

*Published November 2009*

Visit [www.pbs.org/teachers](http://www.pbs.org/teachers) and [www.pbslearningmedia.org](http://www.pbslearningmedia.org) for many more on-air and online resources!

## **STEM Resources from PBS**

**Science, Technology, Engineering and Math**

### **Science**

#### **PreK-5**

##### **Cyberchase**

<http://pbskids.org/cyberchase/>

This award-winning series features exciting adventures that teach core math and science concepts. The Super Cyberchase Science theme page highlights resources that promote math and science connections, and The Inventor's Workshop game introduces students to basic principles of physics and engineering.

##### **Curious George**

<http://pbskids.org/curiousgeorge/>

This Web site for the Curious George PBS television series offers early childhood educators the opportunity to extend the learning of the on-air episodes. Online video, educational games, a teacher's guide and activities reinforce early learning concepts in math, science and engineering.

##### **Fetch! With Ruff Ruffman**

<http://pbskids.org/fetch/>

This reality series for kids presents a variety of challenges that participants must solve collaboratively using their science knowhow. The site offers fun games and activities that test and expand users' science knowledge.

##### **Dinosaur Train**

<http://pbskids.org/dinosaurtrain>

Dinosaur Train embraces and celebrates the fascination that preschoolers have with both dinosaurs and trains, while encouraging basic scientific thinking skills as the audience learns about life science, natural history and paleontology.

##### **Sid the Science Kid**

<http://pbskids.org/sid/>

Sid the Science Kid is an educational animated television series using comedy to promote exploration, discovery and science readiness among preschoolers.

##### **DragonflyTV**

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This program provides children with opportunities to explore science and engineering to share the excitement of scientific discovery. The Web site includes a wealth of science-related games, activities, and streaming video.

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### **EekoWorld**

<http://pbskids.org/eekoworld/>

This site teaches children about environmental science and includes two immersive interactive games as well as lesson plans for grades K-4.

### **Kratts' Creatures**

<http://pbskids.org/krattscreatures/>

Students can go on a virtual creature adventure to explore wildlife and habitats in an immersive online "world."

### **The Cat in the Hat Knows a Lot About That! (preK-1st grade)**

<http://pbskids.org/catinthehat/>

Discover the joy and wonder of science with Cat and his friends as he takes preschoolers on a wild learning adventure! Dr. Seuss's *The Cat in the Hat* guides friends Sally and Nick – with a little help from the Fish, Thing 1 and Thing 2 – on fun-filled adventures where they make natural-science discoveries, from how bees make honey to why owls sleep during the day.

### **SciGirls**

<http://pbskids.org/scigirls>

*SciGirls* is out to change how tweens think about science, technology, engineering and math, or STEM! In each episode, join bright, curious *real* girls in putting STEM to work. Then check out the website to play games, watch episodes, share projects, and connect with other SciGirls in a totally safe social networking environment!

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### **ZOOM**

<http://pbskids.org/zoom>

This program and site promote activity-based learning about science and engineering. The site offers a wide variety of games and activities to enhance children's knowledge and enthusiasm about science.

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## **Math PreK-5**

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### **The Democracy Project (Grade 3-6)**

<http://pbskids.org/democracy/educators/index.html>

This site offers various lesson plans and math activities that relate to the American democratic process, including exercises about the electoral process, national economy, and mapping.

### **Mathline**

Grades K-2: [http://www.pbs.org/teachers/mathline/lessonplans/search\\_k-2.shtm](http://www.pbs.org/teachers/mathline/lessonplans/search_k-2.shtm)

Grades 3-5: [http://www.pbs.org/teachers/mathline/lessonplans/search\\_3-5.shtm](http://www.pbs.org/teachers/mathline/lessonplans/search_3-5.shtm)

Search the complete catalog on <http://www.pbs.org/teachers/math>  
Mathline provides over one hundred free standards-based lesson plans and video lessons. Teachers can search this comprehensive catalog by keyword, topic, or grade range.

