Part A. Vocabulary Review

Directions: Write the correct term in the spaces beside each definition. The boxed letters should spell the words that describe the most important scientific tool.

1. ____ ____ ____ ____ ____ ____ ____ __________

2. ____ ____ ____ ____ ____ ____ ____

3. ____ ____ ____ ____ ____ ____ ____

4. ____ ____ ____ ____ ____ ____ __________

5. ____ ____ ____ ____ ____ ____ ____ __________

6. ____ ____ ____ ____ ____ __________

7. ____ ____ ____ ____ ____ __________

8. ____ ____ ____ ____ ____ ____ ____

9. ____ ____ ____ ____ ____ __________

1. use of knowledge to make products or tools
2. a prediction or statement that can be tested
3. SI is used for this purpose
4. sample treated like other experimental groups except no variable is used
5. sample taken without bias
6. a factor in an experiment that can change
7. a way or a process to investigate what is happening around us
8. way to organize and record results and observations
9. The boxed letters spell: __________________________

Part B. Concept Review

1. Number these steps for doing an experiment in the correct order in the blanks provided.

   _____ a. Test your hypothesis.          _____ d. Form a hypothesis.
   _____ b. Analyze your data.             _____ e. Communicate your results.
   _____ c. Recognize the problem.         _____ f. Draw conclusions.
Chapter Review (continued)

Directions: Correctly complete each sentence by underlining the best of the three choices in parentheses.

2. Scientists use (observations, experiments, observations and experiments) to find answers to questions.

3. In today’s society, there is/are usually (only one, a pair of, several) scientist[s] working on a problem at one time.

4. (Making a detailed plan, Making a model, Identifying the problem) is the first step a scientist would take to solve a problem.

5. Modern (communications technologies, satellite tracking systems, DVDs) have led to a globalization of science.

6. Information about new scientific discoveries is (limited to scientists, available to people in the United States, available to people worldwide).

Directions: Answer the following questions on the lines provided.


8. What are some ways that data can be recorded in a science journal?
## The Nature of Science Test

### I. Testing Concepts

**Directions:** Match the description in the first column with the term in the second column by writing the correct letter in the space provided. Some items in the second column may not be used.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. a way to record results and observations accurately</td>
<td>a. model</td>
</tr>
<tr>
<td>2. a single run of an experiment</td>
<td>b. random</td>
</tr>
<tr>
<td>3. the application of science to make products or tools</td>
<td>c. data table</td>
</tr>
<tr>
<td>4. a way or a process to investigate what is happening around us</td>
<td>d. trial</td>
</tr>
<tr>
<td>5. a prediction or statement that can be tested</td>
<td>e. technology</td>
</tr>
<tr>
<td>6. a slanted view</td>
<td>f. science log</td>
</tr>
<tr>
<td>7. a factor that can change in an experiment</td>
<td>g. control</td>
</tr>
<tr>
<td>8. used to represent things that happen too slowly or quickly to observe directly</td>
<td>h. scientist</td>
</tr>
<tr>
<td>9. a type of sample taken without bias</td>
<td>i. hypothesis</td>
</tr>
<tr>
<td>10. sample treated like other experimental groups except no variable is used</td>
<td>j. bias</td>
</tr>
<tr>
<td></td>
<td>k. variable</td>
</tr>
<tr>
<td></td>
<td>l. science</td>
</tr>
</tbody>
</table>

**Directions:** Identify each statement as **true** or **false**. Rewrite false statements to make them correct.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11. A hypothesis is a statement of fact.</td>
<td></td>
</tr>
<tr>
<td>12. Scientific discoveries are made only by professional scientists.</td>
<td></td>
</tr>
<tr>
<td>13. Scientific discoveries influence only areas related to our health.</td>
<td></td>
</tr>
<tr>
<td>14. Any information gathered from the Internet can be assumed to be accurate.</td>
<td></td>
</tr>
<tr>
<td>15. The more trials you can run in an experiment, the more reliable the results.</td>
<td></td>
</tr>
</tbody>
</table>
II. Understanding Concepts

Skill: Designing an Experiment

Directions: Answer the following question on the lines provided.

1. How could you use two beakers, distilled water, two hot plates, two thermometers, and salt to test if adding salt affects the boiling point of water?

Skills: Concept Mapping

Directions: Complete the following events chain for doing experimental research.

2. Recognize the ____________________.

3. Form a ________________________.

4. Select dependent and independent _____________________.

5. Identify _________________________.

6. _________________ your results.

7. Draw _____________________________.

Run multiple trials of experiment

communicate
Skill: Comparing and Contrasting

Directions: Answer the following question using complete sentences.
8. Compare and contrast science and technology.

III. Applying Concepts

Directions: Match the following SI units with what they measure.

_____ 1. meter  a. temperature
_____ 2. gram  b. liquid volume
_____ 3. tonne  c. area
_____ 4. liter  d. length
_____ 5. degrees Celsius  e. mass

Directions: Answer the following questions on the lines provided.
6. Explain the importance of multiple trials when conducting experiments.

________________________________________________________________________
________________________________________________________________________

7. Compare and contrast dependent variables with independent variables in a controlled experiment.

________________________________________________________________________
________________________________________________________________________

8. How is a control useful in a scientific experiment?

________________________________________________________________________
________________________________________________________________________

________________________________________________________________________
9. Discuss two advantages of using the International System of Units, or SI, for measurements in scientific research.

________________________________________________________________________

________________________________________________________________________

IV. Writing Skills

Directions: Answer the following questions in complete sentences on the lines provided.

1. If an experiment tested two variables at the same time, would the findings of the experiment be reliable? Explain.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2. Give two examples of what could cause scientists to change a hypothesis or theory they have formulated.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

3. Can you think of any tools or technologies that might have developed from people’s observations of natural phenomena?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

4. Discuss a theory as compared with a hypothesis and a natural law.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________