

## Science 7

### Unit 3: Mixtures and Solutions

#### Jennifer's Invisibility Experiment - Case Study

#### **Instructions:**

**Considering the chemistry labs completed to date, read the case study carefully and answer the following questions.**

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Jennifer was in the science laboratory after school working on a chemistry experiment. She wanted to make a special solution which would make her invisible. Jennifer made sure she *wore her lab coat and goggles as well as being certain she was in a well ventilated area*. She then started her experiment by measuring 200ml of water in each of two beakers (A and B). In **beaker A** Jennifer placed *10g of salt* and stirred until it *disappeared*. In **beaker B** she placed *50g of salt* and stirred until it *disappeared*.

Jennifer, working diligently, became so hungry that she began eating a chocolate bar. When Jennifer looked down to observe the beakers, she noticed that some *chocolate had fallen into Beaker B*. Jennifer decided to mix a new batch of solution for beaker B.

Later, Jennifer decided to place *15ml of vinegar* in beaker A and *15g of baking soda* in beaker B. Jennifer was sure she was on the right track to creating an invisibility solution. However, she wanted to find out which solution had more **pH** than the other. After, the pH test, Jennifer decided to mix the two solutions together in **beaker C** to create one super-solution. Jennifer tested the pH of Beaker C. She was intrigued at what she observed. However, she thought the pH was too high, so she added another 100ml of water.

Jennifer was ready to test her formula. Eagerly, she measured 150ml of the solution into a glass. Slowly, with distaste, she drank the liquid. After 30 minutes she was still visible. The experiment had proven to be a failure. However, the next morning when Jennifer woke-up, she noticed that her *teeth were cleaner and whiter*. Jennifer had stumbled upon something - homemade teeth cleaner and whitener. Jennifer thought to herself, "Maybe my experiment was not a total failure after all."

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**Instructions:**

**In your exercise book answer the following questions about Jennifer's Invisibility Experiment.. Draw a diagram to help understand the experiment and remember to state your answers.**

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- 1.) Identify two solutes found in Jennifer's invisibility experiment.
- 2.) Identify an example of a solute dissolving.
- 3.) Identify an example of contamination.
- 4.) Which beaker had the higher concentration of salt?
- 5.) If Jennifer wanted to dilute beaker C, what might she do?
- 6.) What safety features did Jennifer observe?
- 7.) What is the universal solvent in Jennifer's lab activity?
- 8.) Identify an example of a reaction caused by a chemical(s).
- 9.) Give one reason which might explain the cleanliness and whiteness of Jennifer's teeth.