

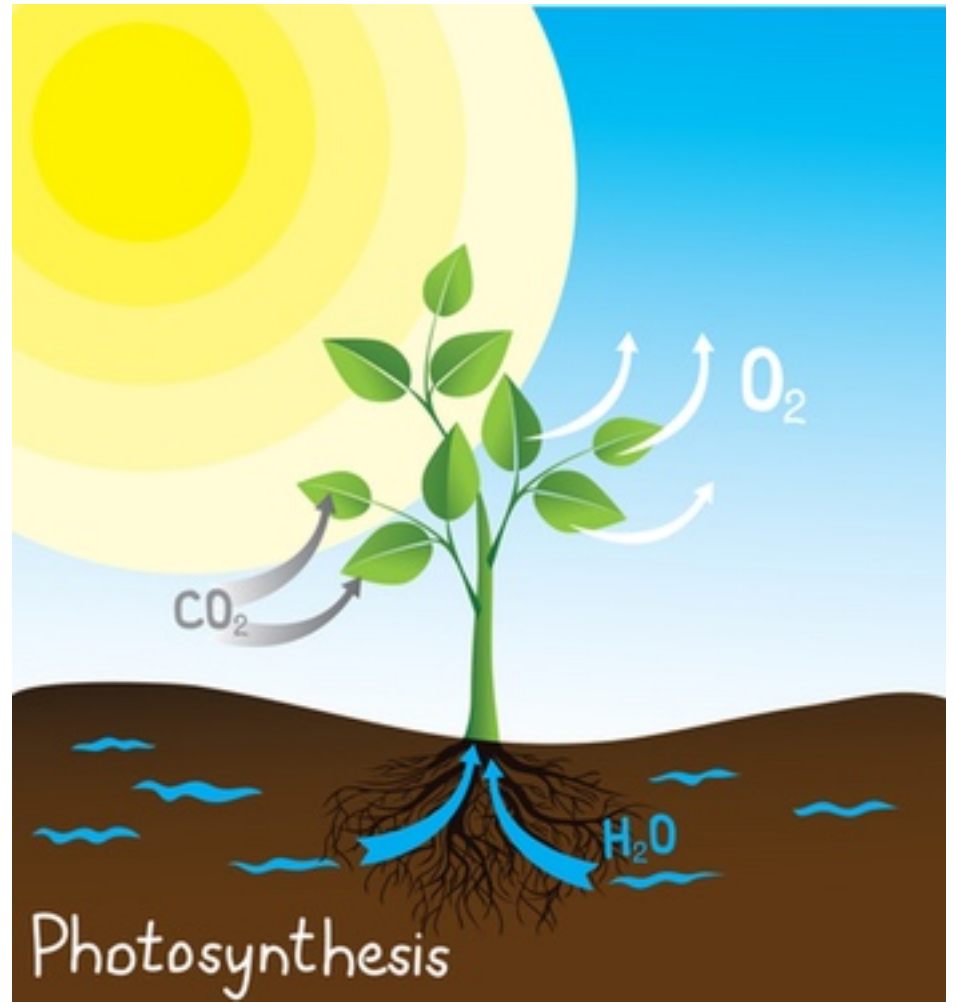
# Conservation of Matter

# Question

- What is the main way plants get molecules into their body (inside themselves)?

