

SCIENTIFIC METHOD AND EXPERIMENTATION

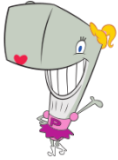
Directions – Complete the following activities to review the scientific method.

Activity 1 – Awesome Notes!

Scientific Method	Earth and Space Science – is the _____ of Earth, the processes and _____ that affect the Earth, and Earth's place in the _____!
Scientific Method Procedures	An _____ set of investigation procedures _____ by scientists Hypothesis – educated _____ or testable prediction Experiment – organized _____ for _____ hypothesis Control – standard for _____ Constant – factor that _____ change or vary in experiment _____ variable – factor that is _____, _____, or _____ by the experimenter (x-axis on a graph)
Scientific _____ vs. Scientific _____	_____ variable – factor whose value depends on the independent variable, it is usually what is <u>measured</u> or being <u>tested</u> in the experiment (y-axis on a graph) Scientific Law - _____ the results of certain _____ conditions Ex. Law of _____ Scientific Theory - Tries to provide the best _____ explanation to as the _____ natural phenomena occur Ex. Black _____ Theory

Activity 2 – Experimentation Scenario

Carefully read the paragraph below. Answer the following questions in complete sentences.



Mr. Krabbs wants to make Bikini Bottoms a nicer place to live. He created a new sauce that he thinks will reduce the production of body gas associated with eating crabby patties from the Krusty Krab. He recruits 100 customers with a history of gas problems. He has 50 of them (Group A) eat crabby patties with the new sauce. The other 50 (Group B) eat crabby patties with sauce that look like the new sauce but is really just a mixture of mayonnaise and food coloring. Both groups were told that they were getting the sauce that would reduce gas production. Two hours after eating the crabby patties, 30 customers in group A reported fewer gas problems and 8 customers in group B reported having fewer gas problems.

1. What question is Mr. Krabbs trying to answer?
2. What made him want to answer this question?
3. What is being measured or observed in this experiment?
4. Are the observations recorded in words or numbers?
5. What factor does Mr. Krabbs think might cause the measurement to change?
6. What parts of the experiment were kept the same throughout?
7. Is there a control in this experiment?
8. How many times was the experiment completed?
9. Did Mr. Krabbs use quantitative or qualitative observations for his experiment? Explain your answers in one or two complete sentences. (single words do not count)
10. What CCC (cross cutting concept) is used in Mr. Krabbs' experiment?

