Tropism Twist

Name: _____

Testable Question: Does light affect the direction that a seedling will grow? Write your hypothesis for the testable question below. Remember, a hypothesis is an intelligent guess and is usually written as one complete sentence.

Hypothesis: _____

_____

_____

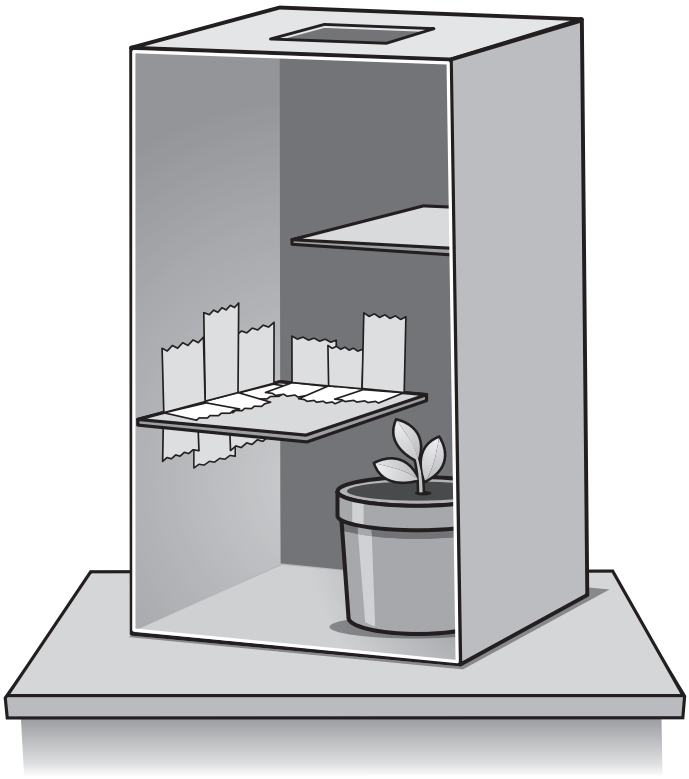
Materials

For your group:

- 6 oz. clear plastic cup
- Shoebox or milk carton
- Duct tape
- Potting soil
- Water spray bottle
- 2 bean seeds
- Thick cardboard
- Scissors
- Craft stick
- Permanent marker

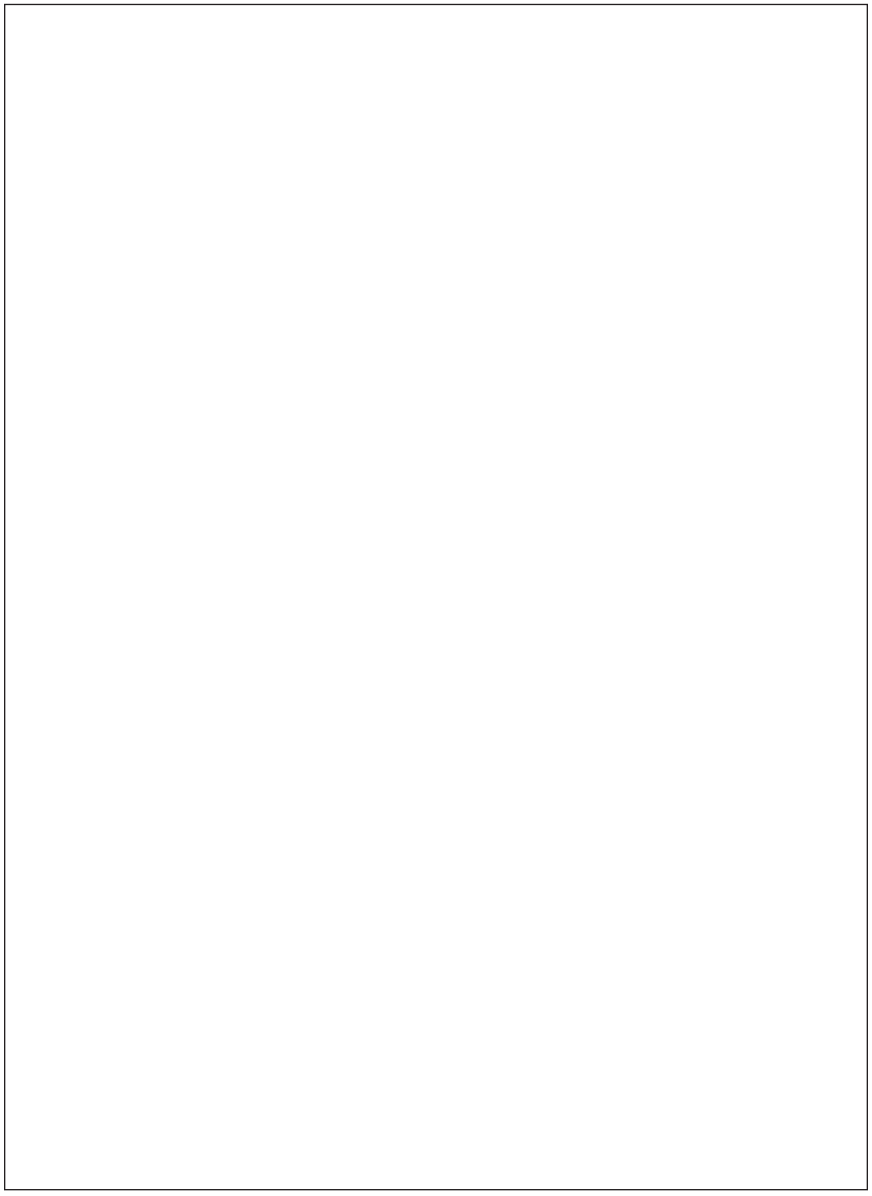
Procedure

Follow the directions to make a phototropism box like the one pictured:



Tropism Twist *(continued)*

1. Carefully draw and cut out a two-inch square from the middle section of one end of the shoe box.
2. Place the lid on the front of the box. Hold the box up to the light. Look through your two-inch hole and make certain that this hole is the only source for light to get into the box. Carefully duct tape over any other cracks or crevices that may be letting light in. *Do not tape the box shut.*
3. Using paper to create a pattern, cut two pieces the height of the inside of the shoebox and half the width. Trace the pattern on stiff cardboard and cut them out. Tape them into the box as shown.
4. After tropism boxes are complete, use the designated planting station to plant two bean seeds for your group experiment.
5. Place planted seeds in a lighted area and wait for the seeds to germinate. When the seedlings are approximately two inches tall, place the watered seedlings into the shoebox as shown.
6. Close the box, tape it, and place it by a sunny window so the square hole on the top can be exposed to the light.
7. After five days, carefully shine a flashlight through the square hole to observe the plant growth. It is best not to disturb plants during this testing period. It can alter the final outcome.
8. In another 3-5 days, check to see if the plant has grown enough to reach the top of the box. Remove the shoebox lid once the plant has reached the top of the shoebox. Record your observations and answer the questions on your worksheet.



Results and Conclusion

1. With the lid removed, draw the inside of your tropism box along with the bean plants' growth progress in the shoebox.

Tropism Twist *(continued)*

2. Did the experiment prove or disprove your hypothesis? _____

3. Explain how your plant grew in the phototropism box. _____

4. Why is phototropism important for plants? _____