

Name: _____

Class: _____

Ch. NOS – Essential Understanding Review

Directions: Show your understanding of this most recent chapter by answering the following questions. Circle your answer and upload the completed document to archie *by 11:59 PM on Friday, September 5th*.

1. Scientists practice scientific inquiry, which involves several different steps. Which step of scientific inquiry would MOST LIKELY occur first during a scientific investigation?
 - a. communicating results
 - b. testing a hypothesis
 - c. asking a question
 - d. drawing a conclusion

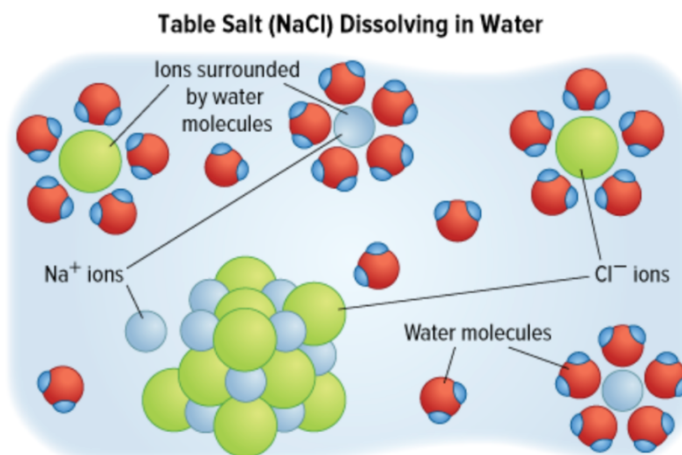
2. Scientists published the results of a study in a scientific journal. Other scientists followed their methods and could not replicate the data. Which statement BEST describes the results?
 - a. The results are accurate and reliable.
 - b. The results do not have any errors.
 - c. The results will be accepted by the scientific community.
 - d. The results will not be accepted by the scientific community.

Use the following information for questions 3-4

A group of students wanted to investigate what happens to a solution as more solute is added. They filled two beakers, each with 500 mL of water. They began adding the solute, table salt (NaCl) to the water in increments of 5 grams to the first beaker. Each time they added salt, they stirred the solution for 1 minute, then allowed the solution to settle out. They observed the solution and recorded whether they could observe any salt crystals at the bottom of the beaker. They did not add any salt to the second beaker, but they stirred it each time they stirred the water in the first beaker. They observed the water and recorded their observations. Their results are shown in the table below.

Beaker 1		Beaker 2	
Amount of Salt Added (g)	Appearance of Solution	Amount of Salt Added (g)	Appearance of Solution
5	Clear, no salt on bottom of beaker	0	Clear, no salt on bottom of beaker
10	Clear, no salt on bottom of beaker	0	Clear, no salt on bottom of beaker
15	Clear, no salt on bottom of beaker	0	Clear, no salt on bottom of beaker
20	Clear, no salt on bottom of beaker	0	Clear, no salt on bottom of beaker
25	Clear, no salt on bottom of beaker	0	Clear, no salt on bottom of beaker
30	Slightly cloudy, no salt on bottom of beaker	0	Clear, no salt on bottom of beaker
35	Cloudy, salt collected at bottom of beaker	0	Clear, no salt on bottom of beaker

3. This is an example of which type of scientific investigation?
- Comparative
 - Controlled
 - Descriptive
 - Experimental
4. When a solution is saturated, it cannot dissolve any more solute. The solute will collect at the bottom of the container. In this case, the solute is salt. At what point did the solution become saturated?
- when 5 grams of salt were added
 - when 15 grams of salt were added
 - when 25 grams of salt were added
 - when 35 grams of salt were added
5. One student in the group drew a model to show what happens when table salt (NaCl) dissolves in water.



Which statement about the model is FALSE?

- a. It shows a process happening on a molecular level in a way that helps people visualize the process.
 - b. It represents processes that are difficult to observe without magnification.
 - c. It is a simplified version of the process, so some information is not communicated.
 - d. The model will be perfect at predicting what happens in the real world.
6. A scientific theory is different from using the term theory in everyday life. Scientific laws and societal laws are also different. There is an idea that all organisms are made of cells and that cells are the basic unit of life. This is an explanation based on observations of events based on knowledge gained from many observations and investigations. This is an example of which of the following?
- a. scientific law
 - b. scientific theory
 - c. societal law
 - d. theory
7. A scientific theory is different from using the term theory in everyday life. Scientific laws and societal laws are also different. The idea that matter can neither be created nor destroyed is a rule that describes a pattern in nature. This is an example of which of the following?
- a. scientific law
 - b. scientific theory
 - c. societal law
 - d. theory