



Main Line Classical Academy

UPPER SCHOOL : SCIENCE CURRICULUM

SEVENTH GRADE BIOLOGY

Students will study biodiversity, classification, evolution by natural selection, cladistics, Mendelian genetics, early findings in cell biology (chromosomes, mitosis, and meiosis), modern genetics (the role of DNA, RNA, and proteins), symbiosis, and ecology. Throughout, there will be a focus on the research and data underlying these topics. By the end of the year students will be familiar with key concepts in biology and will be able to place them in a historical context.

EIGHTH GRADE CHEMISTRY

Students will study the composition and properties of matter, beginning with atomic structure and properties and continuing with compounds, intermolecular forces, chemical reactions, kinetics and thermodynamics. Technology used to observe chemical structure and chemical reactions will be discussed and explored wherever possible. There will be a strong quantitative focus and students will be given the opportunity to work on questions usually studied at the AP level.

SEVENTH AND EIGHTH GRADE SCIENCE RESEARCH ELECTIVE

Students will have the opportunity to develop science research skills by (1) preparing, individually or in teams, a research project for the Delaware County Science & Engineering Fair and (2) preparing, in small groups, to compete in the regional science olympiad. Science fair projects can be worked on either independently or in teams, and for high school students will in some cases involve work in local research labs. Science olympiads are prepared for and attended as a team, although team members can divide responsibility for different events amongst themselves. Some events require studying particular topics and being prepared to answer related questions, while other events may require engineering, design and other creative work.