**Photosynthesis Visualization**

1. Close your eyes. Take a few deep breaths and relax. We are about to take a hike and explore the world of photosynthesis. (When all appear relaxed, begin reading.)
2. Imagine that you are walking through a beautiful green forest. It is a gorgeous spring day and the sun is shining brightly above you. (pause).
3. Pretend that you have the ability to make yourself much, much smaller than you are now. Maybe you do this by drinking a special potion or eating a magic seed or by some other means. You need to be so small that you become microscopic. Begin shrinking now.(pause)
4. You are now so small that you can climb up the stem of a nearby small plant. Once you climb up the stem, you arrive at a leaf. On the underside of the leaf you notice a small opening called a pore. Several things seem to be going into and out of the pore. You decide to go in and see what is going on.
5. Once inside, you look around and see hundreds of thousands of small rooms that resemble cells. Different activities are going on inside these cells. (We will visit all these rooms later in our tour.) You notice that each room has a steady supply of water running through it using the veins of the leaf. It looks much like a stream running through the entire leaf. You notice that the rooms of the cell look like an assembly line of a factory. One room, closest to the pore you entered, is gathering up a gas called carbon dioxide and putting it into a special chamber for later use in the factory.
6. Now open your eyes and draw your leaf cell as if it were a factory. Make sure you draw the water running through the cells, the special collection area for carbon dioxide and the sun shining brightly outside your cell.
7. Close your eyes again. As you continue walking around this leaf cell, you notice a big green oval disk shaped object that seems to be moving and turning in the direction of the sunlight hitting it. You know that this is the chloroplast, the light radar system of the plant cell. Open your eyes and add the chloroplast or light radar system to your diagram.
8. Close your eyes again. As you look more closely at the cell, you notice many more chloroplasts stacked on top of each other, like a stack of pancakes. There seems to be some darker green “sprinkles” on the stack of chloroplasts. These are the actual chlorophyll molecules. These stacks of chloroplasts are soaking up the sun like sunbathers on a beach. Open your eyes and add the stack of chloroplasts to your drawing.
9. Close your eyes again. Let’s focus on the chlorophyll “sprinkles”. These molecules are like little energy reactors. They collect the sunlight and convert it into energy used to split the water molecules that are flowing through the cell. Each water molecule will get split into hydrogen and oxygen. The oxygen will leave through the pore. Hydrogen gets escorted by a special escort molecule and placed into a holding cell for later in the process. Open your eyes and draw the chlorophyll molecule splitting the water molecule into hydrogen and oxygen. Oxygen leaving the cell through the pore and hydrogen being escorted to a holding cell.
10. Close your eyes again. Once the chlorophyll molecule splits the water molecule, it has some left over energy that it uses to form a new molecule called ATP. ATP is like a backup energy supply used after the sun goes down. ATP empowers the escort molecule that is holding the hydrogen prisoner. Open your eyes and show the ATP generator being formed from leftover energy from the chlorophyll and ATP super charging the escort molecule.
11. Close your eyes again. Now that the escort molecule has been super charged by the ATP generator, the escort molecule will escort the hydrogen to the carbon dioxide chamber (introduced earlier in the story). Once hydrogen and carbon dioxide are introduced, a fight breaks out. The escort molecule leaves the scene but carbon dioxide and hydrogen mix it up until they become a new molecule called PGA. PGA molecules combine with one another to form glucose, a sugar. Once sugar is made, it will be stored in a specialized area of the cell factory. Open your eyes and draw the fight between hydrogen and carbon dioxide, formation of the new PGA, and eventually glucose being made and stored for later use.
12. The process of photosynthesis is now complete. Pause for a moment and reflect on the tour you just took through the cells of the leaf. But before we finish, it is time to leave the leaf cell through the pore, and make yourselves normal sized again.
13. Take the time to share your experience with someone nearby.