Exploring NASA Topics in AP Science* with TI-Nspire™ Technology

Available in 1- and 2-day configurations *Content Knowledge*

Audience: Educators who want to incorporate NASA applications across AP science courses.

Technology: TI-Nspire™ CX handheld, TI-Nspire™ Lab Cradle and Vernier® data collection sensors.

Overview: This workshop covers NASA lessons for AP Biology, AP Chemistry, and AP Physics that incorporate actual data and problem-solving situations from manned space exploration. Essential TI-Nspire skills will be covered with interactive lessons and data collection labs.

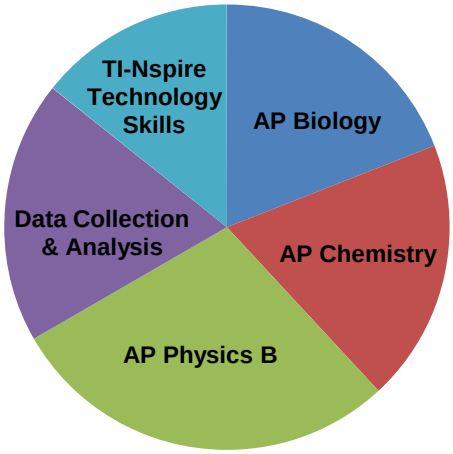
Workshop Objectives:

1-day	Overview of the TI-Nspire handheld; exploration of interactive NASA lessons with premade student questions, supporting teacher notes, and videos designed to engage students with the content; introduction to data collection with various Vernier sensors.
2-day	Exploration of a broader range of NASA lessons; additional coverage of the TI-Nspire handheld, including data collection and analysis; opportunities for differentiation based on educators' needs; addresses content from the subjects and units indicated below.

AP Biology: Heredity & Evolution (Molecular Genetics); Organisms & Populations (Structure & Function of Plants & Animals; Anatomy & Physiology)

AP Chemistry: States of Matter (Gases); Reactions (Reaction Types, Stoichiometry)

AP Physics B: Newtonian Mechanics (Kinematics; Newton's Laws of Motion; Work, Energy & Power; Circular Motion & Rotation; Oscillations & Gravitation); Fluid Mechanics (Pressure)



Data collection labs use the CBR 2™ motion sensor, Vernier EasyTemp™ USB temperature sensor, gas pressure sensor and current probe.

Sample Lesson: *Lunar Landing*

Background: The moon's gravitational force affects the amount of thrust, or opposing force, needed to land. Students will explore the real-world problem of a lunar landing by applying equations of motion and force to solve for unknowns.

Objectives: Choose a coordinate system best suited to the lunar landing problem; determine magnitude and direction of vectors; calculate a spring constant.