Arts

The Art of Teaching the Arts: A Workshop for High School Teachers

For: high school teachers

The Art of Teaching the Arts: A Workshop for High School Teachers is an eight-part professional development workshop for use by high school dance, music, theatre, and visual art teachers. The workshop examines how principles of good teaching that apply to all subjects are carried out in teaching the arts at the high school level. The workshop is intended for use by mixed groups of teachers from all four arts disciplines, to help them improve their practice.

The workshop is centered around eight one-hour video programs. The first program introduces seven principles of effective teaching. Each principle is explored in depth in a subsequent program. All programs include classroom segments with teachers of dance, music, theatre, and visual art. Teachers are shown demonstrating their practice and discussing their goals, methods, and experiences. These teachers work at arts magnet high schools and comprehensive high schools in cities and towns across the country.

This Web site supports and augments the video programs. It includes activities for workshop sessions that encourage participants to draw on their own experiences; background on the schools and teachers featured in the video programs; and interactive features that provide perspective on the teaching principles. A downloadable print guide is available for each workshop session, and for the whole series.

The Arts in Every Classroom: A Workshop for Elementary School Teachers

For: K-5 teachers

This video workshop provides new ideas about working with the arts for K-5 classroom and arts specialist teachers. The eight one-hour video programs show workshop leaders from the Southeast Center for Education in the Arts working with Learner Teams — teachers, principals, and arts specialists — from three elementary schools. The Learner Teams work through a curriculum unit based on a multi-arts performance piece by Cirque du Soleil. Classroom segments show schoolchildren engaged in the same lessons. Learner Team members then begin to design their own arts-based units, and return to their schools to put into practice what they learned.

Connecting With the Arts: A Workshop for Middle Grades Teachers

For: Grade 6-8 teachers

Connecting With the Arts: A Workshop for Middle Grades Teachers is a video workshop for middle school teachers of the arts and other subjects. The workshop includes eight hour-long video programs and a companion workshop guide and Web site. The workshop shows middle school teachers why and how to integrate the arts (dance, music, theatre, and visual art) with other subjects (language arts, social studies, science, and math). Extensive classroom examples present teachers working together to create rich integrated learning experiences for their students. A roundtable panel of arts educators discusses each of the classroom examples and shares their own experiences with arts integration. The eight programs guide viewers in discussing key elements of arts integration, enabling them to begin integrating the arts more effectively in their own schools. Participants define what arts integration means, plan collaborations with colleagues, clarify student roles in the artistic process, work on designing instruction that helps students explore connecting concepts and big ideas, and examine assessments to determine what students are learning. The workshop provides a stimulating learning experience for individual teachers and professional development groups.

Education Theory and Issues

Critical Issues in School Reform

For: K-12 teachers

Talking about school reform isn't new. What is new are the many ways that schools and communities are now turning talk into action by adapting, implementing, or even inventing tools to help them make real improvements in student achievement.

This series takes viewers to eight places around the country where teachers, parents, administrators, civic leaders, and others are collaborating on new practices in public engagement and professional development.

The Learning Classroom: Theory Into Practice

For: K-12 teachers

Participants in the course will explore learning theories, examine their own teaching, and discuss applications for classroom practice. The first sessions (one through four) look at students as learners: how they develop, process information, and use their multiple intelligences. The second group of

sessions (five through seven) looks at how teachers construct a positive, productive environment for learning. The third group of sessions (eight through eleven) focuses on how to help students master content and develop the skills they will need in life. The final two sessions (twelve and thirteen) focus on motivating students and creating a school culture that supports learning in everything the school does.

Looking at Learning . . . Again, Part 1

For: K-12 teachers

Ever since the first time teachers tried to influence students, there has been controversy surrounding the methods they used. In the years since Socrates first created and honed his famous method, hundreds of educators have developed theories about learning and teaching. Among these there are many areas of convergence as well as a few instances of contention, but all have in common a focus on how children learn and how best to create situations in which learning can take place. For today's teachers the challenge becomes "What are these theories really telling us? What do we do with these seemingly complicated and overlapping arguments?" And equally compelling is how the questions surrounding these ideas are viewed by professionals against the background of their own personal beliefs about teaching and learning.