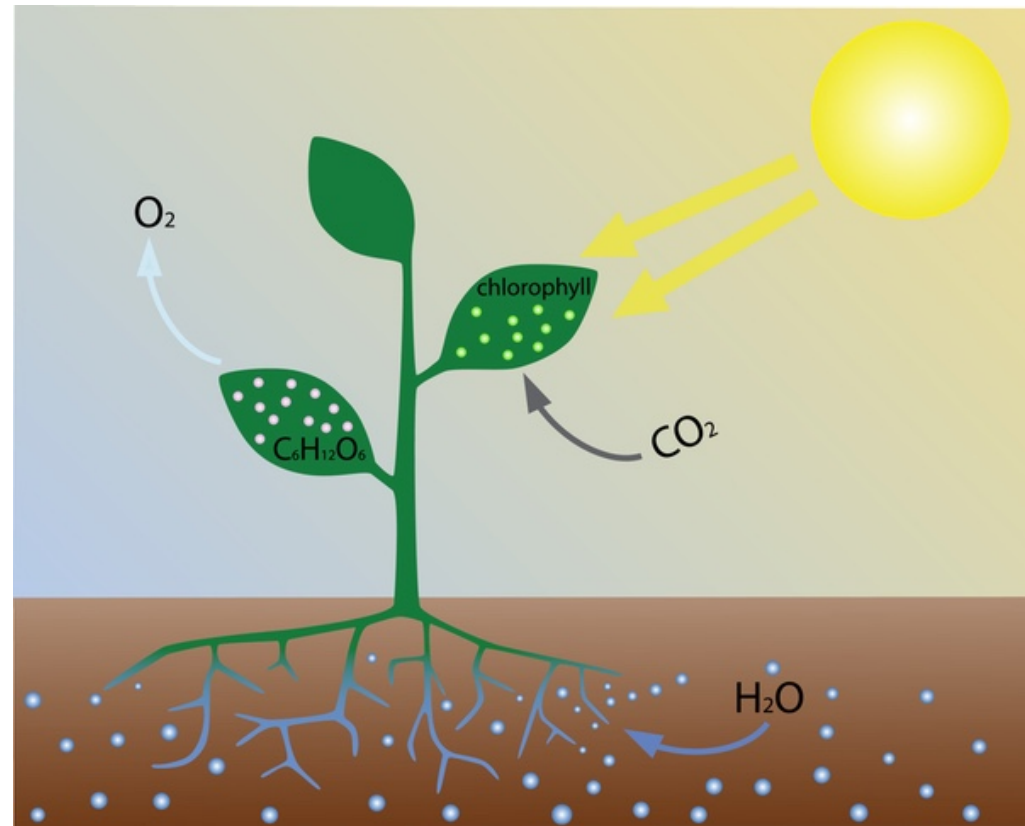
# Answer

- Minerals and water through the roots
- Carbon dioxide through the leaves

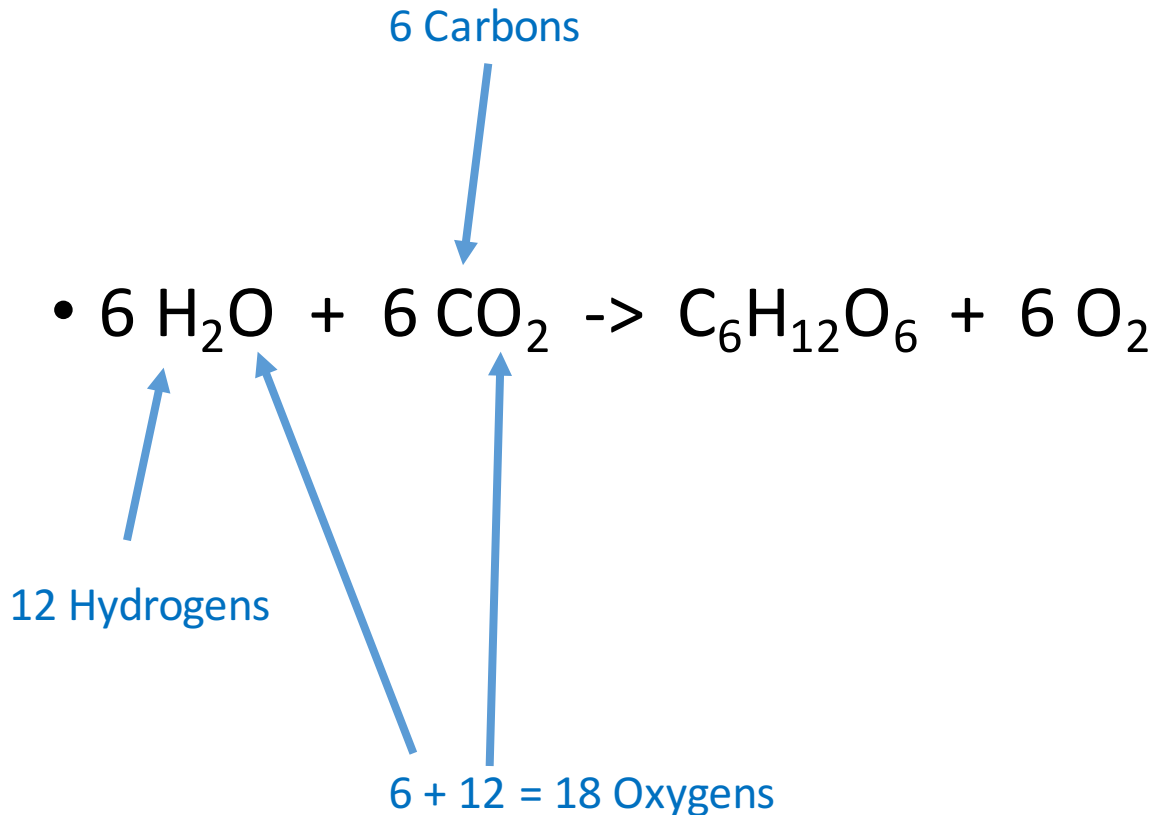


# Photosynthesis

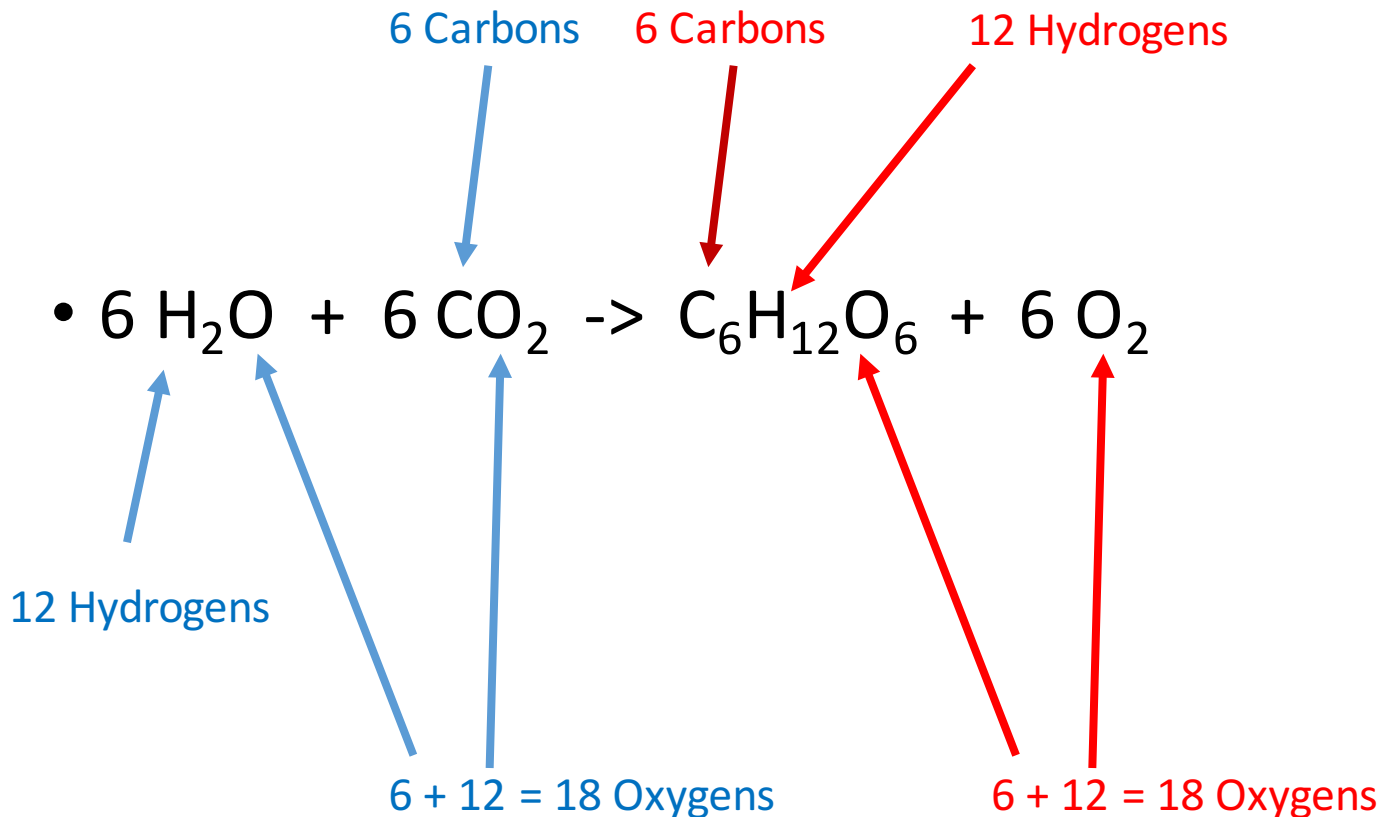
- Plants break the  $\text{H}_2\text{O}$  and  $\text{CO}_2$  to make new molecules.
- $6 \text{H}_2\text{O} + 6 \text{CO}_2$  get rearranged into  $\text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{O}_2$



