

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.)

Botany (For ages 8 to 12)

Students explore the process of classifying plants, the development of plants from seeds, the reproduction processes in plants, the way plants make their food, and how plants get their water and nutrients and distribute them throughout the body of the plant. We build lighted plant huts so students can bring home plants to grow and experiment with throughout the year. This class meets once a month, 9 AM - 2 PM. Apologia textbook and associated notebooking journal for **NEW 2nd Edition** - Exploring Creation with Botany by Jeannie Fulbright



Anatomy (For 8 to 12 year olds)

This is an upper elementary level course that gives glory to God as students discover all that goes on in their bodies from their heads to the nails on their toes! Beginning with a brief history of medicine and a peek into cells and DNA, students investigate various aspects of their bodies including the skeleton, muscles, digestive system, respiratory system, genetics, and lots more! It meets once a month, 9 AM - 2 PM. Apologia textbook and associated notebooking journal for: Exploring Creation with Human Anatomy and Physiology by Jeannie Fulbright

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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 and associated spiral notebooking journal for: Exploring Creation with Chemistry and Physics are used.

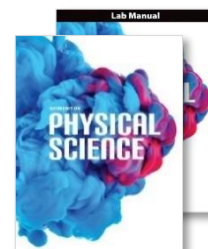


General Science (Generally for 7th graders) Students explore a wide range of topics including the history of science, the scientific method, astronomy, geology, paleontology, atoms, molecules, motion, simple machines, life science, oceanography, and ecology. This course is a step up from earlier classes, 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.



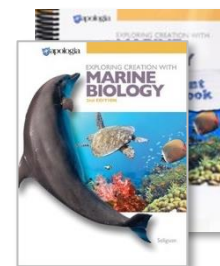
Earth Science (Generally for 8th graders) Students investigate the lithosphere to the hydrosphere to the atmosphere and then learn about space: the solar system and the rest of the universe. Case studies, activities, and hands-on experiments encourage students to think like scientists as they develop a biblical perspective of the earth and outer space. **BJU Press 5th Edition Earth Science student textbook and lab manual are used.**

Physical Science (Generally for 9th graders) Students learn chemical reactions, nuclear changes, solutions, acids and bases, and in the physics units they learn about the movement of matter and energy. Students will experiment, analyze samples, use data to make and test models, and complete STEM and inquiry-based labs. **BJU Press 6th Edition Physical Science student textbook and lab manual are used.** (1 high school science credit)



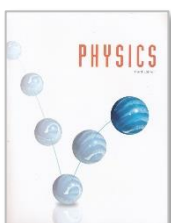
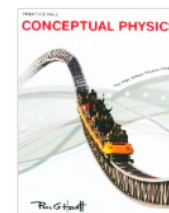
Honors Biology (Generally for 10th or 11th graders) Students explore classification, cellular biology, Mendelian genetics, dissection, and ecosystems. Extra credit projects include an insect collection, tree leaf collection, and an owl pellet skeleton reconstruction. **3rd Edition (3 BOOK SET)**: Apologia 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)

Marine Biology (Prerequisite: Completion of high school Biology) Students are introduced to oceanography, the chemistry of the ocean, and marine organisms: monerans (bacteria), protists, fungi, plants, and animals (sponges through chordates), ecological relationships in each ocean zone: from the intertidal zone to the estuary, coral reefs, continental shelf, epipelagic zone, and deep ocean. We concluded with a study of ocean resources and the effects of humans on the sea. We use Apologia textbook, spiral student notebook, and solutions/tests manual for Exploring Creation with Marine Biology, 2nd Edition, and the Marine Biology Coloring Book 2nd Edition, by Thomas M. Niesen. (1 high school 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** Students **rent** textbooks from Great Oak Academy. An honors option is available. (1 high school science credit)



Advanced Physics (Prerequisite: Completion of Algebra 2; with or without prior physics course) Students investigate Newtonian mechanics, thermodynamics and matter, electricity and 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 3rd Edition Physics student textbook is used. A student could take this entirely virtually.** (1 high school science credit)

Technology Classes:

Computer Science (Prerequisites: Algebra 1, 10th grade and up) 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 and 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.)