

Math/Business- Distance Learning Programs

Aquatic Research Interactive

1. Diving into Geometry

Students measure, record, analyze and interpret geometric shapes and sizes in both two and three dimensions. Designed for grades 4 - 10.

2. Diving into Physics

Students learn how the ABC's of Physics and Chemistry (Archimedes' Principle, Boyle's Law and Charles' Law) work and are applied not only on land but also underwater. Designed for grades 4 - 10.

Challenger Learning Center

1. Operation Montserrat

Operation Montserrat is a two-hour live event that connects a classroom of students any where in the world to a flight director at Challenger Mission Control. Students take on the role of emergency response team scientists working together to help the Islanders of Montserrat as they encounter a natural disaster.

The program provides teachers with professional development, a web-based curriculum and embedded assessment. The students are challenged to apply their math and science knowledge to a real-life event, while using teamwork, problem solving and critical thinking skills.

Cleveland Institute of Music

1. Math and Music

Math and Music is an exciting example of project-based learning. In a series of two videoconferences, students become the producers of a major musical event. Participants must utilize problem-solving skills relating to fractions, decimals, proportions, algebra and spatial geometry.

Cleveland Museum of Art

1. Math Connections in Art: Gridding

Students will be introduced to the work of American painter and printmaker Chuck Close and will also learn to apply math concepts and skills used by the artist to transfer photographic images to another working surface. Beginning with photos of themselves, students will measure, grid and reproduce their portrait into a painting or pencil rendering which may be finished later at home or in the classroom. Concepts such as ratio, percent, and area are reinforced. Designed for grades 7 - 12.

Coca Cola Space Science Center

1. The CCSSC is more than willing to design a video-conference specifically for your class. Choose from topics in the fields of space, astronomy, science, and math.

Hooks Discovery & Learning Center

1. Truth in Advertising

Is there truth in advertising? This is a question we will ponder and seek to answer. Much of today's advertising is geared toward children. During Truth in Advertising, children will learn how to be educated consumers. We will explore actual 19th, 20th and 21st century advertising. What was the advertiser trying to say? Does the product really do what it claims? Was or is the product a scientific breakthrough? Should we believe everything we see or hear? Students will engage in amusing activities that will introduce them to the advertising world and its strategies.

Indianapolis Museum of Art

1. What's the Problem? Math and Art

Mathematicians, art historians and your students have something in common. They all attempt to make sense of the world around them. Explore the connections that exist between thinking mathematically and artistically as students solve a narrative problem related to both disciplines.

Liberty Science Center

1. Create a Fractional Mural

Create a Fractional Mural

E-Trails invite students to explore LCS's exhibits in depth, gathering information to complete a fun design challenge. Teacher packet includes a pre-visit activity, suggestions for completing the challenge and extensions for further study. Have them write about it, draw it, or build it. You decide. They can even present their completed challenges to LSC.

Shapes, colors, lines, materials and textures, all these elements are used in many art forms. Even various mathematical concepts are used in works of art. One such concept is fractions. Ancient civilizations used the concept of the golden rectangle in their buildings; the height and width of buildings had a specific fractional ratio which made them visually appealing to the observer. What is a fraction? A fraction is a part of something. A fraction doesn't stand alone. We need to know the whole to understand its parts. But what if we took the fractions of many different objects and combined them? We'd create yet another object. What would it look like? Your Challenge is to collect interesting fractions and create a mural. Arrange these fractions to produce something new.

2. Create a Geometric Pattern

E-Trails invite students to explore LCS's exhibits in depth, gathering information to complete a fun design challenge. Teacher packet includes a pre-visit activity, suggestions for completing the challenge and extensions for further study. Have them write about it, draw it, or build it. You decide. They can even present their completed challenges to LSC.

Take a careful look into any garden and you will find an enormous number of regular and irregular patterns. Different types of leaves, stems and roots all have unique and unusual patterns. No two snowflakes are alike, so they say. What makes each one different? How do the patterns form? Look at the architecture around you. Are patterns integrated in buildings or bridges in your neighborhood? What makes one pattern different from another? What about fashion? Examine the material of your clothing. Is there a pattern in the design? How about in the fabric itself? Your Challenge is to design a geometric pattern.

3. Geometry in Nature

E-Connections are science explorations based on a LSC exhibit area.

Objectives:

- To explore different types of symmetry.
- To investigate the basic concepts of fractal geometry.
- To discover and identify the geometry in nature.

Exhibit Description:

LSC's Stream Table is an interactive exhibit that enables guests to experiment with the effects of erosion. Guests manipulate water and a soil substitute, Plastigrit (recycled lunch trays), to model river systems and observe the patterns that emerge.

