



## Scientific Inquiry Vocabulary, Notes, & Examples

As you watch and listen to the presentation, match the vocabulary definition to the left with the terms on the right.

- \_\_\_ **L** \_\_\_ 1. Process that uses a set of skills to answer questions or test ideas.
- \_\_\_ **K** \_\_\_ 2. The first step in scientific inquiry
- \_\_\_ **I** \_\_\_ 3. The act of using one or more of your senses to gather information and noting what occurs (senses=sight, hearing, touching, smelling, tasting)
- \_\_\_ **H** \_\_\_ 4. To make logical explanation of an observation that is drawn from prior knowledge
- \_\_\_ **F** \_\_\_ 5. Possible explanation for an observation that can be tested by scientific investigation
- \_\_\_ **J** \_\_\_ 6. A statement of what will happen next in a sequence of events
- \_\_\_ **M** \_\_\_ 7. Any factor that can affect an experiment
- \_\_\_ **G** \_\_\_ 8. The factor that you want to test, (“I change...”)
- \_\_\_ **D** \_\_\_ 9. The factor you observe or measure during an experiment
- \_\_\_ **B** \_\_\_ 10. An experiment that has only one independent (changed) variable and everything else is kept the same
- \_\_\_ **C** \_\_\_ 11. Facts, figures, and evidence collected during an experiment or investigation
- \_\_\_ **A** \_\_\_ 12. A summary of the information gained from testing a hypothesis
- \_\_\_ **E** \_\_\_ 13. Proven wrong

|                          |
|--------------------------|
| A. conclusion            |
| B. controlled experiment |
| C. data                  |
| D. dependent variable    |
| E. disprove              |
| F. hypothesis            |
| G. independent variable  |
| H. infer                 |
| I. observe               |
| J. prediction            |
| K. question              |
| L. scientific inquiry    |
| M. variable              |

14. Identify each statement as an observation or an inference:

\_\_\_ **Observation** \_\_\_ The block is red.      \_\_\_ **Inference** \_\_\_ She is happy.

15. Identify each statement as a hypothesis or a prediction:

\_\_\_ **Prediction** \_\_\_ After the mouse eats, she will sleep.

\_\_\_ **Hypothesis** \_\_\_ If I feed the mouse less food, then she will sleep for only 10 hours.

16. List 6 variables that could affect an experiment on growing plants:

\_\_\_ **Sunlight** \_\_\_      \_\_\_ **food** \_\_\_      \_\_\_ **soil** \_\_\_

\_\_\_ **temperature** \_\_\_      \_\_\_ **location** \_\_\_      \_\_\_ **water** \_\_\_

17. \_\_\_ **the soil** \_\_\_ If you wanted to test to see which kind of soil is best to grow roses, what would the independent variable be in your experiment?

18. The roses What would be the dependent variable, the one you measure?

**mnemonic** - a device such as a pattern of letters, ideas, or associations that assists in remembering something. (“**M**y **V**ery **E**xcellent **M**other **J**ust **S**erved **U**s **N**achos” is a mnemonic you may use to remember the order of the planets.)

19. Come up with a mnemonic for remembering the order of the steps of scientific inquiry listed below.

Question = \_\_\_\_\_

Observation = \_\_\_\_\_

Inference = \_\_\_\_\_

Hypothesis = \_\_\_\_\_

Test/Experiment = \_\_\_\_\_

Analysis = \_\_\_\_\_

Conclusion = \_\_\_\_\_

20. Identify each statement below as one of the steps in scientific inquiry. Choose from:

- Question
- Observation
- Inference
- Hypothesis
- Test/Experiment
- Analysis
- Conclusion

Observation Banks have eroded; rainfall has increased.

Hypothesis If the amount of speed and force of the river water has increased, then the riverbank will erode more.

data



inference Perhaps the increased rainfall caused the erosion.

test/experiment The independent variable in our investigation will be the amount of water we pour into our model. We will pour 10-mL, 20-mL, and 30-mL into our model. The dependent variable, the one we measure and collect data on, will be the amount of soil collected at the bottom of the model.

conclusion We were testing to see why our local riverbank has eroded more this year than last year, and noticed that our area has received more rainfall this year. We hypothesized that more water increased the speed and erosion of the riverbank. We created a scale model of the area and poured 10-mL, 20-mL, and 30-mL into the model. We measured the amount of soil left at the bottom of the model after each investigation. Our hypothesis was supported in that the more water we poured on the model, the more soil was carried to the bottom, thus eroding the riverbank more. This leads us to a new investigation in which we will test to see if building small barriers in the river will slow down the rate of erosion.

question Why have the rivers eroded more this year than last year?

