Level IV

Seventh-grade students performing at Level IV can describe characteristics and how these characteristics are interrelated to common living things including growth and development, reproduction, cell organization, use of energy, exchange of gases, response to the environment, cell theory, and homeostasis. These students can identify and differentiate between the organelles found in prokaryotic and eukaryotic cells, including the nucleus, cell membrane, mitochondria, chloroplasts, vacuoles, and the cell wall. They can arrange the organizational level of the cell to organ systems and relate the major components of the skeletal, circulatory, reproductive, muscular, respiratory, nervous, and digestive systems to their functions. Level IV students can identify major differences between plants and animals, including internal and external structures, methods of locomotion and reproduction, stages of development, and the processes of photosynthesis and cellular respiration. Level IV students can describe by characteristics organisms in the six kingdoms and classify representative organisms. These students can describe and give examples of evidence of species variation over time due to climate, changing landforms, interspecies interaction, and genetic mutation. Students can trace the flow of energy through the biotic and abiotic components of an ecosystem. Level IV students can describe the function and components of chromosomes, differentiate between mitosis and meiosis, and recognize structural differences between DNA and RNA. These students can identify Mendel’s laws of genetics by using the Punnett square to predict the probability of traits inherited from parents.

Level III

Seventh-grade students performing at Level III can describe characteristics common to living things including growth and development, reproduction, cell organization, use of energy, exchange of gases, and response to the environment. These students can identify functions of organelles found in eukaryotic cells, including the nucleus, cell membrane, mitochondria, chloroplasts, vacuoles, and the cell wall. They can relate the major
components of the skeletal, circulatory, reproductive, muscular, respiratory, nervous, and digestive systems to their functions. Level III students can identify major differences between plants and animals, including internal and external structures, methods of locomotion and reproduction, and stages of development. Level III students can describe by characteristics organisms in the six kingdoms. These students can describe evidence of species variation over time due to climate, changing landforms, interspecies interaction, and genetic mutation. They can differentiate between biotic and abiotic factors in the environment. Level III students can describe the function of chromosomes in heredity, the process of chromosome reduction in meiosis, and the differences between DNA and RNA. These students can identify Mendel’s laws of genetics.

Level II

Seventh-grade students performing at Level II can identify characteristics common to living things including growth and development, reproduction, and cell organization. These students can identify the functions found in eukaryotic cells, including the nucleus, cell wall, vacuoles, and cell membrane. They can identify the major components of the skeletal, circulatory, reproductive, muscular, respiratory, nervous, and digestive systems. Level II students can identify that plants are producers and animals are consumers and classify organisms into the appropriate kingdom. These students can describe evidence of species variation over time due to climate. They can identify organisms as biotic and abiotic. Level II students can explain that chromosomes carry genetic information, that the process of meiosis results in the formation of the sperm and egg, and can identify DNA as double-stranded and RNA as single-stranded. These students can recognize that family traits are inherited due to Mendel’s laws of genetics.

Level I (Does not meet standards)