

Course offerings and class schedules change each year to meet the needs of our enrolled families. We use Apologia and Bob Jones University Press textbooks for most of our science courses.

Monthly Science Classes:

Students attend one day a month (September through April) to do lots of science investigations together. We provide you with a reading schedule and additional engaging activities students may do at home to further explore the concepts introduced during class.

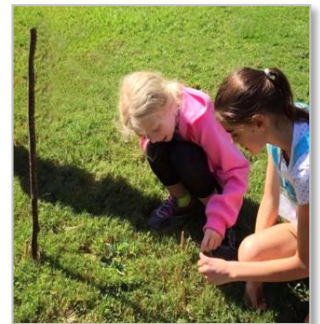


Science ABCs (For ages 6 to 8)

We have tons of fun with teacher-developed activities and experiments beginning with every letter of the alphabet! Students are introduced to many fields of science: Biology, Chemistry, Physics, Earth Sciences, etc. This class runs on a three-year cycle with new experiments every year. A student could enjoy Science ABCs three years in a row! This class meets once a month, 9 AM - noon. (This class does not use a textbook.)

Earth Sciences (Astronomy, Geology, and Weather) (For ages 8 to 12)

Students explore Astronomy, Geology, and Meteorology. We build a scale model of the Solar System that is ½ mile long! Students learn to identify moon phases, eclipses, and circumpolar constellations. Our Geology unit includes rock collecting, minerals, fossils, core sampling, and topographic maps. In our Weather unit, we learn about the water cycle, cloud formation, and what to do during storms. Little writing is done in this class. It meets once a month, 9 AM - 2 PM. Apologia textbook: Exploring Creation with Astronomy by Jeannie Fulbright (either 1st or 2nd Edition) (Spiral notebooking journal is **not** used.)



Master Books: The Geology Book by Dr. John D. Morris; The Weather Book by Michael Oard



Zoology 1 – Flying Creatures (For 8 to 12 year olds)

Students learn about animal classification, the dynamics of flight, how to attract various bird species to your yard and identify them by looking at their special physical characteristics. They discover the value of bats in our world, and then investigate entomology (the study of insects). Students design experiments with crickets, darkling beetles, and caterpillars. They also learn how to attract and catch insects for scientific study. This class meets once a month, 9 AM - 2 PM.

Apologia textbook and notebooking journal (regular, not junior level):

NEW 2nd Edition of Exploring Creation with Zoology 1: Flying Creatures by Jeannie Fulbright

Weekly Science Classes:

Each class meets two hours per week (August through May). We perform textbook activities as well as many additional experiments and relevant projects. Compound and dissecting microscopes, preserved specimens, chemicals, etc. are provided. Students learn to use these correctly in a fully equipped science lab environment and enjoy live animals, too!

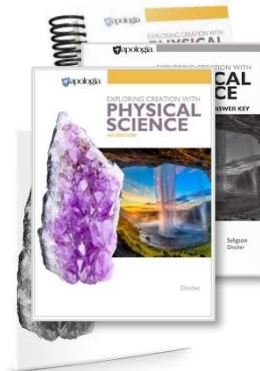
Chemistry and Physics (Generally for 6th graders) This course provides an excellent transition from elementary to middle school science. Students engage in exciting hands-on activities and experiments using the scientific method. They are introduced to study skills (writing lab summaries, organizing notes, taking tests, etc.) in preparation for future classes like General Science. Apologia textbook & associated spiral notebooking journal for: Exploring Creation with Chemistry and Physics are used.





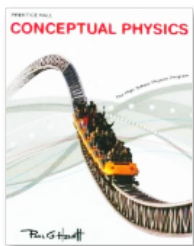
General Science (Generally for 7th graders) Students explore a wide range of topics including the history of science, the scientific method, astronomy, geology, paleontology, atoms, molecules, motion, simple machines, life science, oceanography, and ecology. This course is a step up from earlier classes, requiring more reading. **3rd Edition (3 BOOK SET)**: Apologia textbook, spiral student notebook, and solutions/tests manual for Exploring Creation with General Science are used.

Physical Science (Generally for 8th or 9th graders, in pre-Algebra or higher) Students explore Chemistry, Physics, and Earth Science concepts. They complete labs and hands-on projects throughout the course for an immersive learning experience with practical application. **4th Edition** (BOOK SET): Apologia textbook, spiral student notebook, course guide/answer key, & tests for Exploring Creation with Physical Science are used. (Check with your co-op, accrediting organization, or high school the student may transfer into re: high school credit. Colleges accept Physical Science for high school credit.)