To this end, LOOKING AT LEARNING . . . AGAIN invites seven leading educators to share the origin, structure, research base, and applicability of their arguments for creating the most efficient and productive learning environments for students in our elementary and secondary mathematics and science classes.

Teachers are the backbone of the educational system. Like educational theorists, they continually develop new ideas and insights, question current practices, and strive to keep education a living and changing organism. Both teachers and theorists bring to the table a wealth of experience that has shaped their ideas on what teaching and learning should be. But all too often teachers and theorists work in isolation, and new educational theories do not always find their way into the classroom. This workshop series provides an opportunity for practitioners to explore, discuss, critique, and ultimately implement the ideas and strategies of seven leading educational theorists -- an important step toward making the teaching of mathematics and science more effective.

Looking at Learning . . . Again, Part 2

For: K-12 teachers

How many times have you wished you could just erase your students' "wrong" ideas and help them relearn a topic? It's tempting to think that a teacher's job is simply to push those ideas aside and teach "right" ideas as replacements, but contemporary learning theories indicate that students are best able to rethink and exchange their ideas when they have tested them experimentally and shared their thinking with others. To assist children in this process, teachers must be armed with knowledge of how children construct their ideas and how they can help children make sense of their world. Children's prior knowledge, like our own, is powerful and often persistent, and we have much to learn about it!

This series provides elementary and secondary teachers of mathematics and science the opportunity to hear from science and mathematics educators and some of the teachers, students, and parents who work with them. Each of the eight featured educators has studied some aspect of teaching and learning and has proposed modifications of classroom practices as a result of that research. *Looking at Learning Again... Part 2* encourages teachers to examine how theory and research into learning may inform their own classroom work. The series provides opportunities for teachers to discuss, critique, and apply the presented ideas with their colleagues. Finding ways to share ideas and to learn more about knowledge that is being newly generated is the core of this workshop series. In order to make teaching more effective, many different perspectives are brought together through videotapes, readings, discussions, and the Internet.

New American Schools: Getting Better by Design

For: educators and those interested in reform

Great schools don’t happen by accident. They happen by design. This nine-part workshop series examines New American Schools, a leader in the growing national movement known as "comprehensive school reform," and its Design Teams, which each bring a unique vision to helping schools raise the achievement of all students. The workshops will explore the approach of each Design Team and the support to educators and communities each provides by taking viewers inside schools using the models. Segments will also document New American Schools’ advocacy of reform that addresses all core subjects, all grades, and all school resources — human, financial, and technological, as well as leadership that school districts can provide to schools undertaking this kind of comprehensive reform.

Principles for Principals

For: K-12 principals

Using documentary footage gathered in schools from Maine to California, the workshops will help principals gain the knowledge and skills they need to make their vision of teaching and learning math and science a reality.

Participants will learn about the impact of state and national standards, discuss varied approaches to teaching and learning in math and science, see new curricula being implemented, and compare effective models of professional development for teachers and principals.

History and Social Studies

Bridging World History

For: High school and college teachers

Bridging World History is a set of multimedia materials designed to help learners discover world history and:
Develop a dynamic conceptual framework for the study of world history, its theoretical constructs, and its historiographical practices.

Establish a spatial and temporal grasp of the peoples and cultures that comprise world history, spanning thousands of years and the entire globe.

Discover insights into thematic relationships that shape our understanding of world history.

Span the gaps between what learners comfortably know and what they need to comprehend in order to explore a truly global and relevant past.

Bridging World History is inquiry-based, integrated, and recursive, and uses video, Web, and text materials to provide a comprehensive and interactive learning experience. The video and Web materials may be used non-sequentially and on their own as supplements to the study of world history; however, in their entirety, the materials provide a complete world history course.

The Economics Classroom: A Workshop for Grade 9-12 Teachers

For: Grade 9-12 economics teachers

This series of teacher development workshops is intended for high school teachers of economics, many of whom have little or no background in the subject, to help them learn effective lessons and techniques for bringing this important and often misunderstood subject to their students.

