

I'm here at lunch every day.

Come for just 5 minutes, it helps.

Purpose:

Where in a chemical equation should we write "Energy"?

WARMUP :

Name each.

Br_5I pentabromine monoiodide

N_2O_5 DINITROGEN PENTOXIDE

K_2O Potassium oxide (Metal!
NO mono
di
tri)

#1 Recall the three kinds of energy we learned in October:



E_{th} means thermal (amount of VIBRATIONS)

E_{ph} means phase (HIGH = GAS
Med = LIQUID
LOW = SOLID)

E_{ch} means chemical (energy hiding in the different formulas of chemicals)

#2

Most reactions either take in or give off energy

$A \rightarrow B + \text{energy}$	$A + \text{energy} \rightarrow B$
the substances gave off energy	the substances took in energy
There's more energy hidden inside the <u>A</u>	There's more energy hidden inside the <u>B</u>
feels <u>hot</u>	feels <u>Cold</u>
E_{ch} looks like: 	E_{ch} looks like: 
Memorized word: ENDOTHERMIC EXOTHERMIC	ENDOTHERMIC

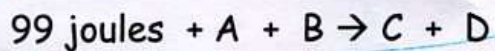
#3

Some units for energy are:

$$4.184 \text{ joules} = 1 \text{ calorie}$$

#4 Two ways to write an exact number for the energy in a reaction:

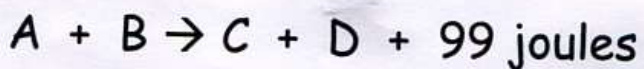
if A, B, C, and D are substances



IS THE SAME AS WRITING



$$\Delta H = +99 \text{ joules}$$



IS THE SAME AS WRITING



Use negative: $\Delta H = -99 \text{ joules}$



	A	E
Name	N	
Period	S	R
	W	S

Predict the products for the following reactions then balance the equation,

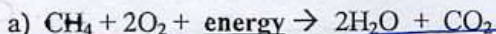
Write the complete reaction as a **balanced** reaction.

(combustion of C_4H_{10})
(combination) pure calcium reacting with pure fluorine to just a single product
(combination) calcium chunks and bromine liquid react to form a single solid substance (write the phases before you balance it)
(single replacement) $Na + CaSO_4 \rightarrow ? + ?$
(Double Replacement) $AlBr_3 + K_2SO_4 \rightarrow ?? + ??$
(Single Replacement) $CuCl_2 + Al \rightarrow ?? + ??$

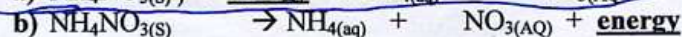
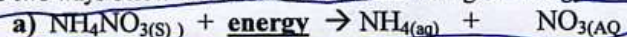
$2C_4H_{10} + 13O_2 \rightarrow 8CO_2 + 10H_2O$
$Ca + F_2 \rightarrow CaF_2$
$Ca_{(s)} + Br_{2(l)} \rightarrow CaBr_{2(s)}$
$2Na + CaSO_4 \rightarrow Na_2SO_4 + Ca$
$2AlBr_3 + 3K_2SO_4 \rightarrow Al_2(SO_4)_3 + 6KBr$
$3CuCl_2 + 2Al \rightarrow 2AlCl_3 + 3Cu$

Did you remember to balance the six reactions above?

Chemical reactions either absorb or give off energy. This can be shown by writing energy as a reactant or product. Which of the two ways below would best describe this change of energy for a combustion reaction? (this is new for us – just make your best guess and we'll give the answer tomorrow)



When ammonium nitrate dissolves, the solution feels cold to touch. Which of the two ways below would best describe this change of energy?



You're not finished yet. Make sure you also (1) get the lab ready to hand in Friday and (2) re-do old worksheets to get ready for the Friday Quiz