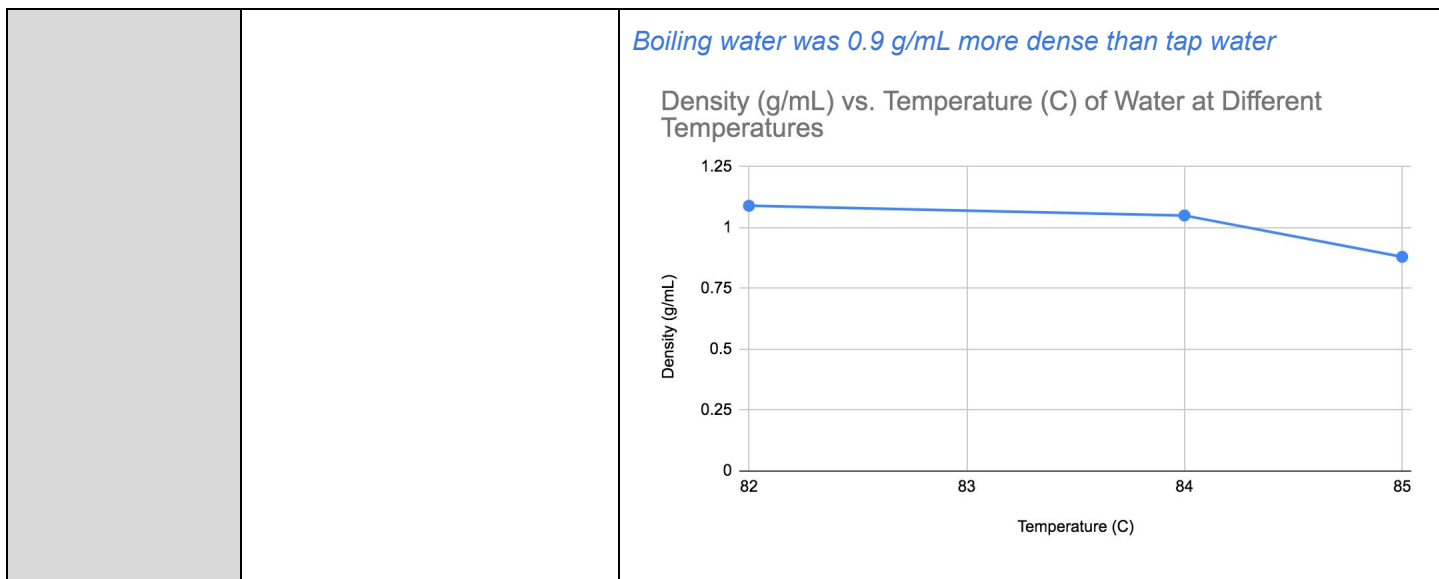


Criterion C - DATA/OBSERVATIONS & TRANSFORM DATA

Level	What do I have to do?	What does this look like?																									
Beginning	Collect and present your data numerically or visually	<p>Boiling Water</p> <table border="1"> <thead> <tr> <th>Trial #</th> <th>Temperature, mass, volume and density</th> </tr> </thead> <tbody> <tr> <td>#1</td> <td>85°C, 83.4 g, 95mL and 088 g/ML</td> </tr> <tr> <td>#2</td> <td>82°C, 114.7g, 105mL, 1.09 g/mL</td> </tr> <tr> <td>#3</td> <td>84°C, 106.9g, 100mL, 1.05 g/mL</td> </tr> </tbody> </table>	Trial #	Temperature, mass, volume and density	#1	85°C, 83.4 g, 95mL and 088 g/ML	#2	82°C, 114.7g, 105mL, 1.09 g/mL	#3	84°C, 106.9g, 100mL, 1.05 g/mL																	
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Developing	Correctly collect and present your data numerically or visually	<p>Temperature and Density of Boiling Water</p> <table border="1"> <thead> <tr> <th>Trial #</th> <th>Temperature</th> <th>Mass</th> <th>Volume</th> <th>Density</th> </tr> </thead> <tbody> <tr> <td>#1</td> <td>85°</td> <td>83.4g</td> <td>95mL</td> <td>0.8778947g/mL</td> </tr> <tr> <td>#2</td> <td>82°</td> <td>114.7g</td> <td>105mL</td> <td>1.0923809g/mL</td> </tr> <tr> <td>#3</td> <td>84°</td> <td>106.9g</td> <td>100mL</td> <td>1.0472501g/mL</td> </tr> </tbody> </table>	Trial #	Temperature	Mass	Volume	Density	#1	85°	83.4g	95mL	0.8778947g/mL	#2	82°	114.7g	105mL	1.0923809g/mL	#3	84°	106.9g	100mL	1.0472501g/mL					
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Exemplary	Correctly collect, organize, transform and present your data numerically or visually	<p><u>Mass(g), Volume(mL), and Density(g/mL) of Water at different temperatures (°C)</u></p> <table border="1"> <thead> <tr> <th>Trial #</th> <th>Temperature(°C)</th> <th>Mass (g)</th> <th>Volume (mL)</th> <th>Density (g/mL)</th> </tr> </thead> <tbody> <tr> <td>#1</td> <td>85</td> <td>83.4</td> <td>95</td> <td>0.88</td> </tr> <tr> <td>#2</td> <td>82</td> <td>114.7</td> <td>105</td> <td>1.09</td> </tr> <tr> <td>#3</td> <td>84</td> <td>106.9</td> <td>100</td> <td>1.05</td> </tr> <tr> <td>Average</td> <td>83.6</td> <td>101.7</td> <td>100</td> <td>1.01</td> </tr> </tbody> </table> <p>Sample Density Calculation $D=m/v = 83.4g/95mL = .88g/mL$</p> <p>Difference between Density of Tap water and Boiling water Average tap water - 0.92 g/mL Average boiling water - 1.01 g/mL</p>	Trial #	Temperature(°C)	Mass (g)	Volume (mL)	Density (g/mL)	#1	85	83.4	95	0.88	#2	82	114.7	105	1.09	#3	84	106.9	100	1.05	Average	83.6	101.7	100	1.01
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Criterion C - ANALYZE DATA

