WEEK 26 GRADED ASSIGNMENT

- Write your name and room number on your slide.
- Reread the article, "bubblology."
- Answer the comprehension questions about the article. (2 pts)
- Answer the short essay response question using ***at least*** 3 paragraphs. (8 pts)

Your response will be scored on how well you:

- Demonstrate your understanding of the ideas of the text
- Use evidence from the text to help develop and support your ideas
- Organize your response in a logical manner
- Demonstrate an appropriate writing style through the use of precise word choice and varied sentences
- Use standard conventions for writing

Bubblology

(bŭb' l-ŏl -jē) n. The study of bubbles.

1 There is a lot to be learned from a bubble! Bubbles can teach us about life, light and strength. The wall of a bubble has three parts. There is an outer wall made of soap or detergent, a center wall made of water, and an inner wall that is also made of soap or detergent. The inside of the bubble is filled with air. This structure of the bubble's wall is very similar to that of membranes found in living creatures like us.

2 Did you ever wonder how the food you eat gets from inside your stomach to inside your muscles? To get to your muscles, the food must first be digested. Then it must pass through a set of membranes into your blood. The nutrients then circulate through your arteries to your muscles, where they pass through another set of membranes into your muscles. The next time that you blow bubbles, look for a cluster of them, and watch closely. If they don't pop too quickly, you will see that the air from the smaller bubbles will pass through the bubble wall into a larger bubble on the other side. This is very similar to the way that oxygen passes from your lungs through a membrane and into your blood stream. The larger bubbles are sturdier, because their walls are not curved as much as the walls of smaller bubbles.

3 Bubbles can also teach us about light. The light from the sun is made up of many different colors. Mixed together, they look white. However, it is possible to separate the different colors of light from each other with a prism. Small drops of water or ice crystals can work like a prism. You have seen this for yourself if you have ever seen a rainbow. The wall of a bubble can work the same way. That is why bubbles are iridescent. When light hits a bubble, it may look blue, or it may look red. The colors seem to dance around on the surface. The colors that we see depend upon the thickness of the wall of the bubble and how much it is bent. As water evaporates from

4 Bubbles can also teach us how to make things stronger. Bubbles are usually very fragile. They can easily pop. But if we add sugar to the bubble solution, the bubbles are much sturdier. They will last for two or three times as long. This is because the sugar strengthens the wall of the bubble. The sugar dissolves in the water layer of the bubble's wall and takes the place of some of the water. Since the sugar does not evaporate as quickly as the water, the bubbles last longer. In addition, the sugar molecules are very large and stiff compared to water molecules. Like a large board nailed to the wall of a house, the sugar molecules brace the wall of the bubble to make it stronger.

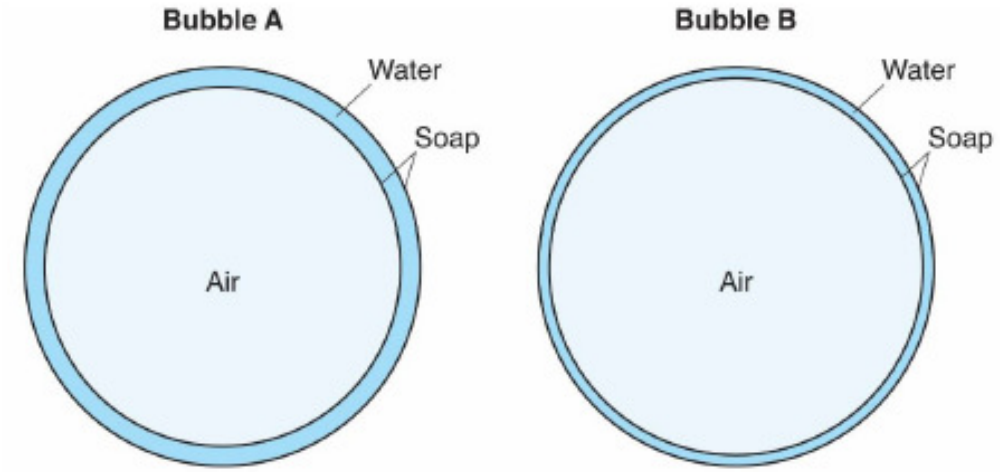

Figure 1: Bubble A and Bubble B were made from the same soapy water solution, but Bubble A is newer than Bubble B.

5 Bubbles are pretty incredible, but who knew? The observations that people have made about them have led to many questions and interesting answers that help explain the world around us.

NAME: _____ ROOM #: _____

The following question has two parts. Answer Part A and then answer Part B.

Part A: What is the main point the article makes?

A. The structure of bubbles makes them quick to pop.

B. Many things can affect a bubble's color and strength.

C. Bubbles can be used to help explain several science concepts.

D. Living creatures have bubble-like structures in their bodies.

Part B: How does the structure of the article help support the answer to Part A?

A. The article demonstrates how bubble walls are like membranes, prisms, and the walls of houses.

B. The article explains the causes and effects of making bubbles last longer.

C. The article uses chronological order to examine the effect of light and wind on bubbles.

D. The article presents the steps involved in the process of human digestion.

NAME: _____ ROOM #: _____

Using information from the article, describe what is the same and what is different about big bubbles and small bubbles. Be sure to use details from the article to support each part of your answer.