

Course curriculum outcomes for Biology 11

1.1 The Cell

1.1.1 explain how cell theory has developed over time, referencing evidence, theories, and paradigms (114-2, 314-5, 114-1)

1.1.2 perform experiments using specimens and microscopes and record the data collected (213-3, 214-3)

1.2 Interaction of Cell Structures

1.2.1 using appropriate equipment, observe and describe cell organelles (314-6, 213-8)

1.2.2 compare and contrast different types of procaryotic and eucaryotic cells (314-7)

1.2.3 describe how organelles manage various cell processes (314-8)

1.2.4. do investigations of cell size and display collected data, including variables and conclusions (212-7, 213-2, 213-5)

1.3 Photosynthesis and Respiration

1.3.1 design, perform, and report on experiments that investigate the basic and critical processes of photosynthesis and respiration (214-11, 114-5)

1.3.2 compare and contrast matter and energy transformations associated with the processes of photosynthesis and aerobic respiration (314-9)

2 Biodiversity

2.1 Classifying Living Things

2.1.1 describe and apply classification systems and nomenclatures used in the biological science (214-1)

2.1.2 use organisms found in local or regional ecosystems to demonstrate an understanding of the fundamental principles of taxonomy (316-5)

2.1.3 analyze and describe examples where scientific knowledge evolved, was enhanced, or revised as a result of new laws, theories, and/or technologies (115-7, 116-2)

2.2 Diversity among Living Things

2.2.1 construct arguments to support a decision or judgment, using examples and evidence and recognizing various perspectives (118-6)

2.2.2 describe the anatomy and physiology of a representative organism from each kingdom, including a representative virus (316-6)

2.2.3 analyze and explain the life cycle of a representative organism from each kingdom, including a representative virus (313-1)

3 Maintaining Dynamic Equilibrium I

3.1 Homeostasis

3.1.1 explain the importance of nutrition and fitness to the maintenance of homeostasis, debating the merits of funding specific scientific or technological endeavours and not others (117-4, 317-3)

3.1.2 explain, with specific examples, how behaviours such as tropisms, instinct, and learned, help to maintain homeostasis and identify multiple perspectives that influence a decision/issue (215-4,317-8)

3.2 Body Systems

3.2.1 design and perform experiments, identifying specific variables, to investigate how body systems work based on scientific understandings (212-6, 116-4)

3.2.2 analyze and report how natural and technological systems have developed and improved over time, including organ transplants (115-5, 116-7)

3.2.3 explain how different plant and animal system maintain homeostasis (317-1)

3.2.4 identify and describe the role of chemicals, including elements, compounds, biochemicals, and water on the structure and function of various body systems (314-1, 314-2, 314-3)

3.4.5 identify and predict the impact of viruses, diseases, and environmental factors on the homeostasis of an organism and propose alternate solutions (317-4, 317-6, 214-15)

4 Interactions among Living Things

4.1 Biomes

4.1.1 compare and interpret patterns of North America's biomes with another continent in terms of climate, vegetation, physical geography, and location (214-5, 318-7)

4.2 Population Dynamics

4.2.1 synthesize information from multiple sources to describe and explain factors that influence population growth and interactions within and between populations (215-3, 318-8, 319-9)

4.2.2 using the concept of the energy pyramid to explain the energy flow in the production, distribution, and use of food resources (318-11)