Jessica Parker November 9, 2017

Block D

Data

**Table 1:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Time (min)** | **0** | **3** | **6** | **9** | **12** | **15** | **18** | **21** | **24** | **27** |
| **Temp (c)** | **-3** | **5** | **7** | **9** | **15** | **19** | **19** | **20** | **21** | **22** |

 **Qualitative Observations: As time went on the ice began to melt.**

**Table 2:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Time (min)** | **0** | **3** | **6** | **9** | **12** | **15** | **18** |
| **Temp (c)** | **-3** | **-5** | **-10** | **-10** | **-11** | **-11** | **-11** |

**Part 2 Qualitative Observations: As time went on the ice began to melt. The ices melting rate increased when the salt was added.**

**Conclusion**

The ice melted took longer to melt with no salt than with salt. The salt increased the melting rate of the ice but also made it become colder. The ice manipulated the ice crystals from forming, which resulted with the waters ability to freeze at a lower temperature.

1. **Extrapolate the graph from Part 1 for 30 minutes, 60 minutes and 4 hours past your data. What would you expect to happen to the temperature?**

What is expected to happen is the ice would melt and become water, and the temperature to become warmer over time. Until it reaches room temperature it would increase, unless there was heat applied to the water it would stay at room temperature

1. **Energy is being transferred from the room air (and your hands) to the ice. Why did the temperature of the ice mixture remain for so long?**

The temperature of the ice mixture remained constant for a long time because the salt it lowers the melting point.

1. **What is the melting point of the ice according to your graph (part one)?**

Between 1.5-3 minutes, between -3 and 5 degrees.

1. **As the salt was added to the ice, what happened to the temperature**

The temperature lowered

1. **According to your graph, what was the lowest point that your ice-salt mixture reached?**

-11

1. **Is there a relationship between the amount of solute (salt) and solvent (ice/water)? Explain**

Yes, because the more

1. **Explain why sodium chloride is used to de-ice roads on the lower mainland but is ineffective on roads in northern and central British Columbia during the winter months.**