  - Place it in the sunniest possible location indoors to promote photosynthesis
  - Continue to water and fertilize the plant regularly



More information:  
<https://extension.umn.edu/house-plants/amaryllis>




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**Question: Why are there fruit flies around my houseplants?**

- Fungus Gnats
- Causes
  - Over watering (soil never dry out)



More information:  
<http://apps.extension.umn.edu/garden/diagnose/insect/indoor/flies/small/fungus-gnats.html>




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**Question: Which houseplants are dangerous to pets?**

- Eating these plant may cause pets to behave abnormally and/or vomit.
- Contact your veterinarian immediately if you think your pet ate a toxic plant.
- Common Houseplants (incomplete list)
  - Aloe (*Aloe vera*)
  - Boston ivy (*Parthenocissus tricuspidata*)
  - Dracaena (*Dracaena marginata*)
  - Elephant's ear (*Colocasia esculenta*)
  - Peace lily (*Spathiphyllum* spp.)
  - Philodendron (*Philodendron* spp.)
  - Pothos (*Scindapsus* spp.)



For more information, go to  
<https://www.aspc-a.org/pet-care/animal-poison-control/toxic-and-non-toxic-plants>




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