



Unit 3 Section 2 Lesson 2: Presto, Changeo

Handout 2

Photosynthesis Recipe

PHOTOSYNTHESIS RECIPE: A Creative Dramatics Simulation

Green plants make their own food
Food is needed to exist
The way that green plants make food is
PHO - TO - SYN - THE - SIS!

Sunlight provides the energy (If some children have been given green squares, they come to the clear space.)

And next comes H₂O (Four H₂O molecules come to the open space.)

That's a fancy name for water,
In case you didn't know.

Some water is made within the leaf (Invite four more H₂O's to join the group in the open space.)

By chloroplasts, special cells

But water is sucked up through the roots
To provide H₂O as well. (Call four more H₂O's to join the team. Have them join H₂O's in the space.)

Within the leaf, the chloroplasts
Split H's from the O's (The children with green squares collect the blue circles in sets of two.)

The tiny O's find partners
And from the leaf they go! (The sets of two blue circles are given to the instructor.)

This O₂ given off by plants,
Animals need to stay alive
They inhale the oxygen
And need it to survive.

The hydrogen molecules left behind
Wait for CO₂ to join their dance. (H's circle left and right.)
And CO₂'s arrival is not left up to chance!

In leaves, holes called stomata
Take CO₂ from the air (Three CO₂ children are invited to join the circling H's.)

Animals exhale it
And so it's everywhere! (Three more CO₂ children join the group and circle.)

The plant now has just what it needs
To produce a meal that's sweet
The recipe for making lunch
Is really rather neat!

To 12 H's add 6 oxygen (Six CO₂ children exchange an oxygen circle for a hydrogen circle with the 12 hydrogen children.)

Add 6 carbon to the dozen

Mix well, but very gently (All the children weave in and out, under and over, and drop their circles on the floor as they "dance".)

The light provides the oven!

The meal when finished

Looks like this: (All the children sit in a circle around the dropped atoms.)

C₆, H₁₂, O₆

1. Put the formula on the board, pointing out the number of each kind of atom that is needed.
2. Have each child choose a circle (an atom) from the floor, which they will be able to add to the recipe.
3. Tally the type of atom chosen to help children select one they can contribute.
4. Have the children take turns and place their chosen atom in the center to form the pattern C₆ H₁₂ O₆.



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There are some atoms left over. (12 hydrogen atoms and 6 oxygen atoms will not be used.)

Do you know what they do? (Guide the children to realize that these left over atoms can be used to make 6 water molecules: H_2O .)

And so the plant begins again
To produce a tasty treat
With sunlight, CO_2 and chlorophyll
They'll make a meal that's sweet!

