RAYTOWN QUALITY SCHOOLS
Expect the Exceptional

Biology Essential Standards

Quarter 1

- 9-12.LS1.A.2 - Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
- 9-12.LS1.C.3 - Construct and revise an explanation based on evidence that organic macromolecules are primarily composed of six elements, where carbon, hydrogen, and oxygen atoms may combine with nitrogen, sulfur, and phosphorus to form large carbon-based molecules.

Quarter 2

- 9-12.LS2.B.3 Use a model that illustrates the roles of photosynthesis, cellular respiration, decomposition, and combustion to explain the cycling of carbon in its various forms among the biosphere, atmosphere, hydrosphere, and geosphere.
- 9-12.LS2.C.1 Evaluate the claims, evidence, and reasoning that the interactions in ecosystems maintain relatively consistent populations of species while conditions remain stable, but changing conditions may result in new ecosystem dynamics.
- 9-12.LS1.B.1 Develop and use models to communicate the role of mitosis, cellular division, and differentiation in producing and maintaining complex organisms.

Quarter 3

- 9-12.LS1.A.1 Construct a model of how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.
- 9-12.LS3.B.3 Make and defend a claim that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) mutations occurring during replication, and/or (3) mutations caused by environmental factors.

Quarter 4

- 9-12.LS4.A.1 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.
- 9-12.LS4.C.1 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.
- 9-12.LS2.C.2 Design, evaluate, and/or refine solutions that positively impact the environment and biodiversity.