

LTT SCIENCE CLASSES 2019-2020

ABOUT LTT'S SCIENCE PROGRAM: We recognize at LTT the importance of quality science classes that include complete lab sections. The tutors have developed a program that allows students to progress in science knowledge from middle school through high school. Our tutorials are blessed with authentic science equipment including microscopes and dissections pads plus so much more. We have everything needed including safety equipment to replicate a science course including labs. Our science tutors purposely teach students the skills to write labs and document them correctly in a laboratory notebook. At the end of our high school lab classes, this laboratory notebook also serves as proof for college admissions that course included the full lab requirements. We have also found doing science in a group setting helps facilitate discussion, teamwork, and understanding.

SCIENCE TRANSITION TO MIDDLE SCHOOL - WATERS OF THE EARTH (1.5 hour tutorial) - This is full year course aimed approximately at students in grades 5-6 who love science but are not quite ready for the rigors of middle school. Information will be presented in a gentle manner through various modalities including: lectures, discussions, numerous demonstrations and lab activities as well as many group assignments. Some of the skills we will be focusing on in order to better prepare students for middle school sciences will include: identifying main ideas, outlining, relating cause and effect, writing lab reports and building a science vocabulary. The following topics will be explored: Earth, The Water Planet, Freshwater Resources, Ocean Motions, and Ocean Zones. There will be weekly home assignments and students are expected to spend approximately 1-2 hours per week on homework. The textbook and workbook, *Earth's Waters*, will be purchased by the tutor.

Prerequisites: students should have good reading skills and average elementary arithmetic skills.

Required Materials: 2-inch, 3-ring binder with dividers, paper and pencils.

Material Fee: \$55 (includes required textbook - Prentice Hall Science Explorer - *Earth's Waters*; ISBN 0131150936)

Tutor: Anita Gallagher, galanitah@gmail.com

EARTH SCIENCE: (1.5 hour tutorial) – This is full year middle school level course focusing on the fundamentals of Earth Science. Topics covered will include: earthquakes, volcanoes, mountains, minerals and rocks, surface and ground water, atmosphere and weather. Information will be presented to students utilizing various modalities including: lectures, discussions, numerous demonstrations, laboratory activities, and group activities. This course includes frequent laboratory experiences where students will learn how to measure, investigate, analyze and report. Lab reports will be introduced and students will generate several full lab reports. Students will be expected to complete assigned reading, written work, and tests outside of class so that we can focus on the activities during class.

Required Materials: *BJU Earth Science* - 4th Edition (ISBN 978-1606820704) and a 2" binder with dividers.

Material Fee: \$35

Tutor: Anita Gallagher, galanitah@gmail.com

PHYSICAL SCIENCE (1.5 hour tutorial) – This is a full year high school level course (that can also be taken in late middle school) focusing on physics and general chemistry. In physics students learn about motion, forces, energy, and heat; in chemistry students learn about matter, its composition and the changes it undergoes. This course consists of abundant laboratory experiences where students will learn how to measure, investigate, analyze and report. Lab reports will be introduced and students will generate several full lab reports. Students will be expected to complete assigned reading, written work, and tests outside of class so that we can focus on the activities during class.

Prerequisites: Students should be proficient with basic arithmetic skills and currently taking pre-algebra or above.

Required Materials: Please purchase calculator (scientific or graphing) and 2" binder with dividers. A *Glencoe Physical Science* textbook will be provided to each student the first day of class by the instructor and will be returned at the end of the course unless you would like to purchase from the instructor.

Material fee: \$35

Tutor: Anita Gallagher, galanitah@gmail.com

BIOLOGY (1.5 hour tutorial) - This is a rigorous college-prep high school course with corresponding lab work including dissections that covers the basic principles of Biology. Topics include overview of the classification of organisms and a survey of representative species, basic cell biology and biochemistry concepts, the anatomy and physiology of representative organisms, genetics, ecology, and a discussion of evolution. The student will be responsible for homework assignments based on questions in the chapters as well as maintaining a laboratory notebook designed to document the experiments performed. This laboratory notebook also serves as proof for college admissions that the Biology course included a laboratory section.

Required Materials: *Apologia's Exploring Creation with Biology* - 2nd edition, (ISBN 978-1932012545) along with the *Solutions and Test Manual* (ISBN 978-1932012552) by Jay Wile and a binder with dividers and 500 notecards of any size/color. The instructor will provide the lab notebook.

Material Fee: \$35

Tutor: Melissa Lamb, melissa745@gmail.com

CHEMISTRY/HONORS CHEMISTRY (2 hour tutorial) - This is a rigorous college-prep high school course with corresponding lab work that covers the basic principles of Chemistry. Topics include significant figures, moles, stoichiometry, acids and bases, atomic structure, gas laws, and thermodynamics. This class will complete the text, labs, as well as additional practice problems. Students who complete this plan of study will be well prepared for college level Chemistry. Additional independent study work will be offered for those who wish to take this course at the Honors Level. The student will be responsible for homework assignments as well as maintaining a laboratory notebook designed to document the experiments performed. This laboratory notebook also serves as proof for college admissions that the Chemistry course included a laboratory section.

Prerequisites: Algebra 1

Required Materials: *The Spectrum Chemistry* by Wilemon and Dobbins ISBN 978-0966657869 (textbook only, available at www.beginningspublishing.com or you may use other available retailers), scientific calculator, and a binder with dividers. The instructor will provide the lab notebook.

Material Fee: \$35

Tutor: Melissa Lamb, melissa745@gmail.com

PHYSICS (1.5 hour tutorial) - This is a rigorous college-prep course with corresponding lab work that covers the basic principles of physics. Topics include general physics concepts, vectors, waves, optics, electricity and magnetism. This class will complete the entire text, labs, as well as additional practice problems. Students who complete this plan of study will be well prepared for college level Physics. The student will be responsible for homework assignments based on questions in the chapters as well as maintaining a laboratory notebook designed to document the experiments performed. This laboratory notebook also serves as proof for college admissions that the Physics course included a laboratory section.

Prerequisites: Algebra 2 and a basic knowledge of trigonometric functions (sine, cosine, tangent), or permission of the instructor.

Required Materials: *Apologia's Exploring Creation with Physics* (2nd edition required) by Jay Wile, scientific calculator, and a binder with dividers. The instructor will provide the lab notebook.

Material Fee: \$35

Tutor: Melissa Lamb, melissa745@gmail.com

ANATOMY & PHYSIOLOGY (1.5 hour tutorial) - This advanced biology high school class provides an introduction to the anatomical structures and physiology of the human body. It covers the different organ systems in detail, explaining how they're structured and how the organs perform their tasks, touching on topics of histology, molecular biology, and biochemistry throughout the class. This course contains laboratory experiments and dissections that help illustrate the topics in the class and the student will be responsible for maintaining a laboratory notebook designed to document the experiments performed. This laboratory notebook also serves as proof for college admissions that the course included a laboratory section.

Prerequisites: Biology, Chemistry

Required Materials: *Apologia's Advanced Biology: The Human Body - 2nd Edition* (ISBN 9781935495727), *Apologia's Advanced Biology Solutions and Test Manual* ISBN 978-1-935495-97-0), and the *Kaplan Anatomy Coloring Book, Fifth Edition* (ISBN 978-1618655-98-1). Students also need a binder with dividers and 500 notecards of any size/color. The instructor will provide the lab notebook.

Material Fee: \$35

Tutor: Melissa Lamb, melissa745@gmail.com
