

Name \_\_\_\_\_

# EXOTHERMIC & ENDOTHERMIC

**Directions:** Read the information below.

Arthropods have exoskeletons, which means their skeleton is on the outside of their bodies. Mammals, on the other hand, have endoskeletons because our bones are inside our bodies. This is not the only time in science you will see the prefixes “exo-” and “endo-”. In chemistry, the transfer of heat is labeled as either exothermic or endothermic.

An exothermic reaction is one that releases heat. One example of this is a candle. When a candle is lit, the resulting fire releases heat and warms the surrounding area. Heat is given off. Burning sugar is another example of an exothermic reaction. A scientist will know a reaction is exothermic by testing the temperature of the initial substance, then allowing a reaction to occur by adding a second substance. If the temperature of the mixture increases, we know that heat is being released and the process is exothermic.

The opposite of this is called an endothermic reaction. An endothermic reaction is one that absorbs heat. In real life, this can be seen when an ice cube melts, or water boils into vapor. Heat must be added and is required to make the reaction occur. Thus, the temperature of the surrounding area is decreased as the thermal energy has moved into the substance.

**Directions:** Answer the questions below.

1. What is the difference between endothermic and exothermic reactions?
2. How could you measure which type of thermal reaction has taken place?
3. Match the reaction to the result by drawing a line to connect them.

**Endothermic reaction**

**Temperature stays the same**

**No thermal reaction**

**Temperature increases**

**Exothermic reaction**

**Temperature decreases**

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings present.