

Part I: Vocabulary

Directions: Using the terms below, match the definition with the correct term

- | | | |
|--------------|-----------|-------------------|
| Fact | Inference | Qualitative |
| Quantitative | Science | Scientific method |

- _____ observations that are measurements
- _____ a phenomenon that competent observers can agree on
- _____ an observation that describes
- _____ organized common sense and findings by humans about nature
- _____ a way to organize, investigate, and apply knowledge
- _____ an explanation of an observation

Part II: Concepts

- Using the words in the box, circle those words that represent what science "is"

Self-correcting	common sense	technology	nature
Organized	rational	verifiable	supernatural
mathematics	Continuous	repeatable	natural world
peer review	observable	surveys	chaotic

- Using the picture, provide a qualitative observation, a quantitative observation, and an inference.



Qualitative:

Quantitative:

Inference:

3. List the steps of the scientific method.

4. Are the steps of the scientific method always done in order, why or why not?

5. Is the statement an hypothesis, a law, or a theory? Explain why?

Statement: Last night, freezing rain accumulated in the Hanover, PA area, giving a thick coating of ice on the ground 2.5 cm deep. Tom's mom thinks that the ice formation on the roads and surrounding areas will cause local schools to cancel school for the remainder of the day.

6. Is the statement an hypothesis, a law, or a theory? Explain why?

Statement: In 1766 a scientist by the name of John Dalton conducted numerous experiments on everyday gases. While collecting and experimenting on these gases he found that each gas atom had its own characteristics that was different than any other gas atom. He also explained that two atoms of the same element are identical to each other.

7. Is the statement an hypothesis, a law, or a theory? Explain why?

Statement: The idea of diffusion is the movement of ANY molecule from an area of high concentration to an area of low concentration. Based on significant data that has been collected, diffusion occurs with any type of molecule and can be tested over and over and over again and again