

KEY

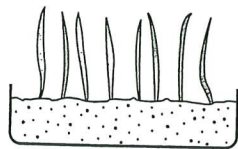
## Examining an Experiment

Have you ever noticed how a plant bends toward the light? Plants twist and bend in order to get toward the light. The attraction of plants toward light is referred to as phototropism.

In this example, Lee and Jill conducted experiments to learn more about the way corn plants grow. You will observe their experiments and interpret the data they collected.

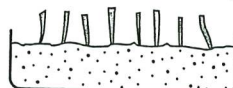
### Experiment #1

Group A

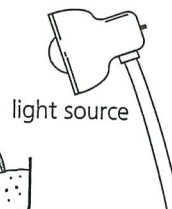


Normal plants with tips on the shoots.

Group B



Plants with tips cut from the shoots.



- (a) Identify the control and the experimental groups.

GROUP A

GROUP B

- (b) What are the independent and dependent variables?

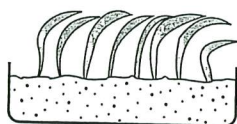
tips - cut or not cut

direction of bend

After a period of time, Lee and Jill observed the following.

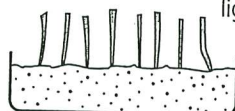
### Experiment #1

Group A

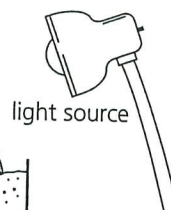


Normal plants with tips on the shoots.

Group B



Plants with tips cut from the shoots.



- (c) Record your observations.

GROUP A - Bent toward the light

GROUP B - grew straight up (do not respond to light)

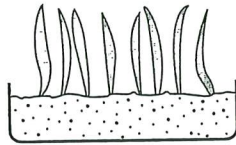
Lee and Jill examined the results. Lee concluded that the cutting of a plant prevented it from responding to the light. He suggested that the injured plant must be using all of its energy to repair itself. Lee explained, "That is why the plants in group B failed to grow and to bend toward the light."

### Examining an Experiment (continued)

Jill suggested that they do another experiment to test Lee's hypothesis. In the second experiment, Jill and Lee decided to cover the tips of the shoots with aluminum foil.

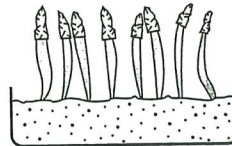
#### Experiment #2

Group A

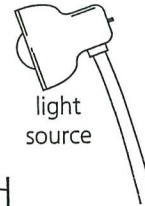


Normal plants with tips on the stems.

Group B



Plants with foil on the tips of the stems.



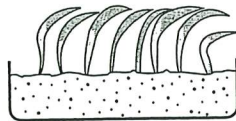
(d) What were Lee and Jill testing in the second experiment?

-they were testing whether the damage to the plant changed its behaviour or the tips reaction to light

The following observations were made a few days later.

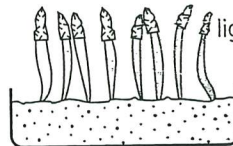
#### Experiment #2

Group A

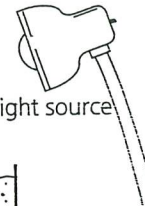


Normal plants with tips on the stems.

Group B



Plants with foil on the tips of the stems.



(e) Record your observations.

GROUP A bent toward the light

GROUP B did not react to light

(f) On the basis of the second experiment, Lee decided to change his first hypothesis. Why did he believe that his first hypothesis was no longer correct?

GROUP B the plants were not damaged, but behaved the same way as damaged tips.

(g) What conclusion would you make, based on the results of the second experiment?

Something in the tips of the plants reacts to light, and bends toward light. The base of the plants doesn't seem to react to light