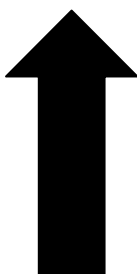


Chapter 6, Lesson 7 Activity Sheet Answers

1. When baking soda and vinegar are combined, the temperature went down.
2. Answers will vary but should probably be about 15 °C.
3. When a baking soda solution and calcium chloride are combined, the temperature increases.
4. Answers will vary but may be above 90 °C.
5. The baking soda and vinegar reaction is endothermic.
- 6.



7. In the baking soda and vinegar reaction, there is a larger arrow going in on the reactant side and a smaller arrow going out on the product side. This shows that it took more energy to break the bonds of the reactants than was released when the products were formed.
8. The baking soda solution and calcium chloride reaction is exothermic.
- 9.



10. In the baking soda solution and calcium chloride reaction, there is a smaller arrow going in on the reactant side and a larger arrow going out on the product side. This shows that more energy was released when the products were formed than it took to break the bonds of the reactants.
11. The self-inflating balloon is an example of an endothermic reaction.
The hand warmer is an example of an exothermic reaction.
12. For the hand warmer, more energy is released when the products are formed than it takes to break the bonds in the reactants.

13. For the self-inflating balloon, it takes more energy to break the bonds in the reactants than is released when the products are formed.
14. In the reaction between a magnesium sulfate solution, universal indicator, sodium carbonate solution, and citric acid, there is a color change, formation of a precipitate, and production of a gas. These are all clues that a chemical reaction is taking place.
15. There was no obvious temperature change even though bonds must have been broken and formed in the chemical reactions. Maybe the energy required to break the bonds in the reactants is very similar to the amount of energy released when the bonds in the products are formed. Maybe there is a small temperature difference but the thermometer is not sensitive enough for it to be observed.