

# **BIOLOGY SCOPE AND SEQUENCE**

## **Semester 1 (3 week units)**

- Unit 1:**           **Chemistry and Biochemistry** (organic molecules in living things; cell specialization; etc.)
- Unit 2:**           **Cells: Structure and Function** (cells are the basic units of life; cells combine to form complex structures; etc.)
- Unit 3:**           **Cell Energetics** (organisms need energy to do work; photosynthesis; cellular respiration; ATP; etc.)
- Unit 4:**           **Comparative Structure and Function of Living Things** (different structures in different organisms do similar functions; body systems work together physiologically to support the needs of the entire organism; etc.)
- Unit 5 / 6:**       **Human Systems / Homeostasis and Health** (human systems work together to maintain short-term and long-term health; homeostasis – keeping internal conditions relatively stable; regulatory mechanisms; etc.)

## **Semester 2 (3 week units)**

- Unit 7:**           **Matter and Energy in Ecosystems** (energy passage throughout ecosystems; biogeochemical cycles; etc.)
- Unit 8:**           **Population Ecology and Human Impacts on the Environment** (carrying capacity; human impacts; etc.)
- Unit 9:**           **Cell Division and Chromosome Mutations** (mitosis; cellular differentiation; cancer; meiosis; etc.)
- Unit 10:**         **DNA / RNA and Protein Synthesis** (replication; transcription; translation; etc.)
- Unit 11:**         **Mendelian and Molecular Genetics - includes biotechnology** (protein production; mutations; malfunctioning proteins; genes; etc.)
- Unit 12:**         **Evolution** (theories of the history of life on earth; natural selection; speciation; common descent; etc.)