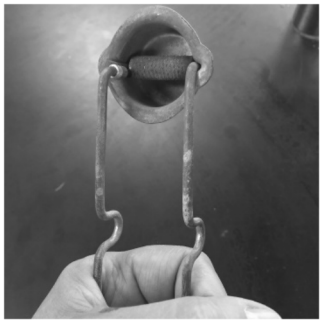
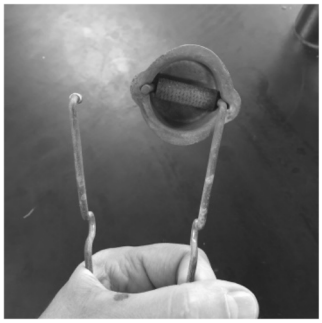
Temperature Lab

Name: _____ 40/1200

Objective: To learn how to measure with the centigrade scale thermometers; to practice temperature conversions, practice percent error, and practice Bunsen Burner safety.

Materials: Bunsen burner, lighter, ring stand, ring, large beaker, stupid water (ask me), smaller beaker, and a thermometer. You may NEVER EVER put the thermometer down. Hold it by the TOP, only.

1st: Observe demonstration of how to read a thermometer. To the NEARST 10th degree Centigrade.
2nd: Learn how to use the sparkers and replace the flints. Look at the 4 photos: closed, open, bad, and good
3rd: Observe how a Bunsen burner is lit safely. Think headphones, not a hat.
4th: Practice lighting and lifting the Bunsen burners. Be brave. First fill in the blanks on the photo.

To the left is a Bunsen Burner.

1. Draw a flame, indicate the HOTTEST PART OF THE FLAME, the "inner cone"

Draw lines to show where the

2. GAS ENTERS

3. AIR OR OXYGEN ENTERS

4. Show where the gas and air (the oxygen mix)

5. Show the valve to control the gas entering the Bunsen burner.

6. The gas is called _____ and has a chemical formula of _____
It will combust with the oxygen and form carbon dioxide and water, and LOTS of heat.

You need to make 4 temperature measures, to the NEAREST 10th degree centigrade. Never touch the bottom of a thermometers (unless you are measuring body temperature, which you are not!) Never lay them down!

Air temp to the nearest 10th degree _____°C actual value is _____°C

Tap water to the nearest 10th degree _____°C actual value is _____°C

Icy water to the nearest 10th degree _____°C actual value is _____°C

Boiling water to the nearest 10th degree _____°C actual value is _____°C

Lab Questions, to be done on loose leaf paper, NO SPIRAL FRILLS allowed. Use space between the questions so I can make notes back to you if necessary.

7. What was your percent error for the air temperature? (write a formula, watch SF)

8. What was your percent error for the tap water temperature? (write a formula, watch SF)

9. What was your percent error for the icy water temperature? (write a formula, watch SF)

10. What was your percent error for the boiling water temperature? (write a formula, watch SF)

11. What is meant by absolute zero? What is the temperature of absolute zero in Kelvin and in centigrade?

12. What is the melting point for iron in Kelvin?

13. Skip this one, okay?

14. How can the freezing point for iron also be 1811 K?

15. Convert the melting point of zinc into centigrade.

16. Write the WORD equation for the combustion of the Bunsen burner gas. There are 2 reactants and 2 products, plus energy is a third "product". Really cool if you can write the element and molecule symbols with phases too.

17. If the temperature of a solution changes from 12.0°C to 29.0°C, the change in temperature (which we call delta T, or we use this symbol: ΔT) is 17.0°C. What is the ΔT in Kelvin? This is tricky and won't be graded here, but this problem will come up a lot in chem, you MUST figure this out. If you need to, draw a diagram of 2 temperature scales next to each other.

This lab report	includes	points
Cover page	Science title, funny subtitle, an introduction sentence: Why did we do this lab? What was the point?	1
Lab handout	6 blanks to be filled in on the first page.	3
On Paper	16 Lab questions above	16
Loose Leaf Paper	conclusion: what did you learn, summary of your findings	5
deduct five points for lateness, due on: _____		25 total points.