







Curling Metals

Students will learn about thermal expansion as they test paper and metal strips.

6th - 8th
Grade

Materials

-  Aluminum foil
-  Printer paper
-  Scissors
-  Glue stick
-  Candle
-  Matches or lighter

Directions

1. **Adult supervision recommended**
2. Cut 4 one-inch thick strips of aluminum foil (about 12 inches long) and 4 strips of one-inch thick printer paper (about 12 inches long).
3. Glue two aluminum strips together.
4. Glue two paper strips together.
5. Glue one aluminum strip to one paper strip. Repeat with remaining strips.
6. Light candle.
7. Hold the double aluminum strip about 2 inches over the flame for 3 seconds. Observe.
8. Repeat with the double paper strip.
9. Hold the paper/aluminum strip above the flame, aluminum layer facing the flame. Observe.
10. Repeat with second aluminum/paper strip, but this time with foil side facing away from flame. Observe.

What Happened?

As the different materials are exposed to the heat, they begin to expand. The strips with both sides made of the same material will expand at the same rate, and no changes will be noticed, other than hotter strips. When the bi-material strip is exposed to the heat source, the aluminum side will expand faster than the paper side, causing a curve in the strip!

