

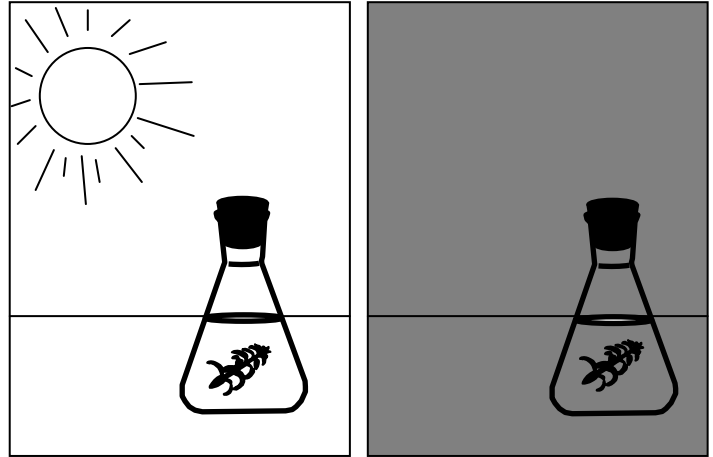
Photosynthesis & Respiration

Critical Thinking

THE SKILL: Analyzing Processes

Analyzing a process involves breaking down the process into its smaller components. The role of each part in the overall process is identified. The relationships that exist among the various parts are also examined. Developing an understanding of the function of each part leads to an improved understanding of the process as a whole.

Bromthymol blue is a pH indicator that turns yellow in the presence of carbon dioxide. In a particular experiment, a scientist filled two flasks with bromthymol blue. She then placed a sprig of *Elodea*, an aquatic autotroph, in each flask. One flask was put inside a dark cabinet, while the other was put in the direct sunlight. After 24 hours, the scientist compared the contents of the flasks. The flask that had been put in the dark contained a yellow liquid. The flask that had been put in the sunlight contained a blue liquid. What caused these results?



APPLICATION Write a complete sentence to each question. Use additional pieces of paper if necessary.

1. What processes associated with energy occur within the *Elodea*? Explain your answer.

2. Identify the products of the processes described above?

3. Describe the processes that occurred in each flask. What evidence do you have that these processes occurred?

4. In another experiment, the scientist exhaled through a tube that led into a flask containing bromthymol blue. She then placed a sprig of *Elodea* in the flask, put the stopper in it, and placed it in a sunny windowsill. Predict what she observed.

