LIFE SCIENCES 11

Learning Guide 1 – The Scientific Method

Biology is the science of life. The word itself comes from the Greek terms *bios* meaning "life" and *logos* meaning "study," so biology can be understood as the study of living organisms. An organism is any living thing, whether made up of a single cell, such as bacteria, or many cells, like plants, animals, and fungi. In this course, you will explore both the structure and function of living things, as well as the processes—such as DNA and evolution—that explain how life develops and changes over time. We'll begin in Learning Guide 1 with the scientific method. So, let's "cell-ebrate" the start of Biology with the scientific method!

Part 1

In Life Sciences 11, observations help connect course concepts to the real world, encouraging you to explore living organisms and their interactions in meaningful ways. By observing closely and recording details with precision, you will strengthen your ability to recognize structures, behaviors, and relationships in nature. You will use these skills throughout this course including the dissections we will complete during the year.

- ✓ **Complete the attached Observations assignment**

Part 2

The scientific method is important because it gives scientists a reliable way to investigate questions and solve problems. Instead of relying on guesses or opinions, the scientific method provides a step-by-step process for making careful observations, forming a hypothesis, designing experiments, and analyzing results. This approach helps ensure that conclusions are based on evidence rather than bias. For example, if you wanted to test how light affects plant growth, the scientific method would guide you in setting up controlled experiments so your results are accurate and repeatable. By following this process, scientists can share their findings with others and build on each other's work. In Life Sciences 11, learning how to use the scientific method will help you think critically, design your own experiments, and better understand how scientific knowledge is developed.

- ✓ **Complete the attached Experimental Design assignment**