

CHEMISTRY Core Training Modules—Year One

Participants will explore lessons from the LTF Chemistry guide. Each day will entail some direct content instruction as well as active learning through laboratory explorations. Participants will examine the processes of learning science and engage in meaningful discussions of rigor and pace in the Pre-AP Chemistry classroom. Participants are given passwords to access the protected materials on the LTF website, including diagnostic activities and End-of-Course test materials. Teachers leave every training day with lessons that are classroom-ready and with sufficient preparation to begin using the lessons in their own classrooms.

Day One Introduction to Laying the Foundation through Experimental Design

This is the first module of any science training series. It will be presented to a mixed audience of middle school and high school teachers. It explores the layout of the guides and emphasizes the philosophies and strategies we employ. Participants will develop the concept of experimental design by performing selected activities from the middle grades, biology, chemistry and physics courses.

Day Two Graphing Calculators and Data Collection Devices

Pre-AP Chemistry teachers will explore the use of TI graphing calculators and data collection devices in the chemistry classroom. A step-by-step guide to using the calculator and data collection device will be examined and practice activities will be performed.

Day Three Atomic Structure

Pre-AP Chemistry teachers will explore lessons from the LTF Chemistry guide that develop the concepts of matter and atomic structure. The discussion portion of the day will develop student friendly methods for teaching electron configurations, orbital notation and quantum numbers. Participants will perform two simple activities that integrate algebra and graphing skills into this unit of study.

Day Four Bonding and Nomenclature

Pre-AP Chemistry teachers will explore lessons from the Chemistry guide that focus on bonding and nomenclature topics. The discussion portion of the day will address teaching students to draw Lewis structures, determine molecular geometries, and write correct chemical formulas. Two activities will be performed that investigate the importance of intermolecular forces and the geometry of molecules.