

Title: History and the Equation for Photosynthesis

Introduction: The equation for photosynthesis did not spring, fully-formed from a single scientific experiment. It took hundreds of years and the work of many scientists to find out how plants make food and grow. This single equation is the basis for all life on Earth. In this activity, you will answer the question "Where does the matter in a piece of wood come from?"

Procedure:

1. Hand out the "Experiment" cards to students in your group. Each person will have one or two.
2. One student should record on the butcher paper, in pencil, the equation as you work on it. Start with the basic form:

reactants \longrightarrow products
3. Each student should read the results of their experiment and suggest what to add to the formula. Continue until all experiments have been read.
4. Draw arrows to show where each atom in the reactants is found in the product.
5. Darken your equation with a marker and be prepared to present it to the class.
6. Answer the analysis questions.

Data:

Our equation:

Analysis Questions:

1. Why wouldn't Joseph Priestly have known that oxygen exists?
2. Which experiment seems most important? Why?
3. Experiment E and F proved the same thing but in different ways. What was shown in these experiments?

4. Where does most the mass of a piece of wood come from?

5. How might the increase in the amount of carbon dioxide in the air affect plant life on Earth?

Why?

Conclusion: