Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Due:**

**Score: /42**

**Web Quest**: http://www.sumanasinc.com/webcontent/animations/content/scientificmethod.html (Link is on Cornerstone under Assignments – you can also Google “sumanasinc.com the scientific method”).

**Redi’s Experiment:**

Redi and Pasteur were the first “scientists” to use scientific methods for testing whether spontaneous generation explained the origin of life. You will study the scientific method as you study their experiments. Fill in the information for each step of the scientific method:

1. Scientists cannot perform an experiment without first asking questions about the things they observe around them. What was the question Redi wanted to answer?

2. Scientists make a **hypothesis**, a prediction that can be tested; what was Redi’s hypothesis (a hypothesis is a statement, not a question)?

3. Scientists must design a **controlled experiment** that will test their hypothesis. A **variable** is something in an experiment that can change. The scientist chooses one variable to change. All other variables must be held constant. The **constants** are all the other variables that stay the same throughout the experiment. For example, Redi kept all three jars in the same room so that they had equal access to flies and were kept at the same temperature.

a. What was the variable that Redi changed (meaning what was different about the three jars)?

b. What are at least 2 other constants in his experiment?

1.

2.

4. Make a sketch of Redi’s experimental set-up (label appropriately):

5. Analyze Data: Redi collected data on the outcome of his experiments. Explain what happened in each jar:

|  |  |  |
| --- | --- | --- |
| Jar 1 | Jar 2 | Jar 3 |
|  |  |  |

6. Draw Conclusions: Did Redi’s data support or oppose his hypothesis? Explain.

7. Did Redi’s data provide evidence for or against spontaneous generation? Explain.

**Pasteur’s Experiment**

1. What was the question Pasteur wanted to answer?

2. What was Pasteur’s hypothesis?

3. What was the variable that Pasteur changed?

4. List at least two variables that were held constant in his experiment:

5. Draw a sketch of Pasteur’s experiment (label appropriately):

6. Analyze Data – What were the results of the experiment?

7. Draw Conclusions – did Pasteur’s data support or oppose his hypothesis? Explain.

8. Why did Pasteur’s experiment convince most other scientists that spontaneous generation was not supported by scientific data?