**Chemical Reactions Argument**

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| **Q:** What combinations of reactants are responsible for causing the HEAT, the YELLOW COLOR CHANGE, and the GAS FORMATION? | | | | | |
| **C:** The reactants responsible for producing HEAT are: CaCl2 + H2O  The reactants responsible for the YELLOW COLOR are: CaCl2 + NaHCO3 + H2O + C19H14O5S (*phenol red*)  The reactants responsible for GAS FORMATION are: CaCl2 + NaHCO3 + H2O | | | | | |
| **E:** | Reactants | Heat Released | Yellow Color Change | Gas Produced | **J:** Chemical reactions occur when chemical bonds are broken and re-formed. The original chemicals involved are called “reactants”, and the new substances that are formed are called “products”. The products are composed of the same atoms that made up the reactants according to the law of conservation of mass.  Sometimes, when chemical bonds are broken and new substances are formed, energy is released in the form of heat, light, or sound. When heat is released, it is called an “exothermic reaction”.  Changes in properties such as a color change or the formation of new substances such as gas are also indicators that a chemical reaction has occurred. |
| P.R.+B.S+C.C | X | X | X |
| W.+B.S.+C.C. | X |  | X |
| P.R.+B.S. |  |  |  |
| W.+B.S. |  |  |  |
| P.R.+C.C. | X |  |  |
| W.+C.C. | X |  |  |
| B.S.+C.C. |  |  |  |
| * Heat is produced only when C.C. reacts with water (water is present in P.R. solution) * Color changes when P.R. solution (P.R. powder and water) reacts with C.C. (pink), B.S. (pink), or both (yellow) * Gas formation takes place most noticeably when B.S. **AND** C.C. react with water (water is present in P.R. solution) | | | |