

The Science of Ice Cream

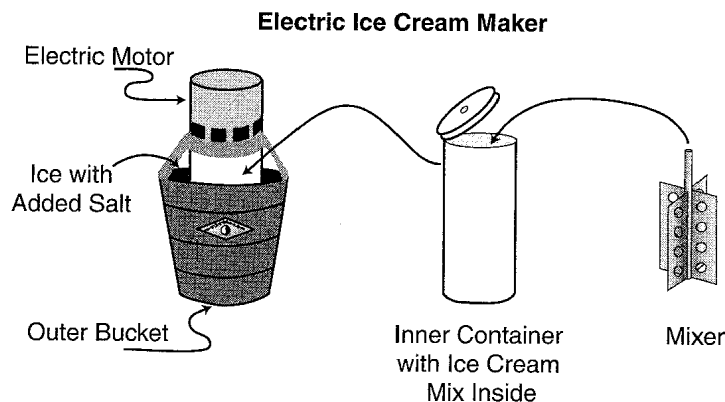
Directions: Use the following information to answer numbers 1 through 5.

Jacob and Tonya wanted to make homemade ice cream using an electric ice cream maker.

They made their ice cream mix with the following ingredients:

- milk and cream (contains milk fats, milk solids, and water)
- sweetener
- flavoring

The ice cream maker has an outer bucket to hold the ice and salt. The ice cream maker also has a removable inner metal freezing container where Jacob and Tonya placed the ice cream mix. They place the mixer into the inner container after they added the mix. Then they added 500 g of salt (sodium chloride) and 5 kg of crushed ice to evenly fill the outer bucket surrounding the inner container. As the electric motor turned the mixer, some of the ice in the outer bucket melted.



Jacob and Tonya wanted to determine whether changing the amount of salt added to the crushed ice would have an effect on the freezing point. The data table below shows their findings as they added salt and measured the water's freezing temperature with a thermometer.

**Freezing Temperature of
Water (5 liters) with Added Salt**

Added Salt (g)	Freezing Temperature (C°)
0	0.0
102	-1.4
263	-3.5
556	-7.4
882	-11.7
1,250	-16.6
1,494	-20.0