Scientific Method Worksheet. ***Name: _____***
Date: _____

SpongeBob Clean Pants

SpongeBob noticed that his favorite pants were not as clean as they used to be. His friend Sandy told him that he should try using Clean-O detergent, a new laundry soap she found at Sail-Mart.

SpongeBob made sure to wash one pair of pants in plain water and another pair in water with the Clean-O detergent. After washing both pairs of pants a total of three times, the pants washed in the Clean-O detergent did not appear to be any cleaner than the pants washed in plain water.

1. What was the problem SpongeBob wanted to investigate?

    a. Is Clean-O detergent effective?
    b. Is the length of time the pants are washed important?
    c. How does water temperature affect cleaning pants?
    d. Does how often I wash my pants affect how clean they are?

2. What is the variable?

    a. Water temperature.
    b. Length of wash time.
    c. Laundry soap
    d. Size of washing tub.

3. What should Sponge Bob's conclusion be?

    a. Clean-O best cleans his pants.
    b. Plain water best cleans his pants.
    c. Cold water best cleans his pants.
    d. Clean-O is not effective cleaning his pants.

Squidward's Symphony

Squidward's Symphony

Squidward loves playing his clarinet and believes it attracts more jellyfish than any other instrument he has played. In order to test his hypothesis, Squidward played a song on his clarinet for a total of 5 minutes and counted the number of jellyfish he saw in his front yard. He played the song a total of three times on his clarinet and repeated the experiment using a flute and a guitar. He also recorded the number of jellyfish he observed when he was not playing an instrument. The results are shown in the chart.

Number of Jellyfish/Instrument				
Trial	No Music	Clarinet	Flute	Guitar
1	5	15	5	12
2	3	10	8	18
3	2	12	9	7

4. What is the variable?

a. Number of jellyfish.
b. Instrument.
c. Length the music was played.
d. The song he played.

5. What should Squidward's conclusion be?

a. The clarinet and guitar attracted the same number of jellyfish.
b. The flute attracted more fish than the control (no music).
c. Music attracts more jellyfish than does no music.
d. All of the above.

Super Bubbles

Patrick and SpongeBob love to blow bubbles! Patrick found some Super Bubble Soap at Sail-Mart. The ads claim that Super Bubble Soap will produce bubbles that are twice as big as bubbles made with regular bubble soap. Patrick and SpongeBob made up two samples of bubble solution. One sample was made with 5 oz. of Super Bubble Soap and 5 oz. of water, while the other was made with the same amount of water and 5 oz. of regular bubble soap. Patrick and SpongeBob used their favorite bubble wands to blow 10 different bubbles and did their best to measure the diameter of each one. The results are shown in the chart

Bubbles (Diameter in centimeters)		
Bubble	**Super Bubble**	**Regular Soap**
1	15	10
2	10	5
3	12	16
4	18	14
5	22	11
6	13	12
7	16	11
8	18	15
9	15	15
10	12	6

6. What did the Super Bubble ads claim?

a. Super Bubble produces bubbles twice as large as regular bubble soap.
b. Super Bubble makes twice as many bubbles as regular bubble soap.
c. Super Bubble bubbles last twice as long as bubbles made using regular bubble soap.
d. Super Bubble is cheaper than regular bubble soap.

7. What is the variable?

a. Bubble size.
b. Number of bubbles made.
c. Length of time bubbles last.
d. Type of bubble solution.

8. What should their conclusion be?

a. Super Bubble solution did not produce bubbles twice as large as those made with regular bubble soap.
b. Regular bubble soap lasts twice as long as Super Bubble.
c. Bubbles made with Super Bubble last twice as long as bubbles made with regular bubble soap.
d. There was no difference between Super Bubble and regular bubble soap.

Slimotosis

Sponge Bob notices that his pal Gary is suffering from slimotosis, which occurs when the shell develops a nasty slime and gives off a horrible odor. His friend Patrick tells him that rubbing seaweed on the shell is the perfect cure, while Sandy says that drinking Dr. Kelp will be a better cure. Sponge Bob decides to test this cure by having Gary try seaweed for 1 week and having him drink Dr. Kelp. After a week of treatment, the slime is gone and Gary's shell smells better.

9. What was the initial observation?

a. Gary's shell is dull in color and hard to see.
b. Gary's shell is glowing in the dark.
c. Gary's shell has a nasty slime and gives off a horrible odor.
d. Gary's shell is developing holes in it.

10. What is the variable?

a. Rubbing seaweed on the shell.
b. Drinking Dr. Kelp.
c. Both a and b.

