**Parts of the Scientific Method**  Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per \_\_\_\_\_\_

**Part 1**

**Directions: Each sentence below describes a step or a part of the scientific method. Match each sentence with a step of the scientific method listed below.**

A – Observation

B – Hypothesis

C – Experimentation

D – Data Collection

E – Conclusion

F – Variable

G – Control

\_\_\_\_\_ 1. Stephen predicted that seeds would start to grow faster if an electric current traveled through the soil in which they were planted.

\_\_\_\_\_ 2. Rene grew bacteria from the mouth on special plates in laboratory. She placed drops of different mouthwash on the bacteria in each plate.

\_\_\_\_\_ 3. Edward saw bats catching insects after dark. He asked, how do bats find the insects after dark?

\_\_\_\_\_ 4. Justin wondered if dyes could be taken out of leaves, flowers, and stems.

\_\_\_\_\_ 5. Jamie grew plants in exactly the same conditions except she changed the amount of water each plant got. The differing amount of water is the \_\_\_\_\_\_\_\_\_\_\_\_\_ in this experiment.

\_\_\_\_\_ 6. Maria soaked six different kinds of seeds in water for 24 hours. Then, she planted the seeds in soil at a depth of 1 cm. She used the same amount of water, light, and heat for each kind of seed.

\_\_\_\_\_ 7. After Maria’s seeds began to grow, she made a graph to plot their growth.

\_\_\_\_\_ 8. Krista read about growing plants in water. She wanted to know how plants could grow without soil.

\_\_\_\_\_ 9. Scott guessed that acid rain was responsible for the deformed salamanders in the lake.

\_\_\_\_\_ 10. Kim’s experiment showed that chicken egg shells became stronger if the hen ate feed to which extra calcium had been added.

**Part 2**

**Directions: Answer the following questions based on the information given.**

**1. Which fabric keeps you warmer, wool or polar fleece?**

Prediction: I think that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What experiment could you do to find out?

**2. Which paper towel soaks water up faster, Bounty or Brawny?**

Prediction: I think that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What experiment could you do to find out?

**3. Which seeds sprout faster, orange seeds or grapefruit seeds?**

Prediction: *I think that* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What experiment could you do to find out?

**4. Which frozen dessert melts quicker, a popsicle or ice cream?**

Prediction: *I think that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

What experiment could you do to find out?

**5. Which pen writes longer, a Bic or a Paper Mate?**

Prediction: *I think that* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What experiment could you do to find out?

**Directions: SpongeBob and his Bikini Bottom pals have been busy doing a little research. Read the description for each experiment and answer the questions.**

**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?

2. What is the independent variable?

3. What is the dependent variable?

4. What should Sponge Bob’s conclusion be?

**Music**

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A researcher is curious to find out what effect classical music has on people’s level of relaxation as measured by heart rate. He suspects that listening to classical music will make people feel more calm and relaxed (lower heart rate). He lets one group listen to classical music for one hour. He lets another group sit in a quiet room for one hour. After one hour, he monitors the heart rate of each participant to measure their level of relaxation. The people who listened to the music had an average heart rate 15 points lower than those who sat in the quiet room.

6. What is the independent variable?

7. What is the dependent variable?

9. What should the researchers conclusion be?

10. Which people are in the control group?