

Scope and Sequence for *Science in the Scientific Revolution*

This hands-on science course introduces a wide variety of scientific topics to elementary students of all ages. Because each lesson is built around an activity or experiment, it is engaging for all K-6 students. In addition, there are three levels of review for each lesson, so that the parent/teacher can choose the depth at which each student is expected to grasp the material. The course contains roughly 90 hours of instruction, 35 of which are composed of hands-on activities.

The course covers scientific topics in the context of history, discussing science as it was discovered by natural philosophers. The first 15 lessons cover the works of Nicolaus Copernicus and Andreas Vesalius. The lessons on Copernicus cover geocentrism, heliocentrism, the motion of the planets in the night sky, and parallax. The lessons on Vesalius cover the skeletal system, muscle system, digestive system, nervous system, circulatory system, respiratory system, and renal system.

The next 15 lessons cover Girolamo Fracastoro through Galileo Galilei, with special emphasis on the works of Galileo. The student learns about comparative anatomy, pulmonary circulation, supernovae, comets, pendulums, free fall, projectiles, and friction.

The next 15 lessons cover the discoveries of Johannes Kepler through Blaise Pascal. This section covers Kepler's first law, tides, vision correction, empiricism, acids, gases, blood circulation, the age of the earth, air pressure, Cartesian dualism, mixtures of chemicals, pressure, and Pascal's Law.

The next 15 lessons start with Thomas Bartholin and end with Robert Hooke. Students learn about anesthetics, the lymphatic system, vacuums, electric charges, Saturn and its rings, momentum conservation, clocks, the wave nature of light, atomic motion, sound waves, Boyle's Law, capillaries, xylem and phloem, microscopes, fossils, Hooke's Law, and planetary orbits.

The next 15 lessons cover the discoveries of Giovanni Cassini through Sir Isaac Newton. Students cover zodiacal light, snake venom, spontaneous generation, microscopic organisms, population analysis, flower anatomy and physiology, adding colors, diffraction, gravity, Newton's First Law of Motion, inertial balances, acceleration, and Newton's Second Law of Motion.

The final 15 lessons continue with Newton's work and end with Guillaume Amontons, Gottfried Wilhelm Leibniz, and Ole Christensen Rømer. They discuss adding forces, acceleration in free fall, Newton's Third Law of Motion, using all of Newton's Laws, viscosity, how friction works, the conservation of energy, binary numbers, and the speed of light.