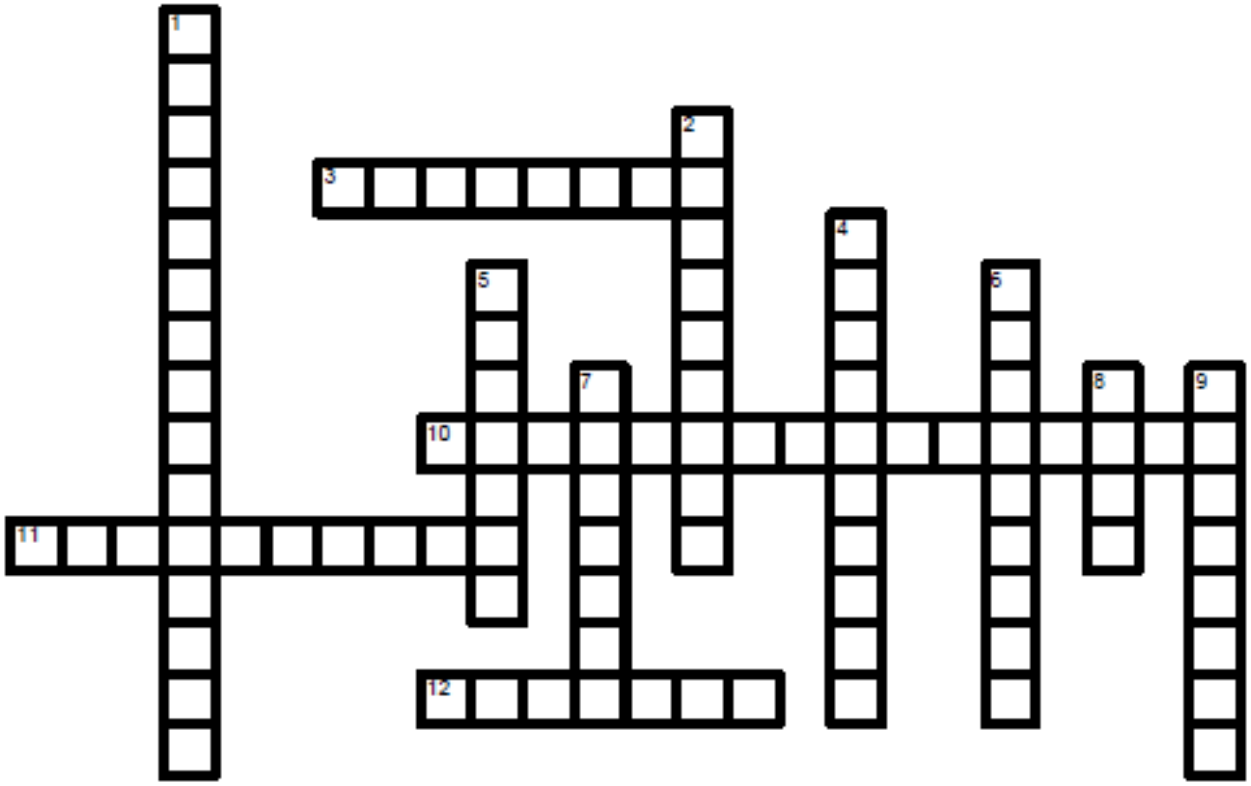
11. What should Sponge Bob's conclusion be?

a. Rubbing seaweed cured the slimotosis.
b. Drinking Dr. Kelp cured the slimotosis.
c. Both rubbing seaweed and drinking Dr. Kelp cured the slimotosis.
d. We cannot determine which cured the slimotosis. The experiment must be re-done, testing one variable at a time.

Key Vocabulary

Analyze – Examine data collected in an experiment to determine what it means.
Conclude – Reach a decision based on the analysis of data.
Data – Information collected during an experiment.
Experiment – A test that is done to determine if a hypothesis is correct or not.
Hypothesis – Your proposed answer to the question or solution to the problem.
Inference (Infer) – Coming to a conclusion based on your existing knowledge. (Example – seeing a student wearing a sports team jersey and concluding the student likes that team.)
Observe – Watch something carefully.
Qualitative data – Data dealing with descriptions; data is observed (colors, textures, smells, tastes, appearance, beauty, etc.).
Quantitative data – Data which can be measured (length, height, area, volume, weight, speed, time, temperature, etc.).
Results – Outcome of an experiment.
Tentative – Basic results that may or may not be accurate; basic results.
Variable – Something that can be changed.

Complete the puzzle using the clues shown below.



Across

3. Reach a decision based on the analysis of data.
10. Data which can be measured (length, height, area, volume, weight, speed, time, temperature, etc.).
11. A test that is done to determine if a hypothesis is correct or not.
12. Watch something carefully.

Down

1. Data dealing with descriptions; data is observed (colors, textures, smells, tastes, appearance, beauty, etc.).
2. Basic results that may or may not be accurate; basic results.
4. Your proposed answer to the question or solution to the problem.
5. Outcome of an experiment.
6. Coming to a conclusion based on your existing knowledge. (Example, seeing a student wearing a sports team jersey and concluding the student likes that team.)
7. Examine data collected in an experiment to determine what it means.
8. Information collected during an experiment.
9. Something that can be changed.