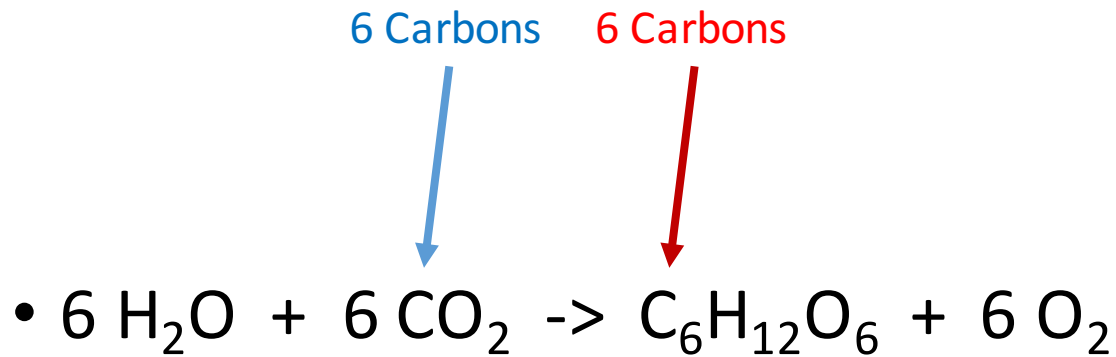
# Photosynthesis Chemical Equation



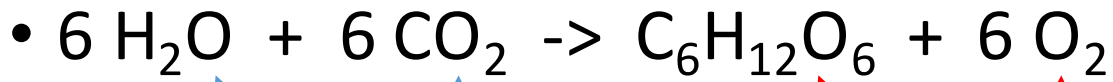
# Photosynthesis Chemical Equation



6 carbon atoms on the left and 6 carbon atoms on the right.



18 oxygen atoms on the left and  
18 oxygen atoms on the right.

