

## *Sun or Shade?*

What do plants need in order to grow?

Water: Plants need water to carry nutrients from the soil to the leaves.

Sunlight: Plants use sunlight for energy.

Air: Plants take the carbon dioxide that we breathe out and create the oxygen that we breathe in.

Soil: Most plants need soil to provide nutrients.

Space to grow: Plants need space to grow in order to be able to get enough sunlight, water, air, and nutrients from the soil.

Common questions to ask when growing a plant:

What happens if a plant does not get enough water? The leaves will get limp and floppy. After a bit, the leaves will turn yellow and then turn brown. Eventually it will die.

What happens if a plant does not get enough air? It will suffocate, just like an animal kept without air.

What happens if a plant does not have enough soil? It will not grow as well, because it will not have enough nutrients.

What happens if a plant does not have enough space? It will not grow as large, because there will not be room for it to grow?

What happens if a plant does not get enough sunlight? Let's do an experiment to find out!

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We are going to do an experiment to compare what happens to seeds grown in the sun versus seeds grown without the sun.

### Materials:

- 4-6 cups, pots, cans, or make your own pots
- Soil (potting soil, or soil from your yard)
- Seeds (beans, seeds from fruit, dandelion seeds) try for two different types of seeds



### Procedure:

- Firstly, gather your supplies.
- Label your cups, pots, etc. to indicate what kind of plant it will be and if that pot is going to be in the sun or shade.
- Fill your pots with soil. Do not pack it down, leave it fluffy.
- Gently poke two or three seeds into the soil of the correctly labeled pot.
- Gently cover the seeds with soil.
- Give each of the pots the same amount of water.
- Set the pots labeled sun in a sunny window.
- Set the pots labeled shade away from any windows.
- Check the plants every few days. Water all of the plants the same amount.
- Watch for signs of growth.



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### When Your Plants Start to Grow

Check your plants every few days and keep a chart of how they grow.

Here is the chart I made for my seeds:

Day	In the sun			In the shade		
	Bean H2O	Bean	grass	Bean H2O	Bean	grass
18-Mar	Planted	Planted	Planted	Planted	Planted	Planted
20-Mar	nothing	nothing	nothing	nothing	nothing	nothing
22-Mar	nothing	nothing	top of cup. Green	nothing	nothing	over top. Yellow
24-Mar	nothing	sprouting	thick green	nothing	sprouting	tall yellow
26-Mar	moldy	leaves starting	thick green	moldy	first leaves	tall yellow

On the last page of this activity, there will be a chart that you can print to use.

Check out these websites to learn more:

<https://kidsgardening.org/gardening-basics/>

<https://web.extension.illinois.edu/firstgarden/index.cfm>

[http://www.harcourtschool.com/activity/science\\_up\\_close/311/deploy/interface.html](http://www.harcourtschool.com/activity/science_up_close/311/deploy/interface.html)

<http://www.mbgnet.net/bioplants/main.html>

# My Plant Chart

	In the sun			In the shade		
Day						