Eight workshops organized along broad subject lines illustrate how economists think, how markets operate and how and why the government participates in the economy. Watching real classroom lessons, you'll see students learning the basics of personal finance as well as a few things about wealth that they never knew before. Demonstrations and exercises designed by economic educators also cover the role of the entrepreneur and innovation in economic life, as well as the dynamics of international trade.

Making Civics Real: A Workshop for Teachers

For: Grade 9-12 teachers

The workshop aims to improve civic education across the nation for grades nine through 12 through professional development of civics teachers. Each of the eight programs presents authentic teachers in diverse school settings modeling a variety of teaching techniques and best practices. These methodologies are applied to a variety of social studies courses from a ninth-grade government/civics/economics course to a 12th-grade law course.

This workshop is appropriate for both novice and experienced high school social studies teachers and recognizes the importance of meeting national standards for civic education. Each lesson references the national standards of the Center for Civic Education and the National Council for the Social Studies.

Primary Sources: Workshops in American History

For: Grade 9-12 history teachers

In this workshop, 12 high school history teachers explore the use of primary-source documents in the research and interpretation of American history. The programs feature informal lectures by prominent historians on pivotal events from the settlement of Jamestown to the Korean conflict and the Cold War. The teachers are led in discussions, debates, interviews, and role-playing as they investigate the original documents that “transmit the voices of America’s past.” Teachers will find that the activities in this workshop can be adapted and used in their own classrooms.

The topics relate to programs from Annenberg Media's instructional series ***A Biography of America,*** which can be viewed in coordination with this workshop.

Social Studies in Action: A Methodology Workshop, K-5

For: Grade K-5 teachers

Social Studies in Action: A Methodology Workshop, K-5 captures innovative teaching practices, learning theories, and classroom activities designed to stimulate your teaching and enhance your curriculum.

This eight-part workshop provides a methodology framework for teaching social studies, with a focus on creating effective citizens. Individual workshop sessions explore social studies themes, strategies for planning and teaching, and ways to connect social studies to the world beyond the classroom.

Led by social studies educator Mary A. McFarland, participants reflect on fundamental issues in teaching and learning social studies through discussions, debates, and lessons that can be adapted to a K-5 curriculum. With the companion guide, available on this Web site and as a printable PDF document, this video workshop provides a stimulating learning experience for individual teachers or professional development groups.

Teaching Geography

For: Grade 7-12 social studies teachers

Literature and Language Arts

Artifacts & Fiction

For: Grade 9-12 teachers

Teaching the geographical perspective - spatial consideration, including size, scale, relative location, regional similarities, spatial variation, and human-environmental interaction.

Teaching World Regional Geography content - understanding why and how places with similar characteristics evolve as distinct cultural and geographical regions; comparing and contrasting regions.

Teaching Human (Thematic) Geography content for the new College Board Advanced Placement test - investigating urbanization, rural land use, migration, and other aspects of population, the spatial nature of politics and land use patterns.

Integrating the 18 National Geography Standards, the geographic perspective and five geographic skills with the geographic content.

Helping seventh- through 12th-grade educators enhance their geography teaching skills.

Conversations in Literature

For: Grade 6-12 teachers

Conversations in Literature is a professional development workshop series for language arts teachers working with students in middle and high schools. We hope you will see these programs as a chance to step back from your professional lives and think about the very basics of your career – remembering why you love literature and exploring what you can do to awaken this same sense of joy for the readers in your classroom.

In these programs, you will meet a group of people not unlike yourselves. Although they have made different career choices — some are teachers, some are professors, and others are authors — they all have several things in common.

They all feel that being engaged in literature is one of the most satisfying and enriching experiences of their lives. And they are also passionate about teaching literature. They all believe that it is important for all students to know the joys they themselves feel as they interact with poems, short stories, drama, and other works of fiction.

Developing Writers: A Workshop for High School Teachers

For: Grade 9-12 teachers

Developing Writers: A Workshop for High School Teachers presents practical and philosophical advice for teaching writing, while examining issues every teacher faces—such as high-stakes assessments and dealing with differently-

abled students. Eight video programs feature teachers in diverse classrooms around the country who are helping their students grow as skilled and effective writers. Participants will observe how the teachers and their students work together to create writing communities. Professional writers will share their processes as they move from initial concepts to publication, and comments from researchers, theorists, students, and teachers add context.

