

## Thermal Expansion of Solids

Name: \_\_\_\_\_

**Aim:** To observe thermal expansion in a solid metal rod.

**Equipment:** Retort stand, boss head, Bunsen burner, metal rod, straw, pin, a stand with a flat surface such as a tripod.

### Method:

1. Attach one end of the metal rod to a retort stand and allow the other end to rest on a flat surface so that it is free to move.
2. Poke a pin through a straw and place the pin between the metal rod and the stand. (You may need to adjust the level of the boss head that is holding the metal rod.)
3. Set up a Bunsen burner under the metal rod and heat the metal rod.
4. After about 5 minutes, turn off the Bunsen burner and continue to make observations of the metal rod as it cools down.



**SAFETY WARNING:** The hot metal will take some time to cool down, so please be careful!

### Questions:

1. Describe what happened when the metal rod was heated.

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2. Atoms themselves don't get bigger when they are heated, so what causes thermal expansion?

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3. What happened when the metal rod was allowed to cool?

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