

2. Experiment 1: In the first experiment, scientists used carbon dioxide made with labeled carbon atoms so that they would be able to see where the carbon atoms ended up after the carbon dioxide and water molecules reacted. Table 3.6 summarizes their data.

Table 3.6. Location of Labeled Atoms (highlighted) at the Beginning and End of Experiment 1

	Starting Substances (Reactants)		Ending Substances (Products)	
Experiment 1	C^{14}O_2	H_2O	$\text{C}_6\text{H}_{12}\text{O}_6$	O_2

- a. What can scientists conclude from Experiment 1 about the carbon atoms? What piece of data can they cite as evidence for their conclusion?
- b. Does the data provide evidence for a conclusion about where the oxygen atoms from carbon dioxide end up? Why or why not?
3. Experiment 2: In the second experiment, scientists used water made with labeled oxygen atoms and looked to see where the oxygen atoms ended up after water and carbon dioxide reacted. Table 3.7 summarizes their data.

Table 3.7. Location of Labeled Atoms (highlighted) at the Beginning and End of Experiment 2

	Starting Substances (Reactants)		Ending Substances (Products)	
Experiment 2	CO_2	H_2O^{18}	$\text{C}_6\text{H}_{12}\text{O}_6$	O_2

- a. What can scientists conclude from Experiment 2? What piece of data can they cite as evidence for their conclusion?