Engaging With Literature: A Workshop for Teachers, Grades 3-5

For: Grade 3-5 teachers

Every teacher knows the powerful moments when students actually begin to "live" the literature they are reading. Their minds are working nonstop—forming ideas about what they are reading, seeing the characters and the world they live in, validating hunches, evaluating the way the words strike them.

How can we plan for and provide these compelling experiences for all students? That's the basic question the eight teachers in this workshop tackle. Explore along with them to find out what it means to be truly engaged in a work of literature.

The Expanding Canon: Teaching Multicultural Literature in High School

For: Grade 9-12 teachers

THE EXPANDING CANON: Teaching Multicultural Literature in High School explores Native American, African American, Asian American and Latino works through four pedagogical approaches.

In Search of the Novel

For: Grade 6-12 teachers

A series of eight professional development workshops designed for middle and high school teachers illustrating innovative tools and strategies employed in the study of the novel.

Making Meaning in Literature: A Workshop for Teachers, Grades 6-8

For: Grade 6-8 teachers

Examining. Thinking critically. Wondering. Imagining. Growing. At its best, reading literature with your students has the power to enthuse and encourage them to new levels of success in countless directions. At your best, your

teaching has the power to provoke thoughts, expand worlds, and help your students grow academically, socially, and personally.

This workshop is about combining the best of literature with the best of teaching to create communities of learners where literature is the path to growth. Based on solid philosophies and sound practices, it explores ways to shape reading, writing, and discussion into the genuine opportunities for personal development you always knew they could be.

Teaching Foreign Languages K-12 Workshop

For: Grade K-12 teachers

The *Teaching Foreign Languages* workshop will help K–12 foreign language teachers improve their practice by making connections between the National Standards for Foreign Language Learning and current research in foreign language education. Workshop components include eight lively half-hour video programs with leading researchers and practicing teachers discussing how the standards play out in day-to-day classroom situations, a workshop guide available online and in print and interactive activities on the Web.

Become a student yourself as you watch the videos, complete a range of activities designed to stimulate your teaching, and prepare to conduct action research in your own classroom. You will come away with a deeper understanding of the national foreign language standards and with ideas for implementing effective assessment strategies and working with learners across a range of language and skill levels.

Teaching Multicultural Literature: A Workshop for the Middle Grades

For: middle school teachers

In eight one-hour videos, teachers from across the country model approaches that make multicultural literature meaningful for students in grades five to eight. As units unfold over time, students engage in critical discussions of race, class, and social justice that inspire action for change. The featured teachers, along with leading educators, provide reflection and commentary throughout the programs. Authors share information about their writings through interviews and classroom visits.

Teaching Reading K-2 Workshop

For: Grade K-2 teachers

Reading is intrinsic to everything children will learn in school. Creating a classroom community of eager and ready-to-read students presents you with a wealth of challenges and choices as teachers. This workshop will help you navigate the concerns of teaching beginning reading effectively.

The *Teaching Reading K-2 Workshop* introduces innovative research-based principles, teaching practices, and classroom activities designed to stimulate your teaching. Each of the eight workshop sessions examines a critical issue of early literacy. These sessions are designed to enhance the way you teach your K-2 students to read and write.

The eight video programs follow Professor Jeanne R. Paratore of Boston University and twelve K-2 teachers as they work through the major issues of teaching reading. Become a student yourself as you watch the lectures, classroom videos, and discussions, and complete a range of activities that you can use to improve your classroom reading instruction.

Teaching Reading 3-5 Workshop

For: Grade 3-5 teachers

Students learn the basic components of reading in the early elementary grades, but learning to read doesn't end there. In the intermediate grades, students learn to become fluent readers, they build their vocabulary and word knowledge, and learn to comprehend and retain more meaning from what they read.

The *Teaching Reading, 3-5* workshop is designed to give teachers the strategies they need to help all students become better readers and writers in the intermediate grades. Eight workshop sessions provide current research, questions for reflection, tips for new teachers, activities to enhance your teaching, and video segments from classrooms across the country.

