

ESA 21: Environmental Science Activities

Activity Sheet
Photosynthesis &
Respiration

Name:

Lecture Professor:

Photosynthesis:

Hypothesis:

Write a null hypothesis for this experiment, remembering that you are investigating the effects of light (presence or absence) on pH change in solutions with *Elodea*.

H₀:

Data Presentation:

Table 1:

Tube	Initial color	Initial pH	Final color	Final pH
<i>Elodea</i> - light				
<i>Elodea</i> - dark				
No <i>Elodea</i>				

Conclusion:

Evaluate your H₀, citing data as appropriate. Be sure to explain the results for each of the three tubes, and relate them to CO₂ exchanges between the plants and the solution.

Cellular Respiration:

Table 2:

Container	Initial color	Initial pH	Final color	Final pH
With seeds				
No seeds				

Conclusion:

Explain the results of this experiment in your own words. Be sure to describe the results for each container and relate them to CO₂ exchanges between the seeds and the solution.

Online Case Study:

Answer the questions below completely and thoughtfully, citing information from the case study for each. Brief, incomplete answers are not acceptable, so state your opinions and their justifications fully.

(a.) Is it hypocritical for developed countries like the United States to criticize the exploitation of natural resources in third world countries when our country did exactly the same thing (westward expansion, Oklahoma land rush) to fuel our economic growth in years past?

(b.) Some economists have argued that given the current poor financial status of many third world countries, the only way to protect tropical forests is for developed countries to pay countries like Brazil **not** to destroy their forests. The U.S. government does a similar thing in our country by paying farmers not to cultivate some of their fields? Given the global environmental benefits provided by these ecosystems, would you support the U.S. government paying countries to preserve their forests? Given that these funds would come from tax dollars, how much would **you** be willing to pay on an annual basis to conserve tropical forests? Ask this question of five family members, friends, or acquaintances. What were their answers? Were you surprised by their answers?