



Retain and Train Qualified Teachers

Provide your teachers with the most up-to-date skills and comprehensive knowledge needed to effectively reach today's students. These hands-on workshops will prepare new and experienced teachers with techniques, ideas, and activities they can take back to the classroom and implement easily into current curriculum. Choose from the many available topics below.

■ Safety in the Chemistry Lab

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Science teachers responsible for handling and storing chemicals

Description: Reduce accidents and improve the safety in your classroom by understanding fundamental chemical safety topics including teacher and school liability, chemical hazards, reading labels & MSDS, safe handling & storage procedures, and using proper safety equipment.

■ Safety in the Biology Lab

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Science teachers responsible for handling and storing biological and chemical materials

Description: Improve safe conditions in your biology classroom and reduce student accidents by learning fundamental chemical and biology safety topics including teacher and school liability, understanding chemical hazards, reading labels & MSDS, safe handling of preserved materials, sharps usage, disposal procedures, field work, and using proper safety equipment

■ Safety Inspections for OSHA Compliance

Grade Level: 6–12 • *Workshop Length:* 4 hours

Who should attend: Department chairs responsible for the safety of their science rooms

Description: Ensure your science classroom is safe through the demonstration of fundamental safety topics, including teacher and school liability and a lesson on how to inspect your science department for OSHA compliance. Includes a complete inspection of science classrooms, laboratories, prep rooms, and storage rooms.

■ CSI Blood Spatter

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Science teachers interested in introducing Forensic topics

Description: An ideal activity for beginning forensics students, the simulated blood used for this activity is completely safe and non-biological. Using simulated blood, participants will learn to conduct blood typing tests as well as learn basic skills of interpreting and understanding blood spatter.

■ CSI Sherlock Bones

Grade Level: 6–12 • *Workshop Length:* 4 hours

Who should attend: Science teachers interesting in beginning Forensic topics

Description: An excellent mini-course or final lab practical for Forensic science students, this course material demonstrates actual techniques used in forensics to identify and assess skeletal indicators. Both math and observational skills are used to analyze the included skeletal remains of an unknown subject. With the help of measuring tools, sex, height, race, and approximate age of the skeleton at the time of death are determined.

■ Bring Technology Into Your Science Lab

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Science Teachers

Description: Transform your lab into a 21st century learning environment when you learn how to collect large volumes of data using digital probes and sensors. This data is then easily analyzed and manipulated using common spreadsheets and graphing programs—just like real-world scientists. You'll also discover how to incorporate these exciting new tools into your science program by performing a series of inquiry-based labs using the latest in technology products.

■ Digital Microscopy

Grade Level: 6–12 • *Workshop Length:* 4 hours

Who should attend: Teachers interested in learning about digital microscopy

Description: Enhance your students' laboratory experience with digital microscopy. Each participant will receive a digital microscope to use in six different activities. A copy of each activity is also supplied, so you can implement what you learned in the classroom.

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■ DigiScope for Middle Schools

Grade Level: 4–8 • *Workshop Length:* 2 hours

Who should attend: Science teachers interested in a student-friendly digital microscope

Description: Experience first-hand the benefits of this reasonably priced, high quality, user-friendly microscope. Participants will receive a DigiScope and related activities to take back into the classroom for immediate use.

■ Overcoming Mole-Phobicity: Intro to Solution Prep

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Science Teachers and Lab Technicians responsible for preparing, handling and storing chemicals

Description: Learn the fundamentals of making simple solutions for chemistry and biology classes as well as techniques for more complex biological and histological, solutions. Also gain basic understanding of chemical hazards, preparing labels, safe handling & storage procedures, and using proper safety equipment.

■ Best Practices for High School Labs

Grade Level: 9–12, great for new teachers • *Workshop Length:* 2 hours

Who should attend: Science Teachers that teach Life and Physical Sciences

Description: Make your classroom and labs more efficient and productive by using best practices from throughout the country. New procedures to help minimize prep and clean up time as well as time-saving equipment are demonstrated. With these new skills, your students will spend more of their time learning by performing hands-on science.

■ Fundamentals of Science: Measurement and Density

Grade Level: 6–10 • *Workshop Length:* 2 hours

Who should attend: Physical Science Teachers

Description: Travel through a series of activity stations that teach concepts of measurement and density in hands on activities. Learn techniques for accurate measurement of area, volume, and mass, as well as how to use a Vernier caliper, and determine the density of common shapes and materials.