Each workshop video features a leading literacy expert whose research and experience focus on a key element of teaching reading, from classroom organization and comprehension to teaching diverse learners, teaching English language learners, and assessment. Each video features classroom examples illustrating teaching strategies that were taken from actual classrooms across the country. The featured classrooms can also be viewed as whole 30-minute videos.

Write in the Middle: A Workshop for Middle School Teachers

For: Grade 6-8 teachers

In this eight-part workshop, classroom video and insightful discussion illustrate effective ways teachers can help their students become confident and proficient writers.

Middle school teachers from across the country share specific strategies they use with their students, and extensive video from each of their classrooms gives viewers an opportunity to see those strategies in action. The workshop explores several common themes that underlie effective writing instruction at the middle school level—providing engaging prompts, allowing student choice, modeling good writing, and using innovative approaches like multigenre writing. Some workshop videos feature aspects of the writing process, such as revision and pre-writing, while others illustrate successful strategies for teaching specific writing forms such as poetry or persuasive essays.

Mathematics

Assessment in Math and Science: What's the Point?

For: K-12 teachers

"Will this be on the test?" "Is this going to count?" How often do students ask these questions? This workshop examines current assessment issues and strategies in K-12 math and science classrooms. Through video segments of real classrooms interspersed with lively discussions of practicing teachers and content experts, see how teachers deal with common issues and discover ways to use assessment to improve teaching and learning.

Insights Into Algebra 1: Teaching for Learning

For: Grade 6-12 teachers

Insights Into Algebra 1: Teaching for Learning is an eight-part video, print, and Web-based professional development workshop for in-service teachers. Participants will explore strategies to improve the way they teach 16 topics found in most Algebra 1 programs. In each session, participants will view two half-hour videos and engage in activities designed to help them examine their teaching practice, implement what they are learning, share their experiences with other teachers, and reflect on their ongoing development.

Learning Math: Data Analysis, Statistics, and Probability

For: K-8 teachers

Data Analysis, Statistics, and Probability introduces statistics as a problem-solving process. In this course, you can build your skills through investigations of different ways to organize and represent data and describe and analyze variation in data. Through practical examples, you can come to understand the concepts of association between two variables, probability, random sampling, and estimation. The concluding case studies, divided into grade bands for K-2, 3-5, and 6-8 teachers, show you how to apply what you have learned in your own classroom.

Learning Math: Geometry

For: K-8 teachers

Geometry introduces geometric reasoning as a method for problem solving. Throughout the first nine sessions, you will explore the properties of geometric figures, make constructions using pencil and paper and dynamic software, practice using mathematical language to express ideas and justify your reasoning, and begin to explore the basis of formal mathematical proofs and solid geometry. The course material progresses from more visual, intuitive ways of solving problems to more formal explorations of geometric ideas, properties, and, finally, proofs. The 10th session explores ways to apply the concepts of geometry you've learned in K-8 classrooms.

Learning Math: Measurement

For: K-8 teachers

Measurement explores procedures for measuring and learning about standard units in the metric and customary systems, the relationships among units, and the approximate nature of measurement. You will also examine how measurement can illuminate mathematical concepts such as irrational numbers, properties of circles, and area and volume formulas, and discover how other mathematical concepts can inform measurement tasks such as indirect measurement. The 10th session explores ways to apply the concepts of measurement you've learned in K-8 classrooms.

Learning Math: Number and Operations

For: K-8 teachers

Number and Operations examines numerous topics that encompass the three main categories in the Number and Operations strand of *Principles and Standards of School Mathematics* (NCTM) -- understanding numbers, representations, relationships, and number systems; the meanings of operations and relationships among those operations; and reasonable estimation and fluent computation.

Learning Math: Patterns, Functions, and Algebra

For: K-8 teachers

"Patterns, Functions, and Algebra" explores the "big ideas" in algebraic thinking. The course consists of 10 two-and-a-half hour sessions that each include video programming and interactive Web activities. The 10th session explores ways to apply the algebraic concepts you've learned in K-8 classrooms. You should complete the sessions sequentially.

Mathematics: What's the Big Idea?

