# 6th-8th Grade Nature of Science Review (SC.6-8.N.1-)

*For each example, determine if it’s an* ***(1) experiment, model, or observation*** *and* ***(2) if the scientist is studying biology, geology, or physics*:**

1) Ms. Laury goes to the beach every day to watch the nesting habits of birds. She records what she sees in her EcoLog.

2) Ms. Cossin uses a plastic fish, beach sand, and soil to demonstrate how fossils form inside rock layers.

3) Ms. Williams investigates how the shape of an object affects the rate at which it falls from 50 feet. She uses 3 clay pieces molded into a cube, a ball, and a flat sheet.

4.)Mr. Gardner collects igneous rock samples in Hawaii and then examines their crystalline structure in his laboratory.



4) The atomic model has been updated many times. What caused scientists to change the atomic model?

5) Scientists often repeat the experiments of others in order to find evidence that supports or fails to support a theory. Why is replication of experiments important?

6) A scientist did an experiment to see if a skin cream would help reduce the effects of sunburn. During the experiment he discovered that his cream doesn’t help sunburn, but it does heal papercuts. Should the scientist stop because he’s wrong? Explain



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| --- |
| Law of Conservation of Mass/Energy |
| Law of Superposition |
| Law of Universal Gravitation |
| Cell Theory |
| Theory of Evolution by Natural Selection |
| Theory of Plate Tectonics |

*Match each example to its* ***theory or law*** *in the table to the right.*

7) Charles Darwin studied finches to explain how animals adapt to their environments and animals with the right adaptations for their environment survived and reproduced.

8) Isaac Newton created mathematical formulas to

 describe the gravitational attraction between any two objects.

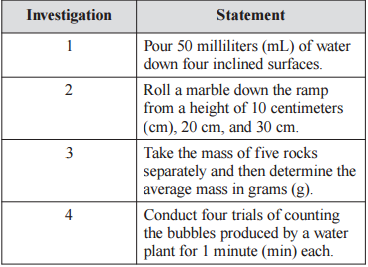
9) Using rock layers to determine which section of a mountain are the oldest.

10) Scientists believe that the tectonic plates are shifting due to the convection motion of the mantle underneath the crust.

11) Matter and energy can’t be created or destroyed, only transformed.

12) Sanitization is important because even if one bacteria cell is

behind, it can replicate to create more bacterial cells.

13.) Compare and contrast **theories** and **laws**.

14.) What is the difference between **repetition** and **replication**? *Provide an*

*example of each.*

15.) Which investigation to the right demonstrates an example of **repetition**?

16.) Scientific knowledge may change as new evidence or information is discovered. Which of the following would **NOT** be a result of new scientific research and information?

**A**. Binomial nomenclature is assigned to a recently identified plant species.

**B**. An endangered monkey species is put in a reserve for protection from extinction.

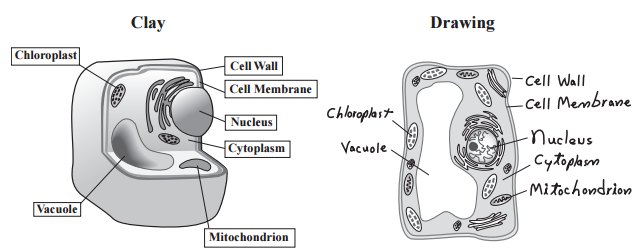
**C.** A discovered chemical element will be added to the periodic table of the elements.

**D**. A nonnative plant species will begin to reproduce rapidly after being introduced

into a swamp ecosystem.

17.) Why are scientific **models** beneficial to scientists?

18.) Two types of models that can be used to show details of the structures of cells are shown below.



Which of the following describes a limitation of the drawing but NOT the clay model?

**A**. It does not represent the main parts of a cell.

**B**. It does not contain the correct number of

nuclei.

**C**. It cannot represent a living cell, since a true cell

is three-dimensional.

**D.** It cannot represent a living cell, since the

cytoplasm should be in constant motion.