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## Light Experiment Project

Grades: K - 4

### Materials needed:

- 2-liter plastic pop bottle or a clear plastic container roughly 10-12 inches tall
- Potting soil
- Water
- Ruler
- A cutting utensil (to cut the pop bottle)
- Poplar tree cuttings

### Objective:

The Light Experiment Project is focused towards a kindergarten to fourth grade learning level. This project provides a visual opportunity for the students to learn more about how sunlight is needed for a plant to grow and survive.

### Experiment procedure:

1. Plant the poplar cutting in a clear container, that can drain excess water (this is to prevent over-watering). This container will allow the students to see the roots form and their little tree grow.

The students should each provide a clear 2-liter pop bottle. Remove the label, then measure 10 inches up from the bottom of the 2-liter bottle and make a mark. The mark is where the students should cut the top of the bottle off, leaving them with an open container to plant their poplar cutting into. Finally poke a few holes in the bottom of the bottle as drainage holes to drain excess water.

2. Have the students hold their poplar cutting in their container, at this time the students can start filling the container with the potting soil. Make sure the students leave one or two leaf buds (approximately 1-2 inches) standing out of the soil. The buds should point up, not down.
3. Have the students water their poplar cutting with enough water so that the water starts to run out the bottom of their container through the drain holes.
4. Have the students place their trees in different areas around the room so that they all don't get the same amount of sunlight.

Have some of the students place their containers in a window or someplace where the container is in direct sunlight. Next have some of the students place their containers in a part of the classroom where the container is going to receive sunlight for a controlled amount of time (such as under a lamp). Finally have some of the students place their containers under a weak light, in a closet, or someplace where you can be sure the containers will receive little or no sunlight.

5. Once the students have all their containers placed around the room, they should take time every 3-7 days to water their poplar cutting as needed to keep the soil moist but not saturated, to make sure that their container is getting the correct amount of sunlight for the experiment. The students could also use this time to take measurements, such as the cutting height, cutting diameter, leaf size, and number of leaves. Finally they should record their data to show the difference in the growing rates between the poplar cuttings receiving sunlight, and those which did not receive sunlight. To ensure that every student gets to have a live poplar tree in the end, place extra trees in the dark areas and let the students' trees get light.

### Conclusion

Ecolotree would like to thank you for the purchase of a "Phyto-Kids Fun Kit." Hopefully your students will have fun and learn a little more about how sunlight affects plant growth.

If you have any questions, please contact Aaron Shultz at Ecolotree, Inc. ([aaron-shultz@ecolotree.com](mailto:aaron-shultz@ecolotree.com), or by phone (319) 665-3547).



To order trees please mail a check to Ecolotree Inc. at 3017 Valley View Lane NE, North Liberty, IA 52317.  
If more information is needed please email ([aaron-shultz@ecolotree.com](mailto:aaron-shultz@ecolotree.com)) or call (319) 665-3547

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#### Phyto-Kids Fun Kits available: (includes school discount)

250 cuttings, \$220

100 cuttings, \$99

50 cuttings, \$65

25 cuttings, \$40

Kits include 3-day shipping within the continental United States. Trees are available between the months of November and July.