■ Fundamentals of Science: Magnetism and Projectiles

Grade Level: 6–10 • *Workshop Length:* 4 hours

Who should attend: Physical Science Teachers

Description: Discover force fields, force field mapping, attraction and measuring magnetic strength as you walk through a series activity stations demonstrating concepts of magnetism. You'll also launch indoor air rockets and learn the math and science behind projectiles and rockets.

■ Hands-On Germs

Grade Level: 6–8 • *Workshop Length:* 2 hours

Who should attend: Middle School Life Science Teachers

Description: Conduct a fun, easy hands-on experiment to help your students visualize how easily germs are transmitted. Participate in the timely teenage topic of disease transmission using a simulated disease. Basic testing will be conducted.

■ Hands-On Simulated Blood and Urine

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Discover the ease of using Ward's simulated blood and urine in your laboratories. Participants will have the opportunity to conduct testing using both fluids. Activities will show the possible diagnosis based on test results using the simulated fluids.

■ Animal Behavior

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Observe first-hand the interaction between organism, behavior patterns, habitat selection, and their responses to various environmental conditions such as moisture, light, pH, and more. Using multi-chamber living environments and small living specimens, these hands-on activities address the behavioral assessment of species and the basis of behavior and biopsychology concepts. Participants will develop and test their own experiments in this hands-on, inquiry-based workshop.

■ Hands-on Genetics

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Engage your students in practical, real-life genetics experiments using hands-on, inquiry-based activities. Topics include Mendelian Genetics, genotype/phenotype, dominant/recessive traits, and human genetics. Simulated activities and models make this important and timely 21st century topic come alive in your classrooms.

■ Microscope Cleaning & Maintenance

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Any science teacher who has microscopes in need of cleaning and basic troubleshooting.

Description: Walk through the basics of microscope parts, how to clean, and troubleshoot your microscopes. An ideal opportunity to get hand-me-down microscopes in good working condition, this workshop also provides each participant with a cleaning kit and maintenance manual.

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■ Teaching Life Science with Living Specimens

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Teach structure and function of anatomical features and body systems by comparing living specimens. The basics of physiology and biology come together when students use inquiry and observations to study living materials and answer the question: *Why can some species survive under water and others exist only in hot, dry environments?*

■ Dissections Made Easy

Grade Level: 6–12 • *Workshop Length:* 4 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Master the fundamentals of using preserved specimens to teach basic and comparative anatomy. Structure and function of internal organs and systems becomes real when students dissect and see the various systems up-close. Learn how to properly and safely dissect worms, crustaceans, fish, amphibians, and mammals all in one workshop.

■ Mastering AP Biology

Grade Level: 10–12 • *Workshop Length:* 4 hours

Who should attend: High school AP Biology

Description: Help your AP Biology students succeed by understanding how to use the 'dirty dozen' AP Biology labs to properly teach AP Biology. Learn the latest lab techniques and helpful hints from an expert AP Biology teacher to make the most out of your AP Biology labs.

■ DNA on A Chain

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Learn to extract DNA from cheek tissue, collect cells, lyse cell membranes, separate DNA from other cell contents, and isolate DNA in an easy experiment that uses a minimal amount of materials. Make your very own DNA necklace to take with you!

■ Physics Demos Made Easy

Grade Level: 8–12 • *Workshop Length:* 2 hours

Who should attend: High School Physics Teachers, Physical Science Teachers

Description: Grab your students' attention and engage their natural curiosity with quick, easy, and exciting demos that immediately interest students in the subject matter. This session provides teachers with training on numerous different physics demos proven to engage students and enhance learning. The demos presented will involve every day items and some materials Cenco Physics.

■ Inquiry Based Physics

Grade Level: 10–12 • *Workshop Length:* 2 hours

Who should attend: High School Physics Teachers

Description: For teachers tired of cookie cutter labs that don't engage students, this workshop will demonstrate how to break the mould of classroom learning.

Get students to ask and answer their own physics questions with exciting, hands-on experiments. This session teaches inquiry-based labs based around mechanics and optics for physics with algebra at the high school level.

■ ScholAR Chemistry Demonstrations

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Physical Science and Chemistry Teachers

Description: Safely and easily perform colorful chemistry demonstrations to bring key chemical concepts to life in your classroom. Introduce and teach the fundamentals of acid-base chemistry, equilibrium, kinetics, polymers, and thermochemistry using tangible demonstrations. Practice and master these demonstrations prior to leading students through the labs.

