What is Biology?

Biology is the discipline that studies the quantitative as well as the qualitative characteristics of life. Biologist try to answer in their studies what, when, why, where, and how questions in an attempt to understand the nature of the biological community.

What method do Biologist use to Study Biology?

Creative and critical thinking as well as problem-solving methods are combined to seek answers to questions regarding biology, a process called the scientific method. It consists of first making observations; then a statement of a problem or the asking of a question; later the biologist will formulate hypothetical answers to the questions that were asked about their observations. Finally, experiments are designed and conducted to test the hypothetical answers. The biologists establish procedures to gather quantitative and qualitative data. This data is analyzed, and a conclusion is drawn that supports, modified, or refutes the hypothetical answer.

Applying the Learning Process to Biology

Witkin, H. (1976) writes in his book, “Cognitive style in academic performance and in teacher-student relations” that student learning styles are different. Witkin believes that humans are born with certain tendencies toward particular learning styles, although these tendencies are influenced by personal experience, socialization, culture and development.

Witkin categorizes students into two learning style groups: field-dependent and field independent. The field-dependent usually exhibits a social orientation in which they are more perceptive and sensitive to names and faces. They need and rely on modeling and constructive feedback in their learning. Field-independent tends to be more analytical. Witkin found that field-independents tend to be more task-oriented and flexible in problem-solving approaches. He says that science courses and related topics are oriented to analytic thinkers, those that are field-independent learners.

Learning and thinking applies to all aspects of science as well as to life events. For example, a field-dependent learner may memorize the names of sport players from magazines and sports cards. As time passes, the learner may use field-independent thought and apply the information to the strategies of the game. By doing so, the learner progresses from a memorizing learning style to an abstract thinking style about sport concepts. Both are needed to understand the game.

To understand as well as to be successful in your learning strategies of biology, you must be able to do the following:

a. Identify and locate information  
b. Organize information  
c. Interpret the language of biology  
d. Use and apply the information you have learned
When you study science, you will memorize bits of biological information and then learn to comprehend relationships. This combination of memorizing and comprehending will lead to understanding. The last component learning is to motivate yourself to learn the material in your studies… then you will be successful.

Some students have the skills necessary to do well. Other students have not developed, or have forgotten, the study skills they need to succeed.