



I Can...

High School Life Sciences From Molecules to Organisms: Structure and Processes

- 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.
- develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
- plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
- use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.
- 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.
- 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.

High School Life Sciences Heredity: Inheritance and Variation of Traits

- ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
- make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.