

## Calibrating a Blank Thermometer

### Materials:

- Boiling Water in a small container
- Ice Water in beakers
- Blank thermometer
- Grease pencils
- Graph paper where 11 lines are shorter than the area between hot and cold  
(or use the lines below, if they work for you)
- Room Temperature Water to test thermometers
- Ice in a cooler
- Beakers

1. Have a clean, blank thermometer.
2. Put it into boiling water and wait for it to stop moving.
3. Make a grease mark on the hottest spot.
4. Let it cool for a minute.
5. Place it into ice water while stirring.
6. Make a mark at the lowest spot.
7. Carefully dry the thermometer so that the marks are not disturbed.
8. Place the hot mark on one horizontal line on the graph paper.
9. Turn the thermometer diagonally so that the lowest mark lines up with the 11<sup>th</sup> line

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10. Make a mark at every line so that you have 0 - 100 degrees in 10 degree increments.
11. Test the thermometer in the room temperature water and record the temperature.
12. Compare the temperature that you measured with the real temperature shown by the teacher.

Teacher notes:

I did not have enough grease pencils so I had each of the A group tables go to boiling water and left the grease pencils there.

After the high and low marks were made with grease pencils, students used extra fine sharpies for their divisions.

Cleaning with alcohol between classes.

Four hot waters and four ice waters.