

2021-2022 Themes in Biology - Pacing Guide

Biology is the scientific study of the natural processes of living things. In this course students will explore and answer **some** of the following questions as they learn about key ideas in biology:

- What are the characteristics of life?
- How do organisms obtain and use energy they need to live and grow?
- How do the structures of organisms enable life's functions?
- How do organisms inherit and express their traits?
- How can there be so many similarities among organisms yet so many different plants, animals, and microorganisms? How does biodiversity affect humans?"
- How do microbes affect organisms?

* We do not have a reference text for this course. Materials will be provided through Schoology. [*NOTE: There is a high school biology course available through the Khan Academy at <https://www.khanacademy.org/science/high-school-biology> that you may find helpful. They also offer Biology and AP Biology.]*

Quarter	Thematic Unit	Biology Topics	Khan Academy - High School Biology
1	Why did we have to wear mask?- Characteristics and Interactions of organisms	Characteristics of life, Cells (structure), microorganisms, viruses, immunity, DNA, RNA, protein synthesis	Characteristics of life, cells
2	You are what you eat - or are you? Matter and Energy Flow in Organisms Energy and Metabolism	The Science of Biology; Chemistry of Life; Cellular Respiration; Digestive System(brief) Cell structure and function; Photosynthesis; Cellular Respiration;	Biology Foundations Energy and Transport Cells
3	Heredity: Inheritance and Variation of Traits	Cell growth and Division; Genetics; Inheritance patterns; Genetic Engineering; The Human Genome	Reproduction and Cell Division Classical Genetics Molecular Genetics
4	Human Body Systems	Nervous System, Circulatory System, Respiratory System, Digestive System	Human Body Systems
Other option or as time permits	Ecosystems: Interactions, Energy, and Dynamics	The Biosphere; Ecosystems and Communities; Populations; Humans in the Biosphere	Ecology
Notes: The thematic units are subject to change. This document will be updated periodically and posted through the specific course listing in Schoology. If you have questions, comments, or concerns, please contact Ms. Jane (jwilson@d49.org).			

FHAP - Themes in Science Courses

FHAP Themes in Science classes are delivered twice per week (Tuesday and Thursday) in a thematic unit-studies format. During class, students will have the opportunity to explore and discover science in an active, collaborative and creative way. In addition to the classroom activities, students are expected to complete related homework assignments due each Tuesday before the week's science classes. Because of the limited time designated to learning via this FHAP science class, parents are encouraged to expand upon their learning* while at home (beyond the home assignments) in order to consider these courses as full year studies and assign a credit to the transcript.

[*Connections to the course text are provided on the pacing guide as a possible resource.]

The content of all FHAP science courses will be drawn from key ideas in science that have broad importance within or across multiple science disciplines, including Physical Science, Life Science, and Earth and Space Science. In addition to the science content, the science classes will integrate crosscutting science principles as opportunities arise. Students will engage in science practices to build, deepen, and apply their knowledge of key ideas and crosscutting concepts.

