Scientific Method & Properties of Life Review NAME:

1. Complete the lines for these scenarios.
   1. You water three sunflower plants with different salt-water solutions to determine if there is any effect on growth. Each plant receives a different concentration of salt solutions. A fourth plant receives pure water. After a two-week period, the height is measured.
      1. Independent Variable:
      2. Dependent Variable:
      3. Control Group:
      4. 3 variables you need to control:
      5. Hypothesis:
   2. You are curious if you could affect the rate of growth of your gold fish. One tank of gold fish is fed the normal amount of food once a day, a second tank is fed four times a day during a six week study. The fishes’ weight is recorded daily.
      1. Independent Variable:
      2. Dependent Variable:
      3. Control Group:
      4. 3 variables you need to control:
      5. Hypothesis:
   3. You want to test which size of soccer ball is easiest to juggle with your feet. You test a size 3, size 4 and a size 5 ball. You count the seconds the ball stays in the air for each of the trials. You allow yourself to use both of your feet, knees, and head to juggle the ball.
      1. Independent Variable:
      2. Dependent Variable:
      3. Control Group:
      4. 3 variables you need to control:
      5. Hypothesis:
   4. Pea plant clones are given different amounts of water for a three-week period. Pea plant 1 receives 400 milliliters a day. The second pea plant receives 200 milliliters a day. The third pea plant receives 100 milliliters a day. The fourth pea plant does not receive any extra water; the plant receives water only natural ways. The height of pea plants is recorded daily.
      1. Independent Variable:
      2. Dependent Variable:
      3. Control Group:
      4. 3 variables you need to control:
      5. Hypothesis:
2. Read the scenario and answer the questions that follow.

Susie wondered if the height of a hole punched in the side of a quart-size milk carton would affect how far from the container a liquid would spurt when the carton was full of the liquid. She used 4 identical cartons and punched the same size hole into each. The hole was placed at a different height on one side of each of the container. The height of the hole varied in increments of 5 cm, ranging from 5 cm to 20 cm from the base of the container. She put her finger over the holes and filled the cartons to a height of 25 cm with a liquid. When each carton was filled with the proper level she place it in the sink and removed her finger. Susie measured how far away from the carton’s base the liquid had squirted when it hit the bottom of the sink.

1. Create a hypothesis for this experiment; an “If…Then…Because” statement for this experiment.
2. What is being tested?
3. Is there a control? YES or NO
4. What is it? Or what should it be?
5. What is the independent variable?
6. What is the dependent variable?
7. List AT LEAST three things that Susie did that qualifies as good science?
8. What does this experiment PROVE?
9. Name at least 2 ways this experiment could be improved.
10. List the 7 properties of life and define/describe each.
11. What do scientists do to define something as “living”?
12. Can non-living things have characteristics of life? YES or NO
13. Describe the properties of life these non-living things may display

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| Candle | Cell phone | Rock | Prison | Snowball |
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