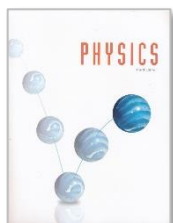
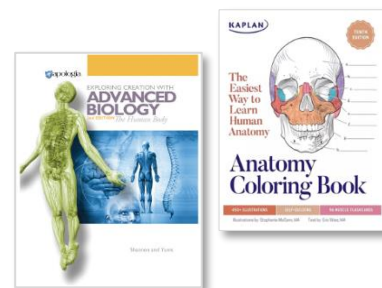
Honors Biology (Generally for students in Algebra 1 or higher) Students explore classification, cellular biology, genetics, dissection, and ecosystems. Extra credit projects include an insect collection, tree leaf collection, and an owl pellet skeleton reconstruction. **3rd Edition (3 BOOK SET)**: Apologia textbook, spiral student notebook, and solutions/tests manual for Exploring Creation with Biology are used along with Human Anatomy Coloring Book by Margaret Matt. (1 high school honors science credit)

Chemistry (Prerequisite: Completion of Algebra 1) Students learn about atomic and molecular structure, stoichiometry, thermodynamics, kinetics, equilibrium, acids and bases, solutions, gas laws, and oxidation-reduction reactions. Students do **not** need to buy their books. Great Oak Academy has Chemistry textbooks & solutions manuals for students to **rent**. Apologia: Exploring Creation with Chemistry, 2nd Edition (NOT 3rd Edition) (1 high school science credit)

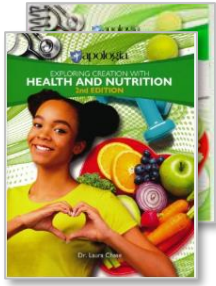


Conceptual Physics (Prerequisite: Completion of Algebra 1) Students explore the mechanics of physics, Newton's laws of motion, properties of matter, heat, sound, light, electricity, magnetism, Einstein's theories of relativity, and atomic & nuclear physics. Unique, hands-on labs are a key focus. **Conceptual Physics ©2009 by Paul G. Hewitt** is used. Students do **not** need to buy their books. Great Oak Academy has Conceptual Physics textbooks to **rent**. An honors option is available. (1 high school science credit)

Advanced Biology (Prerequisites: Completion of high school level Biology and Chemistry) Students take an advanced approach in this college-prep level course to learn about the amazing design of the human body and its systems. **2nd Edition (3 BOOK SET)**: Apologia textbook, spiral student notebook, and solutions/tests manual for Exploring Creation with Advanced Biology are used along with Kaplan's Anatomy Coloring Book, 10th Edition. (1 high school honors science credit)



Advanced Physics (Prerequisite: Geometry or currently taking Algebra 2; with or without prior physics course) Students investigate: Newtonian mechanics, thermodynamics / matter, electricity, magnetism, the physics of light and optics, and the worlds of relativity, quantum mechanics, and nuclear physics. The course is mathematically rigorous, and algebra based. Students learn to write a technical paper per quarter based on lab data. **BJU Press Physics textbook is a reference and is available for checkout from the classroom. A student could take this entirely virtually.** (1 high school science credit)



Health and Nutrition (9th-12th graders) This **1-hr./week** required course for a GA diploma provides students with an introduction to healthy living and nutrition. It covers key body systems such as the circulatory, digestive, immune, and reproductive systems. Students learn the importance of exercise, rest, and hygiene as well as how we are to be good stewards of our bodies through interactive activities and exposure to various sports. Apologia's Exploring Creation with Health and Nutrition, 2nd Edition, by Dr. Laura Chase, student textbook and spiral bound student notebook are used. (1/2 high school credit)
A student could take portions of this class virtually.

Technology Classes:

Computer Science Principles using Python (Prerequisites: Algebra 1) This is for students interested in Science, Technology, Engineering, or Math (STEM) with little or no prior programming experience, but with a desire to understand computational approaches to problem solving. Students learn and utilize the Python programming language. They become familiar with basic algorithmic techniques for solving common problems, as well as simulation and statistical methodologies for modeling complex systems and the foundations of machine learning. It requires logical aptitude or willingness to engage in complex problem solving. Students need to bring a laptop to class running Windows, macOS, or Linux operating systems (no Chromebooks). No textbook is required. ***A student could take this class entirely virtually.*** Class meets 3 hours per week. (1 high school science or technology credit)



Introduction to Design (8th grade and up) First semester explores the design process and how design has a human impact. Students gain an appreciation of previous and existing designs exploring their attributes, engineering, and design goals. Students engage in a design project that achieves pre-defined goals. Second semester is an introduction to Computer Aided Design (CAD). Students learn to use Fusion 360 to create 3D models covering concepts such as sketching, modeling, extrusions, surfacing, dimensioning, and simulations. Students will have access to 3D printing and laser cutting devices to output independent design projects. Students will be required to bring a laptop with Fusion 360 installed. A Fusion 360 Hobbyist or Student license is available from Autodesk for free. (This is taken as an elective: 1 high school technology credit. It does not satisfy the Georgia requirement of a 4th year science.)