

ANATOMY AND PHYSIOLOGY

Key Features

Focus Areas

- organization of interacting systems,
- structures and functions of the human body and human body systems, and
- feedback mechanisms to maintain a living system's internal conditions (homeostasis).

By the end of Anatomy and Physiology studies, students can

- Illustrate the organization of the interacting systems of multicellular organisms.
- Investigate structures and identify their specific functions within the human body.
- Explain how feedback mechanisms maintain homeostasis within certain limits and mediate behaviors, allowing organisms to remain alive and functional even as external conditions change.
- Identify how feedback mechanisms can encourage (through positive feedback) or discourage (through negative feedback) processes within a living system.

Home to School Connections

Questions you can ask your learner could include:

- Can you identify all of the systems in the human body and explain how they function?
- Are all cells in the body the same?
- What is an example of a positive feedback system in the human body?
- What is an example of dysregulation of homeostasis?

Questions you can ask your learner's teacher could include:

- Which body systems are explored in depth during the course?

- What kind of post-secondary educational and career opportunities could this course inspire my learner to explore?

Activities and learning you can do outside of the classroom to support your learner could include:

- Track food consumption over several days and identify the nutrients found in those foods and how they are digested.
- Physiology is a focus on how the body functions. Paying attention to body movements during normal daily activities and increased physical activity is a great opportunity to practice naming various structures and explaining how systems work together.
- Investigate heart rate and breathing changes in response to exercise.
- Explore the correlation of bone density with factors such as nutrition and resistance training.
- Record and discuss observations about how your body responds to changes in temperature.

Resources

- Bozeman Science (<https://www.bozemanscience.com/>)
- CK-12 Foundation (<https://www.ck12.org/student/>)
- Discus (<https://www.scdiscus.org/>)
- Exploratorium (<https://www.exploratorium.edu/>)
- Genetic Science Learning Center (<https://learn.genetics.utah.edu/>)
- Howard Hughes Medical Institute's BioInteractive (<https://www.biointeractive.org/>)
- Khan Academy (<https://www.khanacademy.org/>)
- PBS LearningMedia (<https://scetv.pbslearningmedia.org/>)