Home lab 2 · Unit 2 · 15 minutes of setup, 7 days of growing, 20 minutes to measure

If light is the energy source for life on Earth, why do seedlings grown in the dark grow taller?

Name _____ Date _____

MATERIALS

You supply everything. Tick each item as you gather it.

- [ ] 20 radish seeds (lentils, mung beans or sunflower seeds also work)
- [ ] Two shallow containers or plates with paper towels
- [ ] A cardboard box or dark cabinet, and a bright window
- [ ] Water and a spray bottle
- [ ] A ruler in millimeters
- [ ] A phone camera to photograph both groups on day 7

SAFETY

Wash your hands after handling seeds and damp towels. Do not eat the seedlings. Keep the damp towels from growing mold by using only enough water to keep them moist, and throw the experiment away at the end of the week.

PROCEDURE

1. Line both containers with two layers of paper towel and dampen them. Place 10 seeds in each, spaced apart.
2. Put one container in a bright window and the other in a closed box in the same room, so both are the same temperature.
3. Spray both lightly once a day. Open the dark box only for the few seconds that this takes.
4. On day 7, measure each seedling's shoot from the towel to the tip in millimeters. Record the color of the stems and leaves in each group.
5. Photograph both groups side by side next to the ruler.
6. Compute the mean height of each group.

RECORD YOUR DATA

Seedling	Light height (mm)	Dark height (mm)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Mean		

Also record the color of each group, and how many of the 10 seeds sprouted.

LAB REPORT

Write a report that states what you expected, gives your table and the two means, and explains the result. Your explanation must say where the dark-grown seedlings got the energy to grow, and predict what happens to each group if you kept growing them for another two weeks.

Report the numbers you actually got, even when they disagree with the lesson. Write on the lines, or type your report on the website and send it to a teacher there.

Question and hypothesis *State the question in your own words, what you expect to happen, and why you expect it.*

Method *What you changed, what you measured, what you kept the same, and how many trials you ran.*

Observations *Describe what you saw, including anything unexpected. Your data tables are added to the report automatically.*

Calculations *Show each calculation step by step, with units.*

Claim and reasoning *Answer the question using your numbers, then explain why, using the biology from the unit.*

Limits and next step *What could have affected your results, and one change you would make next time.*