For: K-8 teachers

What do quilts have to do with palaces? When is a third more than a half? K-8 teachers of mathematics will contemplate these and other provocative questions in the workshop, which offers motivation and tools for teachers who want to explore new ways of teaching math. Using a variety of models, activities, and video clips, this workshop encourages participants to reflect upon their own practice and discuss ideas for innovation in teaching.

The Missing Link

For: Grade 5-8 math teachers

Recent studies show that once American students reach middle school, they begin to fall behind the students of many other countries in mathematical understanding and achievement. This video workshop familiarizes you with four concepts that have been identified by TIMSS (the Third International Mathematics and Science Study) as crucial to your students' future success. You'll come to better understand the content of these math topics through demonstration of instructional techniques that show you how to involve your students in their own learning. In the "Discovery" session of each topic-pair,

Master Teacher Jan Robinson (from the First in the World Consortium) leads the on-camera learner-teachers as they investigate a series of problem-based activities. The learner-teachers customize and expand upon these lessons in their own classrooms, and return with samples of their students' work. In the "In Practice" sessions, they report on their experiences, evaluate the student work, and develop new instructional and assessment techniques.

Private Universe Project in Mathematics

For: K-12 teachers

Research shows that children formulate extraordinarily interesting and complex mathematical ideas, even at very young ages. ***Private Universe Project in Mathematics*** demonstrates and honors the power and sophistication of these ideas, and explores how mathematics teaching can be structured to resonate with children's sophisticated thinking. When we encourage the invention of children's mathematical ideas, we turn them on to math, and their achievement improves!

Teaching Math, Grades K-2

For: Grade K-2 teachers

With the *Teaching Math, Grades K–2* online course, pre-service and in service teachers will gain a greater understanding of the National Council of Teachers of Mathematics Process Standards and find effective ways to apply the standards in the classroom and integrate them with content goals.

Teaching Math, Grades 3-5

For: Grade 3-5 teachers

With the *Teaching Math, Grades 3–5* online course, pre-service and in service teachers will gain a greater understanding of the National Council of Teachers of Mathematics Process Standards and find effective ways to apply the standards in the classroom and integrate them with content goals.

Teaching Math, Grades 6-8

For: Grade 6-8 teachers

With the *Teaching Math, Grades 6–8* online course, pre-service and in service teachers will gain a greater understanding of the National Council of Teachers of Mathematics Process Standards and find effective ways to apply the standards in the classroom and integrate them with content goals.

Teaching Math, Grades 9-12

For: Grade 9-12 teachers

With the *Teaching Math, Grades 9–12* online course, pre-service and in service teachers will gain a greater understanding of the National Council of Teachers of Mathematics Process Standards and find effective ways to apply the standards in the classroom and integrate them with content goals.

Science

Assessment in Math and Science: What's the Point?

For: K-12 math and science teachers

"Will this be on the test?" "Is this going to count?" How often do students ask these questions? This workshop examines current assessment issues and strategies in K-12 math and science classrooms. Through video segments of real classrooms interspersed with lively discussions of practicing teachers and content experts, see how teachers deal with common issues and discover ways to use assessment to improve teaching and learning.

Essential Science for Teachers: Earth and Space Science

For: K-6 teachers

Earth and Space Science provides in-class activities and homework explorations. Real-world examples, demonstrations, animations, still graphics, and interviews with scientists compose content segments that are intertwined with in-depth interviews with children that uncover their ideas about the topic at hand. Each program also features an elementary school teacher and his or her students exploring the topic using exemplary science curricula.

Essential Science for Teachers: Life Science

For: K-6 teachers

Life Science provides in-class activities and homework explorations. Real-world examples, demonstrations, animations, still graphics, and interviews with scientists compose content segments that are intertwined with in-depth interviews with children that uncover their ideas about the topic at hand. Each program also features an elementary school teacher and his or her students exploring the topic using exemplary science curricula.

Essential Science for Teachers: Physical Science

For: K-6 teachers

Physical Science provides in-class activities and homework explorations. Real-world examples, demonstrations, animations, still graphics, and interviews with scientists compose content segments that are intertwined with in-depth interviews with children that uncover their ideas about the topic at hand. Each program also features an elementary school teacher and his or her students exploring the topic using exemplary science curricula. Use the complete course for teacher education or professional development, or individual programs for content review.

