

Unit 06: Anatomy and Physiology Muscular

Content Area: **Science**
Course(s): **Generic Course**
Time Period: **Marking Period 2**
Length: **2 weeks**
Status: **Published**

Standards

[LS1.A: Structure and Function](#) (pp. 143-145, NRC, 2012)

- [Systems of specialized cells within organisms help them perform the essential functions of life. \(HS-LS1-1\)](#)
- [Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level. \(HS-LS1-2\)](#)
- [Feedback mechanisms maintain a living system's internal conditions within certain limits and mediate behaviors, allowing it to remain alive and functional even as external conditions change within some range. Feedback mechanisms can encourage \(through positive feedback\) or discourage \(negative feedback\) what is going on inside the living system. \(HS-LS1-3\)](#)

SCI.9-12.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.
SCI.9-12.HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
SCI.9-12.HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

Essential Questions

How does the muscle structure permit movement?

How do the components of a skeletal muscle contribute to muscular movements?

Content / Skills

- Define oxygen debt and muscle fatigue
- Describe the major parts of a skeletal fiber
- Describe three ways ATP is regenerated during muscle contraction
- Differentiate between isotonic and isometric contraction
- Explain the motor unit and how muscle fibers are stimulated to contract
- Explain the sliding filament theory
- Name and identify the major muscles of the skeletal system
- Build muscles in Anatomy in Clay
- Discriminate between different muscles in a lab practical

