Scientific Method Quiz  
Review Guide

1. What is an observation?
2. What are the two types of observations? What is the difference between the two?
3. What is an inference?
4. What is a hypothesis? How do we write a hypothesis?
5. Describe the three types of variables.
6. Which is the variable that a scientist purposefully changes?
7. Which is the variable that stays the same throughout the experiment?
8. Which is the variable that changes and is measured at the end of the experiment?
9. What is a controlled experiment?
10. How many variables should be changed during the experiment?
11. Which is the group that represents the “normal” conditions?
12. Which group has the changes made to it?
13. What are the steps of the scientific method, in their typical order?
14. What is a theory? What makes it different from a hypothesis?
15. What is the process that takes place after collecting your data? Why is this step important?
16. What is the question that we try to answer when writing our conclusion?
17. Why do scientists share their results/data?

*Read the following passage and answer the questions:*

Melissa raises crickets at her pet store that she sells for reptile food. She has noticed that the number of times the crickets chirp in one minute changes based upon the temperature of the room. Melissa wants to know how to create an experiment that will test her observations.

1. What is the independent variable?
2. What is the dependent variable?
3. Write a hypothesis for the experiment above.

If ,

` Then .

|  |  |
| --- | --- |
| Experiment Results | |
| **Temperature (°C) of Room** | **Number of Chirps per minute** |
| 25 | 2 |
| 35 | 10 |
| 45 | 14 |
| 55 | 22 |
| 65 | 15 |
| 75 | 11 |

1. Does the data support your hypothesis? Why or why not?