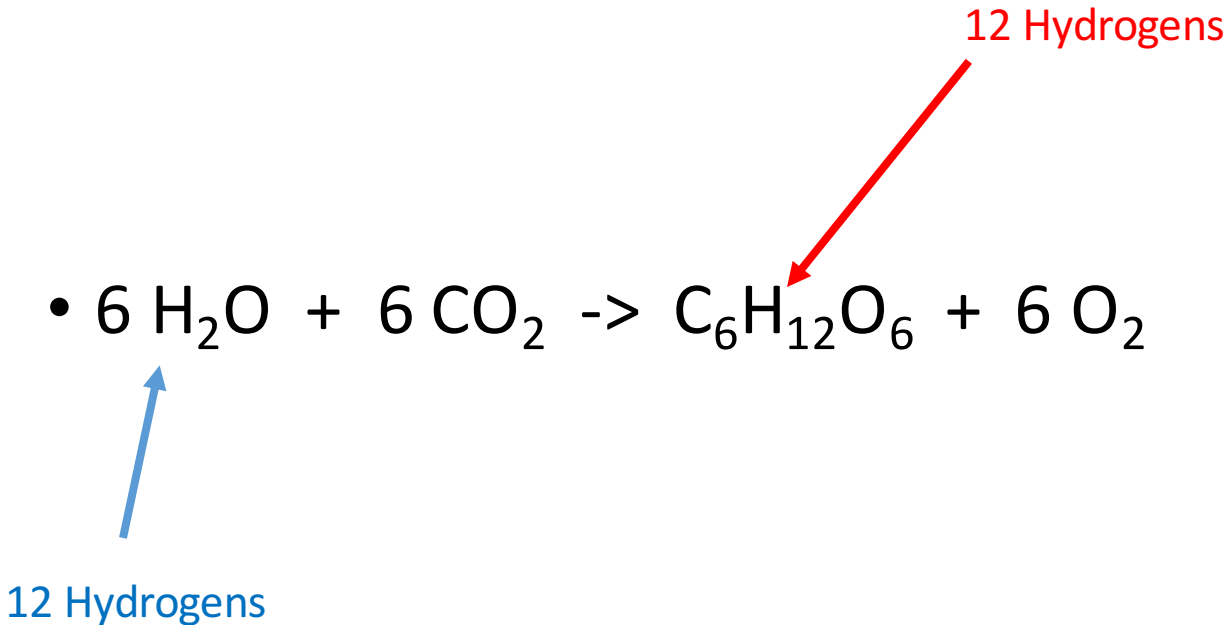


6 + 12 = 18 Oxygens

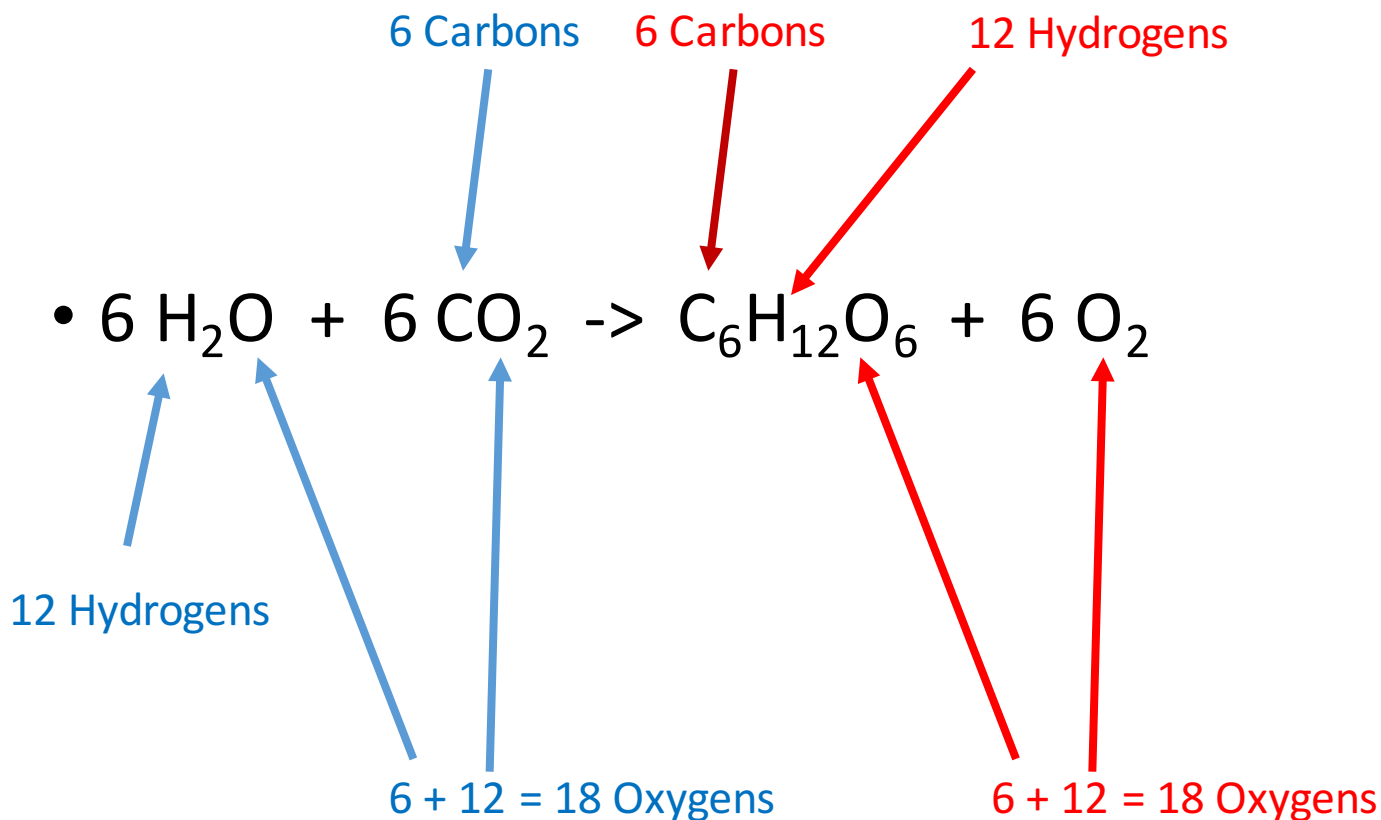
6 + 12 = 18 Oxygens



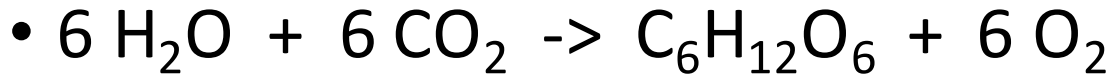
12 hydrogen atoms on the left and 12 hydrogen atoms on the right.



Notice ALL of the atoms are in equal numbers on both sides of the chemical equation.



# Balanced Chemical Equation



- Atoms can not be created nor destroyed, they are just transferred.
- This transferring of atoms is called the **Law of Conservation of Matter**.

# Metabolism

- Metabolism is just a chemical reaction, like photosynthesis.
- There are many more chemical reactions in a cell.  
For example:
  1. Cellular Respiration
  2. Dehydration Synthesis
  3. Hydrolysis