Atom Recipes

Name:

Period:

You've been learning about photosynthesis and cellular respiration. This includes some things that look like strange math equations, which describe what is going on during these cell processes. For this exercise, we'll be focusing upon what these equations mean.

To start with, you should notice that each equation has the same letters showing up, over and over: C, H, and O. Each of these letters represents a particular element. In the space below, write the name of the element that is described by its symbol.

C stands for the element _____

H stands for the element _____

O stands for the element _____

Next, we'll take a look at how these atoms fit together (to form molecules) to make different things. You probably already know the chemical formula for water:

H_2O

Think of this formula as a recipe. It tells you what ingredients (atoms) you need to make water with the letters, and how many of each kind of atom you will need with the little numbers. In this case, 2 atoms of hydrogen, and one atom of oxygen, are required. For each of the molecules below, describe what kind of atoms are needed, and how many of each will be used to make...

...carbon dioxide

CO_2 will need _____ atom of _____ and _____ atoms of _____

...oxygen

O_2 will need _____ atoms of _____

...glucose (sugar)

$C_6H_{12}O_6$ will need _____ atoms of _____ , _____ atoms of _____ , and

_____ atoms of _____

What "ingredients" are needed for the process of photosynthesis? *[hint: textbook p.148]*

_____ and _____ and light energy

What does the process of photosynthesis make? *[hint: textbook p.148]*

_____ and _____

What "ingredients" are needed for the process of cellular respiration? *[hint: textbook p.149]*

_____ and _____

What does the process of cellular respiration make? *[hint: textbook p.149]*

_____ and _____ and energy (ATP)

Work: 12 points