

Looking for Light

Plant Needs Week 1 Reading Page

Plants need light to live and grow. Plants have the special ability to make their own food through a process with a very long name: photosynthesis (foe-toe-SIN-the-sis). Through this process they catch light energy in their leaves and then use that energy to turn air and water into food. Not only do plants use this food for themselves, but all other living creatures rely on the food plants produce too.



Their name says it all! Sunflowers need lots of bright sunshine to produce their beautiful blooms.

Where does the light that plants need come from? Most plants growing outdoors gather the light they need from the sun. However, plants can also be grown indoors where they get light from different kinds of light bulbs. Some light bulbs are specifically designed to provide light for growing plants.

Do all plants need the same amount of light? Have you noticed how some plants grow out in the open in full sun, but others grow underneath other plants and spend a lot of time in the shade? Lucky for us, not all plants need the same amount of light.

Some plants need a lot of sunlight to meet their needs and we call these full-sun plants. Common examples of full-sun plants include tomato plants, roses, and fruit trees. Other plants need less light to grow and they need the protection of other plants or shade structures to be happy. Some examples of shade-loving plants include ferns, coleus, and many houseplants. Most plants are somewhere in between full sun and shade.

A tropical rainforest is a perfect example of how plants in the same ecosystem have special adaptations to survive with different amounts of light. A rainforest has 3 different layers of plants – the canopy, the understory and the forest floor.

- The canopy is made up of the large trees which need lots of light to be happy. This layer also includes vining plants that climb up the trees so they can get lots of sunlight too.
- The understory is made up of plants that are medium-sized in height. Understory plants can live in lower light levels — only 2 to 5 percent of the sunlight hitting the rainforest reaches this layer.
- Finally there is the forest floor. Very little light reaches the forest floor and plants like ferns grow in this layer.



These houseplants are thriving indoors under “grow lights” — light bulbs specifically designed for growing plants

A lot of our common houseplants were originally from the understory and floor of the rainforest because indoor lights are not as bright as sunlight.

What happens if plants do not get enough light? Since plants cannot get up and move if they are not getting enough light, they may make other changes in how they are growing. If plants are not getting enough light, you may notice the following:

- **Larger leaves.** Plants will start producing larger leaves to try and capture more sunlight.
- **Longer stems.** Plant stems may start to look long and skinny with fewer leaves as they try to put all their energy into stretching their stems to find more light.
- **Slower growth.** Remember that light is needed for plants to make food. So if plants are not getting enough light, they may not be making as much food and so they will not grow as fast.
- **Fewer flowers.** Plants may stop producing flowers and fruit when they do not get enough sunlight. They are using all their food to just stay alive.



Apple trees need full sun to produce lots of fruit.

Plants can also have problems if they get too much light! They can get sunburned just like people and if too much light is combined with warm temperatures and not enough rain, they dry out very quickly. It is important for gardeners to find out how much light their plants need so they can plant them in a spot where they will be happy and grow well.

Reading Comprehension Questions:

1. True or false: Plants need sunlight to grow.
2. Plants typically make food in:
 - Roots
 - Stems
 - Leaves
 - Flowers
 - Fruit
3. True or false: All plants need the same amount of light to grow well.
4. Match the layers of the rainforest with how much light the plants growing in that layer receive:

Canopy	A little bit of light
Understory	A lot of light
Forest Floor	Almost no light

5. Which of the following is **not** a sign that a plant is not getting enough light:

- Long and skinny stems
- Bigger leaves
- Slower growth
- Lots of flowers and fruit