Level	What do I have to do?	What does this look like?
Beginning	Accurately interpret the meaning of your data	According to our data, salt water takes longer to boil most of the time, but not all the time.
Developing	Accurately interpret the meaning of your data and describe the results of your lab.	According to our data, salt water takes longer to boil most of the time, but not all the time. On our first trial, the salt water took about a minute longer to boil than the regular water. On the second trial, the salt water took almost two minutes faster to boil. On, the third and final trial, the salt water took almost a minute longer to boil than the regular water.
Accomplished	Accurately interpret the meaning of your data and describe the results of your lab using scientific reasoning	According to our data, salt water takes longer to boil most of the time, but not all the time. On our first trial, the salt water took about a minute longer to boil than the regular water. On the second trial, the salt water took almost two minutes faster to boil. On, the third and final trial, the salt water took almost a minute longer to boil than the regular water. I think what happened is that we accidentally put in different amounts of salt each time, which affected the change in the intermolecular forces between water molecules that salt provides. If we added more salt, which I think we did the first time, I think it took longer to boil because the intermolecular forces were affected more . I am not sure what happened the second time, it may have been a mistake or something else. The third time, I think we added less salt than the first time so I think that it affected the forces less .
Exemplary	Accurately interpret the meaning of your data and describe the results of your lab using correct scientific reasoning	According to our data, salt water takes longer to boil most of the time, but not all the time. On our first trial, the salt water took about a minute longer to boil than the regular water. On the second trial, the salt water took almost two minutes faster to boil. On, the third and final trial, the salt water took almost a minute longer to boil than the regular water. I think what happened is that we accidentally put in different amounts of salt each time, which affected the amount of heat needed for the solution to reach its boiling point . If we added more salt, which I think we did the first time, I think it took longer to boil because adding more salt will require more heat to boil meaning it will take longer for the water to reach the boiling point . I am not sure what happened the second time, it may have been a mistake or something else. The third time, I think we added less salt than the first time so I think it took a bit less time to boil as not as much heat/time was needed to reach the boiling point .

Criterion C - IMPROVEMENTS & EXTENSIONS

Level	What do I have to do?	What does this look like?
Beginning	State improvements or extensions to your method that aren't very useful.	To improve the experiment I make sure to follow all of my steps and not make mistakes.
Developing	State improvements or extensions to your method that would actually improve your lab.	To improve the experiment I should have done more trials and been more clear about what boiling point means.
Accomplished	Outline improvements or extensions to your method that would actually improve your lab.	Some improvements include using less water so that more tests could be conducted. I should also have put 2 beaker on the hot plate at the same time (one of each - salt vs no salt). This allows for better comparison and saves time. Finally, I should be more clear about what boiling point means.
Exemplary	Describe improvements or extensions to your method that would actually improve your lab.	<p>I could improve this method by decreasing the amount of water in each test. This would allow me more time to conduct more tests which would give me more data to analyze and see if there is a significant difference in times to boiling point. Using less water would also increase the concentration of salt in the salted water which might have resulted in a bigger difference in the time to boil versus the regular water.</p> <p>In my experiment, I did all the regular water tests first and then the 3 salted water tests after that. There could have been small changes in the environment or the temperature of the hotplate from the very first test I did to the very last. Instead, I could have placed one regular and one salted beaker on the hotplate at the same time to control for any differences in the environment or temperature of the hotplate.</p> <p>In addition, I should have clearly determine a standard for boiling. What qualities was I looking for. What size of bubbles or what temperature is needed to confirm that the water is boiling?</p>