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**ASSIGN
BUSTER**

Water Evaporation Experiment Unit question - How salty is the waters in Qatar and how concentrated are they? Aim- To find out how salty is the waters in Qatar and how concentrated are they. This would be done by Water evaporation. Hypothesis- I feel that Doha sea water will be the most concentrated because desalination plants. These plants remove water from sea and leave behind the salt which would mean that the salt levels would grow as the ratio of salt and water would change because of desalination plants. Variables- Independent variable- samples of water

Dependent variables- concentration of salt Controlled variables- amount of water Apparatus- -Bunsen burner for heating the evaporation -evaporation dishes in order to have a container to boil the water in -igniters to light the Bunsen burner - Water samples which is the independent variable - 300ml measuring tubes to measure the different types of sea water - Scale used to weigh stuff - Tripod for burning the container containing the water and safety -heatproof mat to boil the water safely - wire gauze for safety - Pair of Thongs to handle hot apparatus Calculator for solving equations and formula's - Pencil or pen for writing - Papers for written material Method for experiment - Set up the apparatus that is in the picture below. - Measure out 100ml of sample

A water using a measuring tube. - Weight an evaporation dish and record the mass of it. - Place the water mention in step 2 in a evaporation dish and place the evaporation Dish on top of the Bunsen burner at maximum heat. - Wait until all of the water boils and we are only left with sodium chloride(NaCl) in the Evaporation dish. Measure the mass of the evaporation dish with the sodium chloride (NaCl)and record the results. - Subtract the

mass of the evaporation dish from the mass of the evaporation dish with Sodium chloride (NaCl) to find the mass of the NaCl in the water sample - Repeat steps 2 to 7 for Water samples B and C - Repeat the entire process(step2-8) 3 times so we can guarantee accurate results. - Work out the averages of the content of sodium chloride (NaCl) in the water and Record them. Diagram of the Experiment's apparatus and the method- Heat proof mat Stand Bunsen burner

Results for the experiment after solving the equation in order to find the mol/dm³ This result graph is also compared to Mr. Youni's results so we can see how accurate our results are. We had three tries for this experiment so we could get a good average. | Doha Sea water Mol/dm³| Al Khor Sea water Mol/dm³| Dukhan sea water Mol/dm³| Concentration: (10 ml) After burning | 0. 205| 0. 102| 0. 051| Concentration: (10 ml)After Burning| 0. 205| 0. 119| 0. 051| Concentration: (10 ml)After burning| 0. 291| 0. 119| 0. 068| Average: Of all the concentration| 0. 233| 0. 113| 0. 056| Mr.

Youni's Results| 0. 26| 0. 17| 0. 086| Graph for Averages of the concentration of the Qatari Sea Water- This Graph is showing the average concentration of Qatari sea water, Doha sea water, Al Khor sea water and Dukhan sea water. When we look at this graph we can see that Doha sea water has the highest concentration level and A Khor would have the 2nd highest concentration and after Al Khor it would be Dukhan being the lowest in the levels of Concentration. To get these results for the graph and result table we used an formula in order to get the level of concentration. Formula

Mr of NaCl = 58. 5 Mass number of Salt Volume used = 10 ml amount of water we took from the samples Concentration= $\frac{\text{mass}_{\text{mr}} \times 1000}{\text{Volume}}$

Conclusion- after Seeing all the results our group got we can see that Doha seawater is the most concentrated in Qatar, Al Khor is almost half concentrated than Doha and it is 2 times more concentrated than Dukhan. These results prove my hypothesis was correct because I predicted that Doha would be the most concentrated because of desalination plants. I got my results by using the formula shown above and I feel that it was the correct way of getting the results.

When I see my results and compare them with Mr. Youni's I feel that mine were fairly close to his results so I am quite happy with the accuracy of my results. Evaluation- I feel that my results are fairly accurate because I feel that my method was followed in the experiment. I feel that there was one mistake which might have caused my results to be less accurate which is that after burning the NaCl our group couldn't stop the NaCl from losing some mass as it started blowing up right before we shut the Bunsen burner.

I feel that our group couldn't do much about that and nothing in this world is 100% efficient. I feel that our group made this experiment fair because the amount of water we used was the same for each sample and the fact that we did the experiment three times for each sample which gave us a better and accurate result. Except for losing some mass after burning the NaCl I feel that the experiment went well.