Homework : Due 9/4/09

Name Date Class

SECTION 4 Reinforcement

Evaluating Scientific Explanation

Directions: *Fill in the blanks with the following terms.*

repeatable	**explanations**	**laboratory**	**changing**	
evaluate	**inferences**	**data**	**critical thinking**	**conclusions**

Scientists often have to evaluate scientific explanations in two parts. Scientists evaluate the observations that are made, and evaluate the **1.** _____ made from those observations. To make a decision, scientists use their **2.** _____ skills to evaluate the evidence. Scientists have to be careful whenever they are collecting any type of **3.** _____. Measurements must be accurate and instruments must be properly calibrated, as scientists cannot afford to be careless in their data collection.

Valid scientific explanations must be **4.** _____ by other scientists. If a scientist's experiment cannot be recreated accurately by other scientists, it might mean that the experiment is invalid. Once the experiments and evidence have been tested and examined, the scientist might draw **5.** _____ based on the observations. However, when drawing conclusions, scientists should ask themselves if they considered all of the possible **6.** _____. It is important to keep an open mind when drawing conclusions from scientific information. It is also important to remember that scientific information is constantly **7.** _____, and that all scientific models are subject to change.

It is important to know that scientific reasoning is used not only in the **8.** _____. Scientific reasoning and critical thinking skills are used every day. These skills will help you **9.** _____ claims and make good decisions about the world around you.

Directions: *Answer the following questions on the lines provided.*

10. Why is it important for a scientist to write down every observation, including unexpected observations? _____

_____

11. How is evaluating an advertising claim a use of the scientific process?

_____

12. Does an advertiser's claim that its results have been verified by an independent laboratory impress you?

_____

Meeting Individual Needs