Learning Science Through Inquiry

For: K-8 teachers

Inquiry-based teaching, central to the National Science Education Standards and the Benchmarks for Science Literacy, should not be an isolated occurrence, but a comprehensive and ongoing approach. However, many teachers hesitate to teach science through inquiry because they did not learn this way themselves, when they were students or during their preparation to become teachers. This workshop shows inquiry teaching and learning in action, with real teachers and students in real classrooms. Whether you have already experimented with inquiry teaching and want to enhance your practice, or are new to the approach and want to know how to make it work, this workshop will help you understand the process and how it benefits students, and give you strategies to use in your classroom.

Private Universe Project in Science

For: K-12 teachers

This innovative workshop for teachers explores the reasons why teaching science is so difficult and offers practical advice to help you teach more effectively. Each program focuses on one theme and one content area and uses specific examples to show how students' preconceived ideas can create critical barriers to learning. Education experts also review classroom strategies and results and recommend new ways to involve students and approach difficult topics.

Reactions in Chemistry

For: Grade 9-12 chemistry teachers

Reactions in Chemistry is an eight-part workshop for the professional development of high school chemistry and physical science teachers. The workshop blends chemistry content, history, and technological applications

with a range of classroom lessons to provide teachers with updated knowledge and new approaches to pedagogy. Teachers will see diverse classes doing hands-on lessons and labs and will hear teachers reflect on their own practices. The on-camera teachers meet in roundtable discussions about teaching strategies and the particular challenges of helping students connect the content to their own lives. The programs also present the work of industrial and forensic chemists and researchers.

Rediscovering Biology: Molecular to Global Perspectives

For: Grade 9-12 biology teachers

Great advances have been made in the field of biology in recent decades that will continue to have a major impact on our lives. ***Rediscovering Biology: Molecular to Global Perspectives*** explains these developments for teachers of high school biology to update their content knowledge and understanding. The multimedia course materials—video, online text, interactive Web activities, and course guide—will help new and veteran biology teachers become familiar with current research methods and tools that will lead to new discoveries in the coming decades. Thirteen half-hour video programs feature interviews with expert scientists involved in groundbreaking research, such as Eric Lander of the MIT Genomics Center and Rita Colwell, director of the National Science Foundation. Detailed animations provide a micro-level view of biological processes and techniques such as mass spectrometry and micro array analysis.

Science in Focus: Energy

For: K-6 teachers

Understanding the concept of energy is crucial to the comprehension of many ideas in physical science, Earth and space science, and life science. This workshop for elementary school teachers provides a solid foundation, enabling you to distinguish between the way "energy" is commonly understood and its meaning in science. Examine energy's role in motion, machines, food, the human body, and the universe as a whole. Learn how energy can be converted from one form to another and transferred over space and time. And explore the notion of "conservation of energy" — the idea that energy can neither be created nor destroyed. Return to the classroom with a new focus on the important concept of energy.

Science in Focus: Force and Motion

For: K-8 teachers

Explore science concepts in force and motion and come away with a deeper understanding that will help you engage your students in their own explorations. With science and education experts as your guides, learn more about gravity, friction, air resistance, magnetism, and tension through activities, discussions, and demonstrations. Extensive footage shot in real classrooms shows students learning and building on ideas as they explore the relationships among motion, force, size, mass, and speed. As you watch the students develop understanding through activities that connect science concepts to real-world phenomena, you will be asked to think about your own ideas on force and motion and compare them to what you observe.

Science in Focus: Shedding Light on Science

For: K-5 teachers

This workshop uses light as a theme to explore topics in physics, chemistry, biology, space science, and Earth science. Light is a common thread through many areas of science and a natural topic for interdisciplinary science study. Make connections to real world phenomena and explore the behavior of light, the transformation of energy, and the role of light in the weather, the seasons, and the production of food by plants.

The Science of Teaching Science

For: K-8 teachers

The Science of Teaching Science encourages K-8 teachers to explore ways to improve their teaching practices. Each program takes an in-depth look at a real classroom, so that teachers can focus on the issues involved in teaching science. Observing other teachers in unrehearsed situations will provide new and veteran teachers with the confidence to try new approaches to teaching.