



Implementing STEM Practices with TI-Nspire™ Technology

Available in 1-, 2- and 3-day configurations

Instructional Practices

Audience: Educators who want to implement the STEM practices in middle grades and high school science classrooms using TI-Nspire™ technology.

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

Overview: This workshop explores strategies for implementing and mutually reinforcing STEM practices with TI-Nspire technology. Learning outcomes focus on the integration of technology, engineering and mathematics into the science classroom.

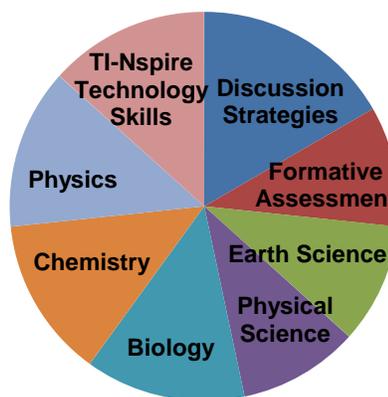
Workshop Objectives:

1-day Introduction to STEM practices in the context of data collection and analysis; brief discussions of classroom applications and how technology can support the practices; overview of essential TI-Nspire and data collection skills.

2-day Additional coverage of STEM practices in the context of dynamic, interactive simulations; discussion of questioning strategies that promote student learning; further exploration of free, online resources that use TI-Nspire technology.

3-day Deeper discussions of strategies for engaging students in STEM practices through data collection; exploration of formative assessment techniques and reflection on the role of technology; addresses the subjects and units indicated below.

- Earth Science:** Earth's Atmosphere
- Physical Science:** Forces & Motion, Energy
- Biology:** Cells, Genetics, Human Body
- Chemistry:** Chemical Bonding; Chemical Reactions; Gases, Liquids, & Solids; Acids, Bases & Salts
- Physics:** Forces & Motion; Work, Energy & Momentum



Sample Lesson: *Roto-copter*

Objective: Model the descent of a roto-copter by collecting data with the CBR 2™ motion sensor and graphing it with the Vernier DataQuest™ app. Analyze the graph to determine the terminal velocity, and reengineer the roto-copter to minimize its terminal velocity.

STEM Practices: Developing and using models; planning and carrying out investigations; analyzing and interpreting data; constructing explanations (for science) and designing solutions (for engineering); engaging in argument from evidence.