### **Misunderstood Minds**

<http://www.pbs.org/wgbh/misunderstoodminds/math.html>

This PBS special and its Web site offer resources to help students, parents, and educators understand and overcome the challenges of learning disabilities. The mathematics section of this site provides exercises and teaching strategies to help students with specifically math-related disabilities.

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### **PBS Parents Guide to Early Math (Grades PreK-2)**

<http://www.pbs.org/parents/earlymath>

This bilingual Web site features math teaching tips, fun learning activities, recommended books, and a child development trackers with early math milestones.

### **ZOOM (Grades 3-5)**

<http://pbskids.org/zoom/activities/sci>

This program and site promote activity-based learning about science and engineering and include fun math-related exercises like detecting patterns, taking measurements, and using spatial logic.

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## **Science**

### **Grades**

**6-12**

### **Nature**

<http://www.pbs.org/wnet/nature/>

This site contains a wide variety of teacher's guides, lesson plans, interactive activities, video clips and more to help teachers and students explore the wonders of the natural world.

### **NOVA**

<http://www.pbs.org/wgbh/nova/>

NOVA is the highest rated science series on television and the most watched documentary series on public television. It is also one of television's most acclaimed series, having won every major television award, most of them many times over. The Web site offers an extensive collection of teacher's guides with viewing ideas and classroom activities, interactives and related resources. Teachers can also sign up to receive a weekly e-mail reminding you of upcoming NOVA programs and related NOVA Web resources.

### **Secrets of the Dead**

<http://www.pbs.org/wnet/secrets/>

This program and site introduce students to topics in chemistry, forensics, physical sciences and life sciences through the investigation of age-old mysteries. Many of the lesson plans are enhanced with streaming video and interactives.

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### **Jean-Michel Cousteau: Ocean Adventures**

<http://www.pbs.org/kqed/oceanadventures/educators/>

Designed primarily for middle school educators and students, Ocean Adventures resources are appropriate for use in both formal and informal educational settings. They are aligned with National Science Content Standards and Ocean Literacy Essential Principles and Fundamental Concepts.

The themes of Adaptations, Ecosystems and Human Impact are interwoven throughout the Ocean Adventures episodes and educational materials. Use our engaging multimedia resources to teach your students these important concepts!

### ***Saving the Bay***

Explore San Francisco Bay's history--from the Ice Age to the restoration efforts of today--and investigate the competing needs of this fragile ecosystem. In addition to the 4-part series, the website features short educational videos that expand on the series themes and are accompanied by lesson plans and viewing guides.

### **QUEST**

<http://science.kqed.org/quest/>

Inspire students with stories that demonstrate science in the real world, from energy-saving windows to the science of cheese. KQED's award-winning multimedia science and environment series *QUEST* aims to raise science literacy and inspire audiences to discover and explore science and environment issues for themselves. The series focuses on nine content areas: astronomy, biology, chemistry, climate, engineering, environment, geology, health, and physics.

### **DragonflyTV**

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## Technology

### Grades

6-12

#### NOVA scienceNOW

<http://www.pbs.org/wgbh/nova/sciencenow/>

For this series, the producers of NOVA have teamed up with astrophysicist Neil deGrasse Tyson to cover the timeliest developments and intriguing personalities in science and technology today. Each episode presents multiple stories in a magazine format. On the Web, you'll find streaming video segments and teacher's guides with program overviews, viewing ideas, and classroom activities.

#### Wired Science

<http://www.pbs.org/kcet/wiredscience/education/>

This program offers teachers and students a chance to delve into cutting-edge topics in science and technology. The Web site suggestions from teachers for using clips from the show in the classroom, profiles of exceptional science teachers and students, and a Careers in Science section.

#### QUEST

<http://science.kqed.org/quest/>

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## **Engineering Grades 6-12**

### **Design Squad**

<http://pbskids.org/designsquad/>

This program, designed specifically for teens, use a reality competition format to build excitement about engineering. The Web site includes hands-on activity ideas, an educator's guide, interactives and video.

