

Combustion Reactions

Essential Standard:

I can use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction. NGSS HS-PS1-7

Learning Targets:

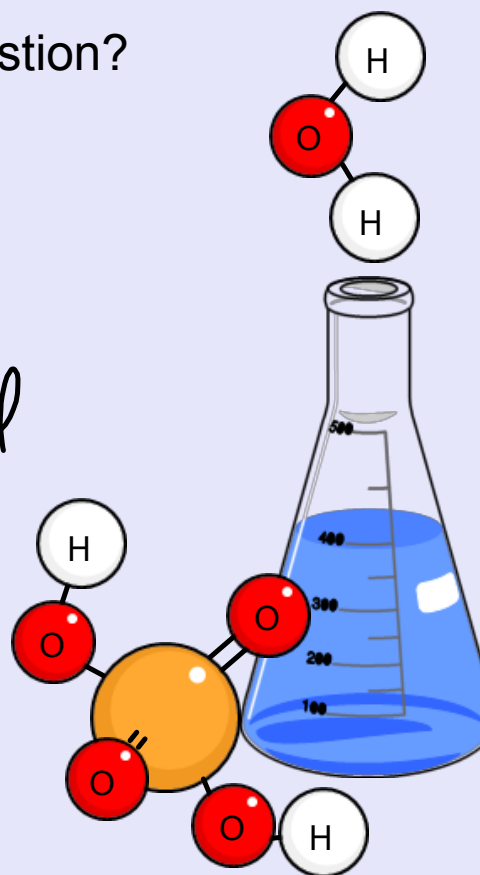
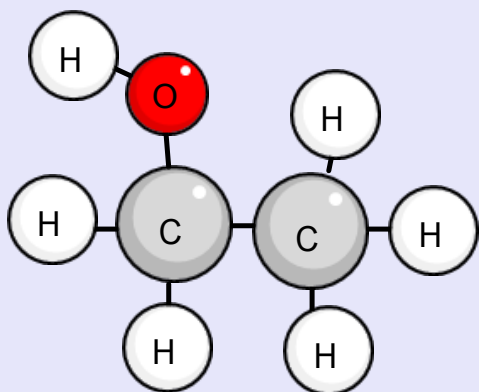
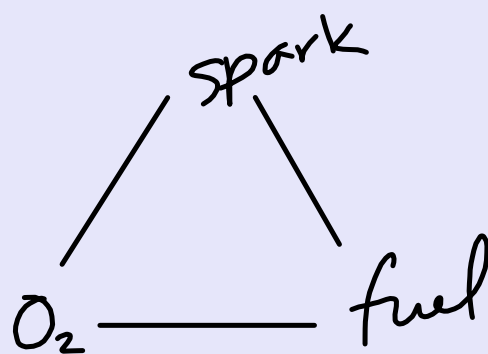
#1-2 Chemistry involves chemicals that undergo chemical reactions:

- « I can predict the products and balance a combustion of an organic compounds.
- « I can differentiate between incomplete and complete combustion.

<http://phet.colorado.edu/en/simulation/balancing-chemical-equations>



What are 3 requirements of combustion?

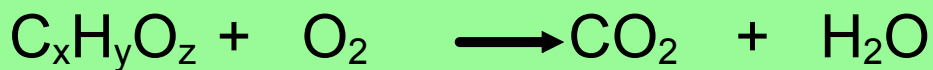


Learning Target: I can differentiate a complete and incomplete combustion reaction

Combustion reactions

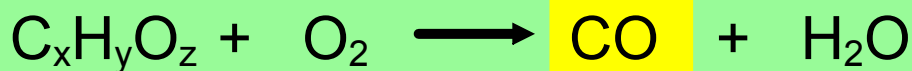
two types

Complete combustion:
(excess oxygen)

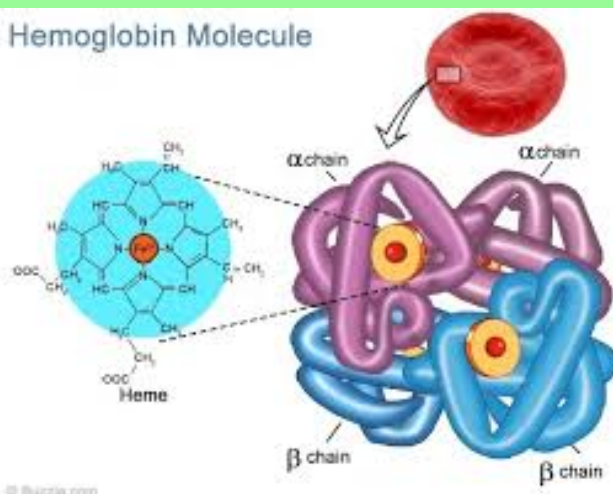


Incomplete combustion

(not enough oxygen)

