**Liquid Thermal Expansion**

In class today, Mr. Smith did two demonstrations.

Wall Cracks

In the first one, he walked around the halls with us, showing us cracks in the wall from when the architect didn’t design the brick layout right, so when the building expanded and contracted, the bricks cracked. He also showed us the expansion joints in the walls and the floor, which are hollow so that the building can get bigger and smaller without the walls and the floor cracking and buckling.

Water Thermometer

In the second one, he had water in a beaker with a stopper in it, and a straw or pipette coming out of a hole in the stopper. There was enough water that it went part way up the pipette. We marked where on the pipette the water came up to, and then put the beaker over the Bunsen burner. The water rose a good three inches up the pipette in a few seconds. This shows us that liquids expand.

Things I learned:

* There are expansion joints in floors and walls so that buildings do not crack when they expand and contract.
* There are also expansion joints in bridges, so that they do not end up with gaps in them.
* The Golden Gate Bridge was built in the 1930’s.
* The steel for it was ordered by the architect from a steel company in Pennsylvania.
* The steel company was called the Bethlehem Steel Company.
* They cut the steel in the summer.
* It then contracted, so when the bridge was built it was ten feet too short.
* The architect was furious.
* When you order steel, it is supposed to be the length that it would be at in 68°Fahrenheit (or 20 degrees Celsius).
* All liquids expand a lot more than solids.
* There are three liquids that expand way more than others.
* These are Liquid Petroleum, Gasoline, and Ether.
* Popcorn is basically starch foam.

