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| *Energy in Reactions*CλeMis+ry: http://genest.weebly.com Stop in for help every day at lunch and Tues &Thurs after school! |  | Name\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_\_\_ |

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| Joule's Churn |
| 1. If the **candle** is the system draw two bars in your bar graph and circle the correct choices:

Heat is ( entering / leaving ) the system. | 1. If the system is **THE AIR** above the candle

Heat is ( entering / leaving ) .Energy of the system is (increasing / decreasing ). | 1. If the **water** in Joule’s churn is the system

The change to the system is (exothermic / endothermic ). | 1. If the system is **THE AIR** around the snowman

The change to the system is (exothermic / endothermic ). |

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| http://us.cdn2.123rf.com/168nwm/serezniy/serezniy1011/serezniy101100537/8282488-test-tube-in-hand-over-violet-background.jpg | If you mix some Barium Chloride and distilled water in a test tube and hold It in your hand, it feels cold! |
| 1. If **the water and chemicals** are defined as the system, the change in energy was

 ***ΔE* = (positive / negative )**The change was ( exothermic / endothermic) | 1. If **YOUR HAND** is defined as the system, the change in energy was

 ***ΔE* = (positive / negative )**The change was ( exothermic / endothermic) |

1. In exothermic reactions, is the energy of the products less or greater than that of the reactants?
2. In an endothermic reaction, is the energy of the products less than or greater than that of the reactants?
3. Convert each of the following energy units:
	1. 8.1 kcal to cal
	2. 2.50 kcal to J



Some substances reacted in two flaskes. For each stzatement below, choose either Reaction A or Reaction B

1. \_\_\_\_\_\_\_\_ For the substances in the reaction Ech is decreasing
2. \_\_\_\_\_\_\_\_ The reaction could be written A + energy 🡪 B
3. \_\_\_\_\_\_\_\_ The reaction could be written A 🡪 B ∆H = -500kJ
4. \_\_\_\_\_\_\_\_ The ∆H = + 300 kJ
5. \_\_\_\_\_\_\_\_ The reaction is exothermic
6. \_\_\_\_\_\_\_\_ The reaction would feel cold if you held the flask in your hand.

Energy in Chemical Reactions

1. Classify the following as exothermic or endothermic:
2. 550 kJ is released
3. The energy level of the products is higher than that of the reactants.
4. The metabolism of glucose in the body provides energy.
5. The energy level of the products is lower than that of the reactants.
6. 125 kJ is absorbed.
7. Classify the following as exothermic or endothermic reaction and **give ΔH** for each:
8. Gas burning in a Bunsen burner: CH4 + 2O2 → CO2 + 2H2O + 890 kJ
9. Dehydrating limestone: Ca(OH)2 + 65.3 kJ → CaO + H2O
10. Formation of aluminum oxide and iron from aluminum and iron(III)oxide:
11. 2Al + Fe2O3 → Al2O3 + 2Fe + 850 kJ
12. Combustion of propane: C3H8 + 5O2 → 3CO2 + 4H2O + 2200 kJ
13. Formation of table salt: 2Na + Cl2 → 2NaCl + 2H2O + 819 kJ
14. Decomposition of phosphorous pentachloride: PCl5 + 67 kJ → PCl3 + Cl2