Maryland Science - Next Generation

From Molecules to Organisms: Structures and Processes: Grades 9-12

Adopted 2013

From Molecules to Organisms: Structures and Processes HS-LS1

HS-LS1-1. **Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.** HS-LS1-1

HS-LS1-2. **Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.** HS-LS1-2

HS-LS1-3. **Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.** HS-LS1-3

HS-LS1-4. **Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.** HS-LS1-4

HS-LS1-5. **Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.** HS-LS1-5

HS-LS1-6. **Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.** HS-LS1-6

HS-LS1-7. **Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.** HS-LS1-7