Matching – Match word with the definition.

1. Looking through books, web sites, or newspapers for information on a topic. 1. Problem
2. The experiment. 2. Research
3. A list of things needed for the experiment. 3. Materials
4. Observations recorded and put into charts or graphs. 4. Data
5. Always asked as a question. 5. Procedure
6. Your best solution or answer to the question or problem. 6. Variable
7. A factor that is changed during an experiment to see what will happen. 7. Hypothesis

Fill in the Blank

8. The procedure scientists use to answer a question or solve a problem is known as the s_________ m_________.
9. The steps involved in carrying out the s_________ m_________ include:
   a. Identify a p_________ or ask a q_________.
   b. Stating a h__________.
   c. Test the h__________ by designing a controlled e_____________.
   d. C_________ and r_________ data.
   e. A__________ your results.
   f. Coming to a c__________ as to whether your h__________ is supported/accepted or r__________.
10. A hypothesis is an e__________ g__________ that suggests a possible explanation to some phenomenon or event.
11. The d_________ v__________ is what the scientist/experimenter m__________ and r__________ during an experiment.
12. The i__________ v__________ is the ONE factor the scientist/experimenter v__________ or c__________ during an experiment.
13. All the good experiments must have one i__________ v__________ and a t__________ hypothesis.
14. A c__________ g__________ is a necessary component of many science experiments and serves as a c__________.
15. C__________ are variables/factors that stay the same in both groups.
16. An e__________ g__________ is identical to the c__________ g__________ in every way except for the i__________ v__________.
17. A good conclusion will include the d__________ collected during the e__________ that validates the conclusion.

Experiment Scenarios

18. In the following experiment, which variable is being manipulated (changed)?
   Brands A, B, and C of hamburger meat are tested for the amount of fat in each. Each brand will be cooked for exactly 7 minutes. The same pan will be used for each test. The brands will each be drained for exactly 2 minutes by using a strainer and a measuring cup to determine the amount of fat that is drained.
  ☐ The cooking time  ☐ The brands being tested
   ☐ The pan  ☐ The straining of the meat after cooking

19. A biology student wants to conduct a study of how the amount of sunlight affects the length of sleep for mice. She sets up four cages with a mouse in each cage.
   a. What are the constants?
b. What is the independent variable?
c. What is the dependent variable?
d. What data do you need to collect during the experiment?

20. A biology student wants to conduct a study of how the amount of food affects the weight gain for mice. He sets up four cages with a mouse in each cage. Fill in the boxes that would allow the biology student to complete the study correctly.

<table>
<thead>
<tr>
<th></th>
<th>mouse 1</th>
<th>mouse 2</th>
<th>mouse 3</th>
<th>mouse 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>size of cage</td>
<td>30 cm x 30 cm</td>
<td>30 cm x 30 cm</td>
<td>30 cm x 30 cm</td>
<td>30 cm x 30 cm</td>
</tr>
<tr>
<td>Amount of Water per day</td>
<td>50 mL</td>
<td>50 mL</td>
<td>50 mL</td>
<td>50 mL</td>
</tr>
<tr>
<td>Amount of food per day</td>
<td>1 serving per day, 25 grams</td>
<td>1 serving per day, 25 grams</td>
<td>1 serving per day, 25 grams</td>
<td>1 serving per day, 25 grams</td>
</tr>
<tr>
<td>Temperature in cage</td>
<td>20 °C</td>
<td>20 °C</td>
<td>20 °C</td>
<td>20 °C</td>
</tr>
<tr>
<td>Amount of Sunlight per day</td>
<td>12 hours</td>
<td>8 hours</td>
<td>15 hours</td>
<td>18 hours</td>
</tr>
<tr>
<td>Exercise wheel</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

21. A biologist set up an experiment to study nine mice. On day 1 of the study, mice were measured for a variety of characteristics. Then the mice were put into individual cages and kept under the following conditions:

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</tr>
<tr>
<td>Amount of Water per day</td>
<td>50 mL</td>
<td>50 mL</td>
<td>50 mL</td>
<td>50 mL</td>
</tr>
<tr>
<td>Amount of food per day</td>
<td>4 servings per day, 25 grams each</td>
<td>4 servings per day, 25 grams each</td>
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</tr>
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23. What is the SI or Metric System? Who uses it?
24. In a controlled experiment, what 2 groups do you have?
25. Which group in an experiment has the Independent variable?
26. What is technology? How is it used in science?
27. What is a law?
28. What is a theory?
29. What instrument is used to view small details or objects in a lab?
30. What are some characteristics of living things?
31. What is data?
32. What is an experiment?
33. What is an independent variable?
34. What is a dependent variable?
35. What is a hypothesis?
36. What is the part of the experiment that is kept the same?
37. What is quantitative data?
38. What is qualitative or descriptive data?
39. What is the smallest unit that is considered living?
40. Name 3 laboratory safety procedures.
41. Name the 4 macromolecules.
42. What is the polymer of amino acids?
43. What is the monomer of lipids?
44. Names an example of a carbohydrate.
45. What is the polymer of a monosaccharide?
46. Which macromolecule can function as an enzyme?
47. Which macromolecule makes DNA and RNA?
48. Which macromolecule is used for short term energy?
49. Which macromolecule is used for long term energy?
50. What is the monomer for protein?
51. What is the polymer for fatty acids and glycerol?
52. Which macromolecule is the only one with phosphorous?
53. What is the difference between a polymer and monomer?