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| **Procedure** 1. Acquire the following materials: - 6 Human Teeth  - 3 Toothbrushes  - Toothpaste  - 9 Glass Beakers  - Incubator large enough to fit 6 plastic cups  - 180ml of bicarbonate  - 6 liters of Distilled Water  - 1 liter of Bottled Water  - 1 liter of Water with a high concentration of contaminations (Pleasanton water)  - pH Tester  2. Create Solution of Saliva  - To prepare a 30 molar solution of bicarbonate, I filled up a beaker with 30ml of bicarbonate. Then I filled the rest of the beaker with distilled water until the total volume reached 1 liter.  - Use 30mMol/L solution because it�s the concentration when there is an intermediate flow of bicarbonate in the saliva.  - Take pH tester and adjust it till you reach 7.46 pH  - ***See bottom of page***  - Do this for 6 beakers  3. Place one tooth in the solution in each of the 6 glass beakers.  4. Set up water station, with 3 beakers; 1 filled with Distilled Water, 1 filled with Bottled Water, and 1 filled with Water with a high concentration of contaminations (Pleasanton water). Put the three toothbrushes and toothpaste at this station.  5. Put the 6 beakers with the teeth in them in the incubator at 98 F  6. Three times daily take the teeth out and brush them with tooth paste and their designated water (2 teeth are designated for each type of water).  7. Collect results for 3 weeks **Saliva Solution** Using the Henderson-Hasselbach Equation I calculated the pH of a 30 molar solution of bicarbonate. I used the 30mMol/L solution because it�s the concentration when there is an intermediate flow of bicarbonate in the saliva.  In this equation, pK = 6.1. The concentration of the carbonic acid is remarkably constant at 1.3mMol/L. We are using a 30mMol/L concentration for the bicarbonate.  pH = 6.1 + log (30/1.3)  pH = 6.1 + 1.363  pH = 7.463  Mass = Moles/Molar Mass  Moles = 30mol;  Molar Mass = 1 + 12 + [3 x 16] = 61g/mol  Mass = [30mol]/[61g/mol]  Mass ª .49g  To prepare a 30mMol/L solution of bicarbonate, I took .49g of bicarbonate in a beaker. I filled up rest of the beaker with water until the total volume [water + bicarbonate] reached 1 liter.  [[Home](http://docs.google.com/home.html)][[Introduction](http://docs.google.com/introduction.html)][[Hypothesis](http://docs.google.com/hypothesis.html)][[Procedure](http://docs.google.com/procedure.html)][[Data](http://docs.google.com/data.html)][[Conclusions](http://docs.google.com/conclusions.html)][[Bilio/Links](http://docs.google.com/biblio.html)]  [[2002 Projects](http://docs.google.com/AP2002/index.html)][[2001 Projects](http://docs.google.com/index.html)][[2000 Projects](http://docs.google.com/AP2000/index.html)][[1999 Projects](http://docs.google.com/AP99/index.html)][[1998 Projects](http://docs.google.com/AP98/index.html)] |