



# PLANT OBSTACLE COURSE

Most plants can't grow without light and many plants have interesting strategies to ensure they receive light. One strategy is called phototropism, where a plant grows in the direction of a light source.

Let's explore how plants move with light by making an obstacle course for a plant!

## YOU'LL NEED:

- An adult helper
- A box with a lid or ability to fully close, like a shoe box
- Cardboard
- Tape
- One houseplant

## HELPFUL TERMS:

- Phototropism: the natural process where a plant grows towards a light source.
- Photosynthesis: the process where green plants (and some other organisms) use sunlight to make food.
- Hypothesis: a prediction about the outcome of your experiment. Good hypotheses are "if...then...because" statements. For example: "If I water some plants more and some plants less, then the plants that receive more water will grow taller because plants need water to grow."

## INSTRUCTIONS:

1. Stand the box vertically and then cut a hole about the size of a walnut at the top of the box.
2. Cut two pieces of cardboard about 2/3 the width of the inside of your box.
3. Place the plant in the bottom of the box.
4. Tape the two pieces of cardboard on either side of the box above the plant (see image).
5. Close the box by placing the lid on it or taping the flaps shut.
6. Place the box in a sunny location.
7. Check the plant every other day or so to see how it is changing or if it needs water.
8. Use the experiment guide (page 2) to make a hypothesis, or a prediction, about the experiment.





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## EXPERIMENT GUIDE

### WRITE YOUR HYPOTHESIS:

What do you predict will happen in this experiment?

### DATA COLLECTION:

Complete the table below to track your experiment. Draw pictures to document what you see.

Date	Observations
Day 1	
Day 3	
Day 5	
Day 7	
Day 9	

### WHAT HAPPENED:

Did your plant bend and grow around the light? Research to learn why or read below.

Your plant probably grew toward the light source, bending around the cardboard pieces. As you know, almost all plants need light to grow and produce food through photosynthesis. These plants will reach, stretch, bend and grow to access the source of light.

This is phototropism, the natural process where plants grow towards a light source. Can you think of when this might happen in nature? HINT: think of a tree falling down.



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## IDEAS FOR EXTENSION

### **EXTENSION QUESTIONS:**

What do you think would happen if you made the hole smaller or larger?

Continue the experiment with different plants. Do different types of plants react differently?

Research plants in rainforests or other forests to explore the understory layer. How do these plants adapt to different amounts of sunlight?