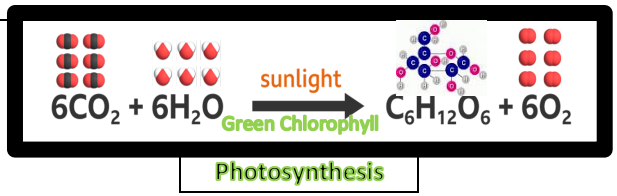
The Law of Conservation of Matter (Mass) - **Name** **Period**

Matter (and Mass) is neither created nor destroyed, only rearranged, during normal chemical reactions.



Modeling: Illustrated chemical equations to show of atoms and total mass.

___1) Use a different color for each element.

___2) Look up and write each equation so you get the numbers correct.

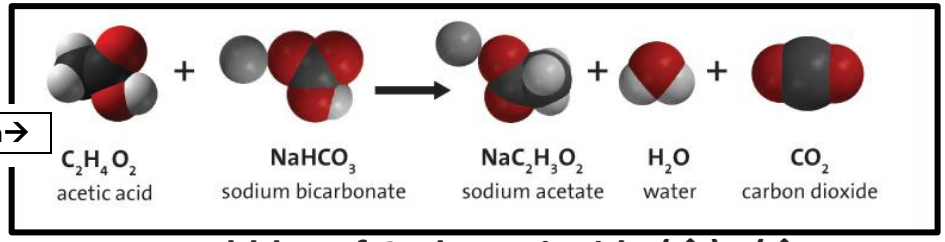
___3) Use the KEY, a COUNT of atoms and the TOTAL MASS for each reactant and product.

Key
Blue = Carbon
Red = Oxygen
Pencil = Hydrogen
_____ = Nitrogen
_____ = Sodium
_____ = Chlorine

_1. Hydrogen burning in Oxygen (oxidation):

	Reactants	→	Products
Balanced Word Equation	2 Hydrogen + Oxygen	→	2 Water
Balanced Equation→	$2H_2$ + O_2	→	$2H_2O$
Model To Show Atoms→	HHHH + OO	→	HHHH OO
Mass Calculations (amu)→	4X1 + 2X16	→	4X1 + 2X16
Mass Totals→		→	

Vinegar & Baking Soda→



_2. Vinegar + Baking Soda →Sodium Acetate + Water + many Bubbles of Carbon Dioxide (↑) (↑= as a gas)

Balanced Word Equation →

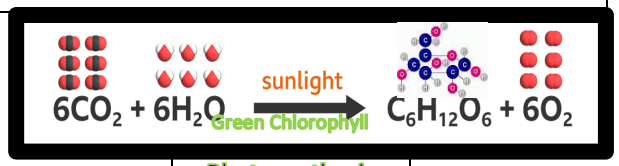
Equation→

Model to Show Atoms→

Mass Calculations (amu)→

Mass Totals→ →

The Law of Conservation of Matter (Mass) -Page 2 **Name** **Period**



_3. Photosynthesis: Plants change the energy of the sun to glucose (sugar or food):

Water + Carbon Dioxide $\xrightarrow[\text{Green Chlorophyll}]{\text{Light energy}}$ **Glucose (sugar or food) + Oxygen**

Word Equation

Balanced Equation→

Model to Show Atoms→

Mass Calculations (amu)→

Mass Totals→ ☐ → ☐

_4. Respiration: Animals use glucose (sugar or food) and Oxygen (oxidation) for energy:

Glucose + Oxygen → Water + Carbon Dioxide + energy

Word Equation

Balanced Equation→

Model to Show Atoms→

Mass Calculations (amu)→

Mass Totals→ ☐ → ☐

_5. Sodium burning in Chlorine forms Sodium Chloride.

Word Equation

Balanced Equation→

Model to Show Atoms→

Mass Calculations (amu)→

Mass Totals→ ☐ → ☐