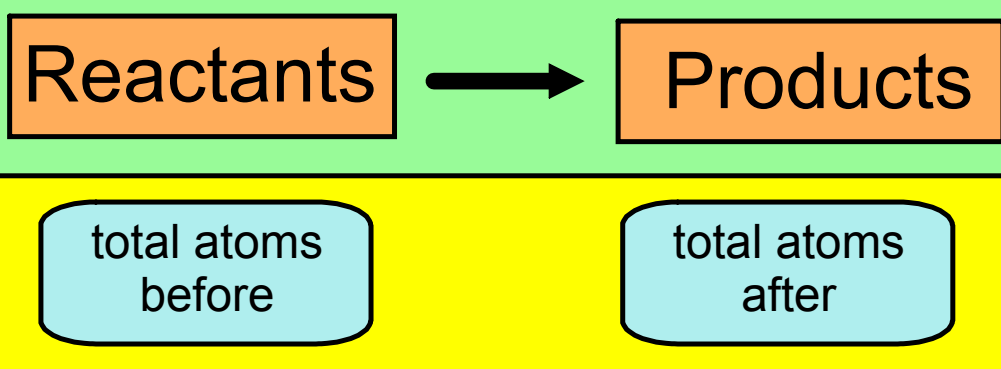


↓
deadly carbon
monoxide !!



Learning Target: I can balance a combustion reaction

Balancing Reactions



M=

M=

F=

F=

Law of Conservation of Matter

↑
"keep constant"

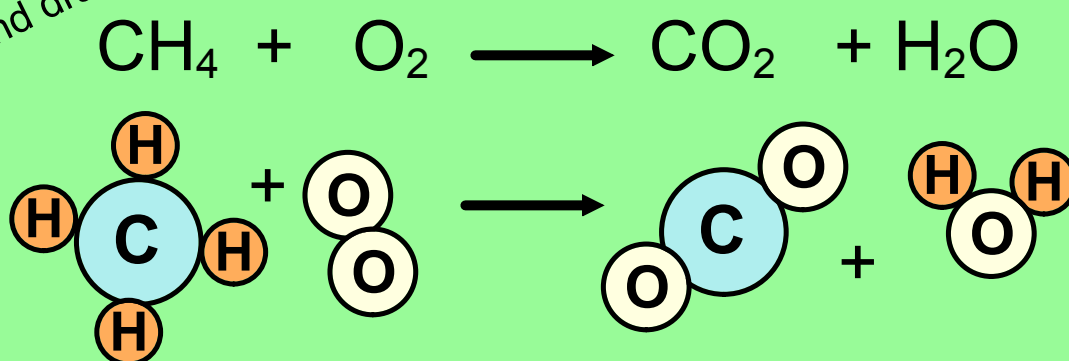
- matter cannot be created or destroyed
- chemical equations must be balanced

Learning Target: I can balance a combustion reaction

Practice:

- add or change **coefficients only**
(not formulas, not subscripts)

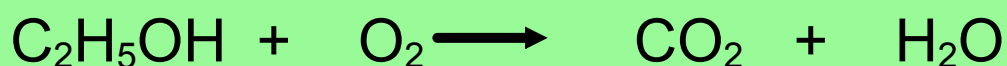
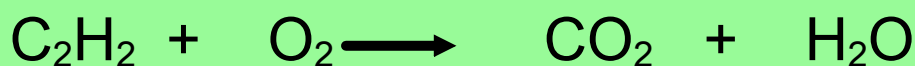
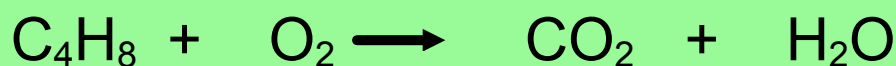
Write the equation
and draw the molecules



Learning Target: I can balance a combustion reaction

Balancing combustion reaction tips

1. Best order: C,H,O
2. Look for oxygen everywhere. Save O₂ for last.
3. Odd/even oxygen rule:
double everything, then adjust O₂
4. Always recheck your work



Attachments

watch.webloc