

Bi-Material Strip

- GLE 0807.9.2 Explain that matter has properties that are determined by the structure and arrangement of its atoms.
- GLE 0807.9.3 Interpret data from an investigation to differentiate between physical and chemical changes.
- GLE 0807.Inq.1 Design and conduct open-ended scientific investigations.
- GLE 0807.Inq.2 Use appropriate tools and techniques to gather, organize, analyze, and interpret data.
- GLE 0807.T/E.2 Know that the engineering design process involves an ongoing series of events that incorporate design constraints, model building, testing, evaluating, modifying, and retesting.

bi-material strip ...adapted from **KINETIC MODEL #14** by TOPS Learning Systems

1. Stick about 15 cm of clear tape to the dull side of aluminum foil. Trim away all untaped foil.

2. Hold your bi-material strip high above a flame. Which way does it bend?

3. Aluminum and tape **expand** when heating and **contract** when cooling.

a. Are the changes equal for both materials? Explain.

b. How does a bimetal strip work in a thermostat?

*** PROJECT:** Light a flashlight bulb with a candle. Use your bi-material strip, batteries, and other simple things.

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Construct the bi-material strip as shown in the diagram.

Answer questions 3a and 3b.

Write a procedure for the project. Try out your design.

Learn More Online

- Watch a video
 - Go to WatchKnow.org
 - Type in the search box Expansion and Contraction
 - Click Search
 - Click on the play button in the video window
 - Or enter the following address in your web browser
<http://www.watchknow.org/Video.aspx?VideoID=7238&CategoryID=631>