Scientific method with lifesavers

The solubility depends on the properties of a solvent that will allow interaction with a solute more strongly than do solvent particles together. Water is the universal solvent. Water, certainly dissolves many types of substances and in greater amounts than any other solvent. The salt is a compound consisting of various minerals, and is one of the most abundant elements on earth. It is formed out of sodium and chlorine.

These minerals are considered electrolytes due to it electric possess. Baking Soda is a white, water soluble powder. On the pH scale of zero to 14, sodium bicarbonate is in 8. 2. This substance is a basic. Sodium bicarbonate powder is a chemical whose molecular compound includes a sodium atom (Nan), a hydrogen atom (H), a carbon atom (C) and three oxygen atoms (O). LifeSavers are a traditional American brand of hard candy. A lifesaver is a mix of sugar, corn syrup, high fructose corn syrup, natural and artificial flavors, citric acid and natural and artificial coloring.

The purpose of this laboratory is to demonstrate in which solution the LifeSaver dissolves faster within five minutes. Materials Water salt Baking Soda Regular LifeSaver hard candy Cups Watch settled for 5 minutes Observations The Lifesavers are round shape, purple color, solid and hard and CM size. Water is clear at room temperature. Salt and Baking Soda are in it solid state with power appearance. Question Which solution will dissolve the LifeSaver the most within five minutes?

Hypothesis Because the molecular compound of the baking soda is higher than the water and the salt, the physical constitution of the sugar in the lifesaver must yield to the solution. The Lifesaver will dissolve most in the

solution of the Baking soda. Alternative hypothesis The salt is highly soluble in water. It will help water to faster dissolve the LifeSaver within five minutes. Variables Independent Baking S Dependent LifeSaver Control Variables Time: 5 Minutes Concentration of Salt in the water Concentration of Baking Soda in the water Procedure Every cup was half filled with 80 ml of room temperature clean water.

In the first cup we add 20 ml of salt. In the second cup we add 20 ml of baking soda. In the third cup we add 20 ml of room temperature clear water. We obtained mall of solution in #1 and #2 and mall of only solvent water in cup #3. The watch was settled for five minutes in a chronometer mode. The purple, hard, regular LifeSavers were placed in each cup at the same time. Immediately, the water in the baking soda solution (cup#2) started to bubble around the LifeSaver, while #1 and #3 was Just sat in the bottom. After 1 minute, the water in cup #3 (only water) started to turn purple.

Tiny bubbles can be observed in the surface of the candy, but the bubbles was not moving or emerging as fast as in cup #2 (baking soda solution). The color in cup #3 continues increasing over the whole time of the experiment and the surface of the candy seems to become shiny and smooth. Cup # I(salt solution) does not show immediate visible reaction. After 3 minutes, water turned purple and the surface of the candy became opaque. Also, the sugary surface seems to be expanded projecting a larger size of the LifeSaver.

The time concluded and we removed the Lifesavers out of the water and the solutions. LifeSaver from cup #1 looks expanded, opaque and the bottom is

rough and coarse and kept it original color. LifeSaver coming out of cup #2 (baking soda solution) looks lighter in color, gritty texture, and slightly dissolved. The surface is slightly slimy and bright. However the size did not show significant hanged. On the contrary, the LifeSaver coming out of the cup#3 which was Just water was smaller, about 0. 3 CM less than it original size.

The surface was highly shiny, bright and smooth. It color was darker than its original purple color, and candy was slippery. Conclusion The experiment showed that water alone is capable of dissolving the Lifesaver faster than the salt solution and baking soda solution within five minutes. Even without creating an apparent reaction, water diluted coverage on the surface of the LifeSaver. Possibly because the salt is a water retainer, rather than dissolve the LifeSaver, it expanded the sweet surface creating a larger appearance.

At this point, I can not explain the immediate active reaction of the Baking Soda. Maybe I have to perform the experiment once or twice and thoroughly study the chemical components of Baking soda’s composition. As a result, my hypothesis was wrong. Although the reaction of Baking Soda is outstanding when in contact with other substances, its power to dissolve is practically ineffective. Water alone can dilute the LifeSaver without showing any reaction.