Calorimeter Lab

Why do you use C_{H_2O} when it's not just the mass of the H_2O, but also the mass of the salt that makes up the mass of the solution?

> Yes, but make this assumption and account for it as an error.

Guided Inq. #4

- How to determine ΔT for 10g w/ 40ml H_2O and total cost of solid

I wasn't crazy about why I couldn't make sense of it. It was a mistake in the lab according to the maker of the lab. Here is the correction:

- The observed ΔT was measured w/ ~50g total mass (45g water plus 5g solid). The predicted ΔT corresponds to 45g total mass (40g water plus your initial 5g solid).

- Set up a proportion: $\dfrac{50g}{45g} = \dfrac{\Delta T (40mL)^{H_2O}}{\Delta T (45mL\ H_2O)}$

- This allows you to solve for the ΔT if we added the 5g to 40 mL instead of the 45mL that you did in the lab.

- Now realizing that if we add more salt, we should expect to see a larger ΔT:

$$\dfrac{10g}{exp.\ mass\ of\ solid} = \dfrac{\Delta T (10g/40mL)}{\Delta T (40mL)}$$

— this is the variable you are to solve for.

	T_i	T_f	m
Sod. Ac.	28.3°C	25.0°C	5.00 g
Sod. Carb.	20.0°C	25.9°C	5.00 g
Sod. Ch.	20.3°C	18.8°C	5.00 g
$CaCl_2$	19.8°C	32.9°C	4.99 g
LiCl	19.8°C	35.3°C	5.02 g
NH_4NO_3	20.5°C	13°C	4.99 g

AP Lab Data

My apologies for the confusion. It should have given you info in the background info to help you think about how to conduct the final calculations. If you have any questions, please feel free to post on the blog or send me e-mails and I will try to respond as quickly as I can.