■ Hands-on Chemistry Labs

Grade Level: 6–12 • *Workshop Length:* 4 hours

Who should attend: Physical Science and Chemistry Teachers

Description: Complex chemistry concepts are best introduced using simple, hands-on labs that allow students to explore chemical phenomena and then inquire about the science behind color changes. Introduce and teach the fundamentals of periodicity, bonding, stoichiometry, equilibrium, kinetics, and thermochemistry using labs that are easy to perform and understand. Teachers gain confidence in performing these labs, so they can effectively repeat them in the classroom.

■ Technology for AP Chemistry

Grade Level: 10–12 • *Workshop Length:* 4 hours

Who should attend: AP Chemistry Teachers

Description: Use the latest technology with your students to perform more AP Chemistry labs and analyze even more data, which is the basis of the AP Chemistry exam. Master the technology that facilitates teaching gas laws, pH, kinetics, and equilibrium and also prepares students for real-world laboratory analysis. Participants will practice and overcome the start-up problems of using technology.

■ "Exciting Chemistry"

Grade Level: 6–12 • *Workshop Length:* 4 hours

Who should attend: Physical Science and Chemistry Teachers

Description: Get 'tubular' by using innovative and safe chemistry tubes to teach hands-on chemistry. Learn how to use teaching tubes in performing chemical demonstrations and then have your students use mini-lab tubes to repeat the demonstration and collect valuable data independently. Chemistry comes alive with these hands-on, inquiry-based demos and labs.

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■ AP Hands-on Chemistry

Grade Level: 10–12 • *Workshop Length:* 4 hours

Who should attend: AP Chemistry Teachers

Description: Learn how to use the 22 recommend labs that the AP Chemistry exam requires. Utilize the labs as learning tools to understand AP chemistry concepts and preparation for student success on the AP Chemistry exam. Participants will practice and overcome the common problems with several of the more complex AP labs.

■ Starting a 21st Century Biotech Program

Grade Level: 6–12 • *Workshop Length:* 4 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Learn the key concerns and integral steps involved in starting a biotechnology course or program from an expert in biotech education. Topics include preparing facilities, curriculum, funding, student populations, workplace experiences, authentic assessment, and more.

■ Discovering DNA and Electrophoresis

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Life Science teachers

Description: Develop strategies for teaching students how to accurately analyze DNA and conduct electrophoresis. Receive training on the proper use of equipment and tips on using these tools with your students.

■ Comparative Anatomy Using Dissections

Grade Level: 6–12 • *Workshop Length:* 4 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Gain confidence in using preserved specimens to teach basic and comparative anatomy. Use real organisms to demonstrate first-hand the relationships between structure and function of internal organs and systems. Learn how to properly and safely dissect worms, crustaceans, fish, amphibians, and mammals with your students then compare their anatomy.

■ Intro to Blood Typing Using Simulated Blood

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Life Science Teachers

Description: Use simulated blood to conduct basic blood typing tests such as blood smearing, ABO and Rh blood typing, and testing familial relationships. This hands-on workshop offers participants real-world experience using a safe and easy-to-use, non-biological blood substitute.

■ Easy Physiology Using Technology

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Life Science Teachers

Description: With new, low-cost sensors and probes, you can teach physiology without complicated technology and complex labs. Study heart rate, EKG, and respiration through designing your own inquiry-based experiments and collecting real-time data to study physiology and anatomy.

■ Crop Science and Sustainability

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School AgriScience Teachers

Description: Learn the latest in teaching Ag Science and crop sustainability using innovative and hands-on activities. From learning about photosynthesis and transpiration to exploring growth movements in plants, the fundamentals of crop science are best taught using inquiry-based lab activities. Ward's Rapid Radishes lab activities will also be demonstrated to teach plant growth and genetics.

■ Alternative Energy Sources

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Science Teachers

Description: Alternative energy is in the news—now get it into your classroom. New, innovative hands-on activities will help your students better understand alternative energy options the science associated with each. Understand the basics of alternative energy and learn how to demonstrate how solar power, shale oil, biodiesel, and fuel cells will play a role in the near future.

■ Robotics

Grade Level: 6–12 • *Workshop Length:* 2 hours

Who should attend: Middle School and High School Science Teachers

Description: Introduce the fundamentals of computer programming and engineering through building, programming, and testing simple robots. The hands-on projects offer students a sense of pride and ownership in the final product, and a real-life application of STEM learning.

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