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Day 03 Jan 29 The thermometer.  
Chemothermal sensation.

Fire and Ice

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2016

### 3.0.B Discussion Thermometer Development

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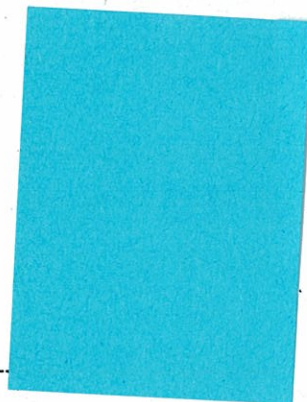
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# RECORDER REPORT, Chem 444A "Fire & Ice"

Group Member Name	Role
<u>Miriam Arsenault</u>	<u>Recorder</u>
<u>Heather Price</u>	<u>Spokesperson</u>
<u>Charles Coppette</u>	<u>N/A</u>
<u>Sean King</u>	<u>Reflector</u>
<u>Tim Klassen</u>	<u>Manager</u>

Date: 01/29/15



## Romer Scale

- Wine used as liquid (wine is alcohol & water mixture)  
↳ to avoid boiling and freezing problem
- Romer scale  $\Rightarrow$  1st calibrated scale so it was more accurate since it had markings
- Fahrenheit used some of Romer's ideas

## Thermoscope

- showed change in temperature and change in air pressure
- Galileo supposedly made 1st thermoscope

## Evolution of the Thermometer

- readings were influenced by evaporation of water
- 1641 - Duke Ferdinand II sealed top and used alcohol instead of water

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Group Member Name

Role

Date: 1/29/2015

<u>Kyle</u>	<u>Manager</u>
<u>Kaleigh</u>	<u>Recorder</u>
<u>Eliza</u>	<u>Reflector</u>
<u>Emily</u>	<u>Spokesperson</u>

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Interesting Reading Facts

- Mercury was more sensitive, making it a better substance for thermometers.
- Butter and brine were considered for ice and steam point proposals.
- Thermometers made up of glass air bubbles of various sizes would rise or fall with density of alcohol surrounding it.
- Fahrenheit was the first to use a cylindrical bulb instead of a spherical bulb.

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Group Member Name

Role

Date:

1/27

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Calé

Recorder

Emily

Reflector

Marisa

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## Something interesting

- not all bodies have the same boiling point/level of expansion
- so many different ideas/devices/ways of measuring temperature, different scales for measuring temperatures
- figuring out a system for measuring using wine vs. using water
- the fact that early thermoscopes were based on devices used in ancient Greece
- Roemer scale was the first calibrated scale but it's no longer in use

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Group Member Name	Role	Date: <u>1/29/15</u>
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<u>Becky Pattis</u>	<u>Spokesperson</u>	
<u>Samantha Colau</u>	<u>reflector</u>	
<u>Emma Addison</u>	<u>manager</u>	

Becky I thought it was interesting that the Romer scale had historical significance but did not stick around.

Samantha it was interesting that for a while no one thought to come up with actual degrees of how hot something is.

Emma when adjusting the two-fixed point method they used a mix of extremes like hottest of summer, coldest of winter, and melting point of butter.

Jake I thought Fahrenheit was the US non conforming version of Celsius but it turns out Fahrenheit came before centigrade.

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Group Member Name

Role

Date: 1/29

<u>Nick</u>	<u>Manager</u>
<u>Taylor</u>	<u>Spokesperson</u>
<u>Mandy</u>	<u>Reflector</u>
<u>Jon</u>	<u>Recorder</u>

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## Interesting notes from 1/27 Readings

- Many different fluids and substances were used during the first practice of thermometers, like brine, water, butter, and mercury
- Atmospheric pressure provided a significant challenge to accuracy of thermometers → if substance was exposed to atmospheric pressure, it acted differently
- Butter was used because it was a readily available substance
- During the evolution of the thermometer, ~~many~~ the temperature readings were not standard - used readings like "hot as the hottest day of the summer" or as "cold as the middle of winter."

Christopher F. Bauer, Principal Investigator.

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