The question for this project is would high pH water freeze faster or low pH water freeze faster or would they both freeze at the same rate. This question is important to me because I've always been interested in studying water. To develop a hypothesis, i will be researching pH's affect on water, pH affect on freezing point, and which would freeze faster or would they freeze at the same rate.

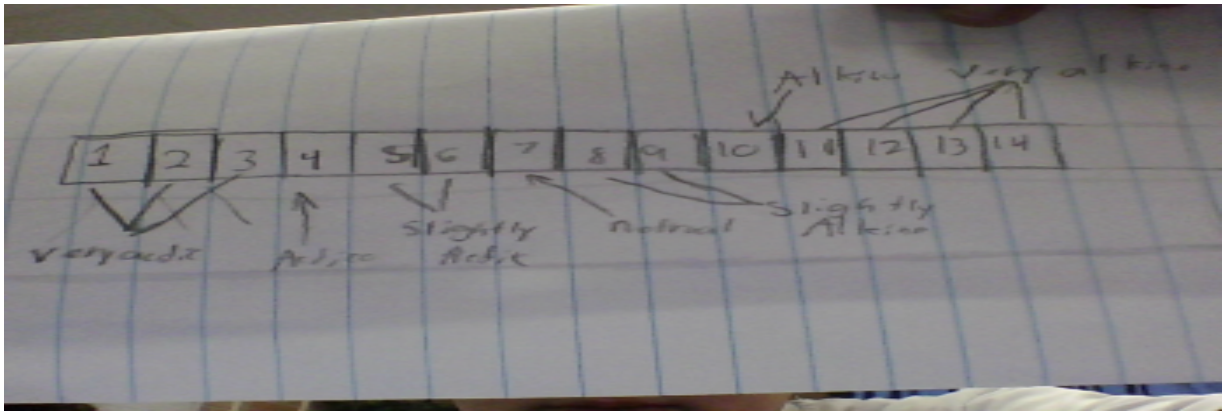
Water can be affected by **pH** *, quantitative measure of the acidity or basicity of aqueous or other liquid solutions. , from Britannica***,** in many different ways. According to the United States Environmental Protection agency article pH, pH can affect some biological and chemical factors in water. In the text it states,"pH affects most chemical and biological processes in water. "(para 5). This shows that pH does affect water. In summary, pH can affect water's **biological** *of or relating to biology or to life and living processes from Merriam Webster,* and chemical properties.,

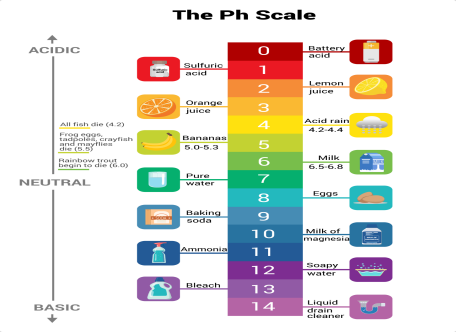
Something that is important to know is how fast does normal water freeze. According to ThoughtCo. The article What it the freezing point of water?, water freezes at 32 degrees fahrenheit. In the text it states, "Ordinarily, the freezing and melting point of water is 0 °C or 32 °F. The temperature may be lower if supercooling occurs or if there are impurities present in the water, which could cause freezing point depression." (para 2). This shows that normal water **freezing point** *the temperature at which a liquid solidifies from Merriam Webster,* is 0 °C but can change. To sum up, normal water freezing point is 0 °C or 32 °F but can change under certain conditions.

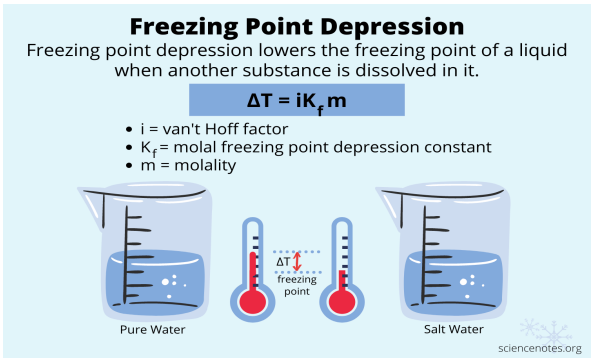
Lastly which would freeze faster or would they freeze at the same time. According to the National Library of Medicine the Article Effect of **Acidity** *Solutions with a pH less than 7 are said to be acidic from Water Quality Association***,** on Ice Nucleation

by Inorganic–**Organic** *not using artificial chemicals in the growing of plants and animals for food and other products: from Cambridge Dictionary,*Mixed Droplets, low pH has a high freezing point and high pH has a low freezing point. In the text it says," In comparison, the freezing temperatures increased more steadily with decreased acidity, from approximately −37.4 °C at pH −0.1 to −26.8 °C at pH 5.3."(para 23).This shows that pH has a affect at the freezing point if water. In summary, when freezing water their will be affect on pH and a lower pH is a lower freezing point.

Based on this research, my hypothesis is that High pH water will have a higher freezing point. I think this is because in body paragraph 3 in the quote we see that the temperature get higher with a higher pH. This is important to my project because now i gathered a hypothesis and understand my topic more.







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