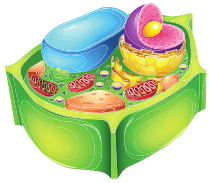
7th Grade Life Science Syllabus 2023-2024 AIM Academy

Course Rationale:

AIM's 7th-grade Life Science program focuses on building students' knowledge of science concepts as well as exploring the process of being a scientist. Students engage in the scientific method, hands-on experiences, and labs that utilize technology and traditional scientific instruments to deepen their scientific understanding. Students continue to work on general reading and writing development with a particular focus on disciplinary literacy skills and strategies.

In addition, 7th-grade students delve into metaphor and symbolism to apply their understanding of the cell organelles with a final cell project. They also speak with a genetic scientist to further their understanding of that field of study. Students also engage with several mini-graphic novels to help learn the terminology and theories behind biology and specifically genetics.



- **Key Topics:** The Scientific Method, Observations and Inferences, Characteristics and Necessities of Life, Levels of Organization, Cell Theory and Structure, Cell Organelles, Heredity & Genetics, Evolution, and Taxonomy
- **Overarching Themes:** Interconnection, Adaptations, and Structures & Functions
- **Critical Questions:** Why and how do scientists gather, classify, sequence, and interpret information and visual data? How do organisms live, grow, and respond to their environment and reproduce? What are the properties/characteristics that differentiate living organisms from non-living things? How do different single-celled organisms carry out basic life functions? How can scientists use their knowledge to prevent the sharing of illness or disease? What are the cell organelles and how do their structures relate to their functions? How does DNA determine traits, and how are traits inherited? How has our understanding of genetics changed society? What is the evidence of evolution? How do scientists use classification as an organizational tool?

Over the course of the school year, students will work on vocabulary, content-specific knowledge & the scientific method, text structure, discussion and investigation, scientific writing, and creative writing in an environment that supports each student's different learning style.

- **Vocabulary** will focus on breadth and depth, indirect and direct instruction, the precise use of content-specific words, morphology with a focus on scientific Latin and Greek prefixes, roots, and suffixes, multiple exposures and rehearsal, and building independent word learning skills.
- **Content Specific Knowledge & the Scientific Method** will focus on inquiry and asking questions, making observations, formulating hypotheses, researching background knowledge and evaluating other information sources, experimenting, analyzing data, and developing conclusions.
- **Text Structure** will focus on annotation skills, multiple slow readings of authentic science text, paired oral reading for practice with fluency and understanding, and decoding data, charts, and graphs.
- **Discussion and Investigation** will focus on asking "Why?", considering details, developing extensive questioning skills, conducting labs, analyzing evidence, proposing explanations, creating solutions, and strengthening collaboration skills.
- **Scientific Writing** will focus on incorporating scientific vocabulary, using exact wording and the passive voice, using a systematic framework, integrating and supporting conclusions with evidence and data, and incorporating writing skills being taught in ELA.
- **Creative Writing** will focus on using broader scientific concepts and vocabulary to create short stories, poetry, and mini-graphic novels while also incorporating creative writing skills being taught in ELA.