

DISCUSSION QUESTIONS – Photosynthesis

KEY

1. Compare results to at least one other group. Did your results agree? If not, what was different and why.

In most cases results will agree, so not much to say! If different, as long as there is an attempt to explain it is ok.

2. Check your data. Do any of your expected changes disagree with the actual changes? Explain any differences.

Will vary. Take a look at data table. In many cases they will not have predicted that the test tube in the dark with BTB and the plant will turn yellow. If so, they need to say something along the lines that they didn't know plants give off CO₂.

3. Did your experiment test your hypotheses? Were they supported?

Almost every group set up the experiment properly, so the answer depends on the predictions they made (right below the Experimental Questions). The experiment showed that in the light plants take in CO₂ and in the dark they give off CO₂.

4. Did you have the proper controls? If not, what should you have done differently?

N/A – every group I saw had the proper controls.

5. Which test tubes changed color?

a. What do those changes tell us about the substances present in each?

Two test tubes changed.

A few groups thought another one changed slightly – that's ok, but they need these two for sure:

- 1) BTB + CO₂ + plant in LIGHT changed from yellow to blue. Tells us the plant used or removed CO₂.
- 2) BTB + plant in DARK changed from blue to yellow. Tells us the plant gave off CO₂.

b. For each tube that changed, tell what process is responsible for the change.

- 1) The one that changed in the light is a result of photosynthesis.
- 2) The one that changed in the dark is a result of cell respiration.

6. Do you have any evidence from your experiment that light alone does not change the color of BTB??

Yes – the two test tubes that were in the light with no plant did not change color.

7. Is CO₂ involved in a plant that is not carrying on photosynthesis? If so, how? What is the evidence?

Yes. The plant in the dark with BTB is not doing photosynthesis. It turned the BTB from blue to yellow showing that it gave off CO₂.

8. Did the design of your experiment allow you to answer all parts of the experimental question? If not what could you do differently?

I think they were all properly designed so this is N/A in almost all cases.

(If questions are missing, write “no #4, 5, 6” etc. on the front of the lab.)

Grading Notation

X	wrong
/	correct
?	confusing (I don't understand.)
inc	incomplete
CS	Complete sentence required. (not applicable for 3a and 4a which are lists)