### **E2**

<http://www.pbs.org/e2/index.html>

The series explores attainable solutions to pressing environmental and social challenges, and its stories are culled from a variety of fields including design, energy, transport, water, food and urban development.

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## **Math Grades 6-12**

### **First Measured Century (Grades 6-12)**

<http://www.pbs.org/fmc>

This three-hour program tells the history of America by the numbers through the eyes of those that did the measuring and interpreting, from George Gallup to Alfred Kinsey. Its Web site provides lessons and activities that integrate math education with social science data, concepts of measurement, and the social consequences of measurement.

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### **Ken Burns American Stories: Baseball (Grades 6-8)**

<http://www.pbs.org/kenburns/baseball/teachers>

This program uses the history of baseball as a powerful metaphor for the struggles and triumphs of the past 150 years of American history. Its Web site includes several themed lesson plans that energize lessons in geometry and economics with the fun and excitement of baseball.

### **Lewis and Clark (Grades 6-8)**

[http://www.pbs.org/lewisandclark/class/idx\\_les.html](http://www.pbs.org/lewisandclark/class/idx_les.html)

This four-hour television documentary chronicles the dangers and discoveries of Lewis and Clark's expedition across the West. Several related lesson plans available on the Web site use the Lewis and Clark journey to frame crucial mathematics concepts like geographic mapping, statistics, estimation, and data analysis.

### **Mathline**

**Grade 6-8:** [http://www.pbs.org/teachers/mathline/lessonplans/search\\_6-8.shtm](http://www.pbs.org/teachers/mathline/lessonplans/search_6-8.shtm)

**Grade 9-12:** [http://www.pbs.org/teachers/mathline/lessonplans/search\\_9-12.shtm](http://www.pbs.org/teachers/mathline/lessonplans/search_9-12.shtm)

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Mathline provides over one hundred free standards-based lesson plans and video lessons. Teachers can search this comprehensive catalog by keyword, topic, or grade range.

### **NewsHour Extra: Math and Economics (Grades 9-12)**

<http://www.pbs.org/newshour/extra/students/math>

This site contains news reports written specifically for students based on stories from The NewsHour with Jim Lehrer, the nightly news broadcast on PBS. The teachers' resources section offers lesson plans, discussion questions, activities, and news stories to help teach math and economics in the context of current events.

### **NOVA (Grades 6-12)**

<http://www.pbs.org/wgbh/nova>

The "Math and Physics" archive on the Web site of this award-winning series of science documentaries provides abundant teaching resources, including lesson plans, activities, and online videos on such diverse topics as Einstein's Theory of Relativity, decoding wartime encryptions, and Wall Street economics. Teachers can also sign up to receive an e-newsletter from NOVA with information about upcoming on-air and online resources.

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### **Scientific American Frontiers (Grades 5-12)**

<http://www.pbs.org/saf/educators.htm>

This program hosted by Alan Alda explores the latest trends in science, medicine, technology, and the environment. Each program is accompanied by an online, printable teaching guide with activity ideas and quizzes. To browse the math-focused lesson plans, use the Advanced Search available on the PBS Teachers Web site. Enter the keywords “Scientific American Frontiers” and narrow your search to the subject “Math” and the grade level of your choice.

### **The Ascent of Money**

<http://www.pbs.org/wnet/ascentofmoney/lessons/>

This groundbreaking four-part series examines the creation of the economic system by taking viewers on a global trek through the history of money. Lesson plans explore the role of banks, the concept of insurance, the basics of the stock market, and entrepreneurship.

### **Your Life, Your Money**

<http://www.pbs.org/wnet/ascentofmoney/lessons/>

Find resources, activities and lesson plans to help young adults overcome financial challenges and learn money basics. Our Facilitator's Guide provides meaningful activities and the Young Money Magazine: Special Edition Guide for Your Life, Your Money features stories and helpful tips written for young adults. Whether you're a teacher, facilitator, or parent, you will find useful ways to get someone's financial life on track.