Louisville Science Center

1. Meet the Experts: Exploring Math and Science Career

Interview experts about career opportunities in the fields of math and science. Programs take place from noon to 1:00 PM EST.

Milwaukee Public Museum

1. Ancient Egypt: Proportions, Symmetry and Size

Mix math, geometry and history with ancient Egyptian intrigue! Investigate how ancient Egyptian art, for more than 3,500 years, was governed by strict mathematical rules called the Canon of Proportions that determined how figures could be drawn, and explore the tomb that unlocked the mysteries of these fascinating laws. Designed for grades K - adult.

Museum of Television & Radio

1. The Fine Art of Persuasion: Television & Advertising

What is advertising and what are its methods? Through careful analysis, students discover how advertising has developed certain tools and techniques that capture viewer attention to promote a product, a person, or an idea. Designed for grades 4 - 12. Supplemental website.

NASA Glenn

1. The World of Robots

The presentation describes different types of robots and includes four working samples. The fields discussed are humanoid robots, industrial robots, telerobotics, and autonomous robots. The tele-robot is driven by radio control and has a camera that transmits a video picture to any TV. This robot has a pair of electric squirt guns, which are demonstrated. The autonomous robot uses infrared light to detect and avoid obstacles while walking. There is also a small robot that the audience can move by clapping their hands. The presentation may include a short video on robot competitions. Available for grades K - 12.

2. Mathematics: Science of Numbers

At NASA we are required to solve theoretical problems and to interpret the results. The solving of problems involves TECHNIQUE. The INTERPRETATION of results involves CONCEPT, a type of understanding similar to that required for interpreting a language. This lesson focuses on concept and interpretation. It begins with comments on the nature of mathematics and the reasons why interpreting results is important in research and science. Practice in interpretation of results includes understanding the concept of the magnitude of light speed. Mathematics is presented as a science of numbers, a body of knowledge that represents 1) what we know about numbers and the operations between them; 2) the various properties of numbers; 3) the inherent means for adding new knowledge; and 4) a system of concepts that allows for interpretation. We learn TECHNIQUE in school. Technique is the "know-how" for writing and solving equations. Concept and interpretation are also taught, but take much longer to develop in a person's mind. Concept is necessary for interpretation, and interpretation is necessary for putting mathematics to the best possible use. When we use mathematics in research and design, interpreting our results is vital. Solving an equation but not being able to interpret the result is like writing a grammatically correct statement without knowing what you mean! Available for grades 9 - 12.

NASA Live

1. Career Choices Apply Here

Growing up is not always easy neither is choosing a career. But, it is never too early to start thinking and planning just what you'll become. To help you unlock your potential, discover the science, mathematics, engineering, and technology all around you. In the process, educators and students will learn what it takes to work at NASA as well as get a forecast of tomorrow's job market. This is an opportunity for educators and students to learn about the importance of earning good grades, applying for internships, and choosing the right courses. Since jobs of the past are not the only jobs of the future, NASA may just be the place for you.

2. Model Making: Yes, It Takes Math

Since 1915, the National Aeronautics and Space Administration (NASA) or the National Advisory Committee for Aeronautics (NACA) as it was formerly known, has been a leader in the evolution of aircraft design. NASA has made significant contributions to early aeronautics that includes the development of the X-1, the first high speed research airplane to break the sound barrier, and the North American's x-15, the first winged aircraft to fly into space. Many of these advancements began at the NASA Langley Research Center in Hampton, VA, and continue here today. Recognized as a world-class research center performing innovative, high-payoff aerospace and scientific research beyond the risk limit or capabilities of industry, major efforts are underway in aerospace research to improve our air transportation system and to develop revolutionary concepts for future aerospace vehicles. As NASA Langley researchers and engineers design and build these marvels of the sky, they are using common mathematical principles taught in the classroom. Explore how NASA Langley Research Center's engineers use ratios and proportions everyday as they design and build the next generation of passenger and airfreight transportation.

3. Networking: The Art of Communication

Networking systems have been used for years, even centuries. From formal introductions to casual checkout line conversations, networking can be used to exchange ideas or services, and it can also be the key to career development. This presentation focuses on various ways to identify your network and enhance your networking techniques to ensure career success.

4. International Business Etiquette: What You Say Matters

Globalization is imminent, and many corporations are not prepared to deal with diverse cultures. NASA Langley's diverse environment and partnerships with foreign corporations have identified requirements for training and diplomacy awareness. This presentation is designed to (1) teach students the ways and means to understand and successfully communicate across cultures, (2) eliminate stereotypes, and (3) value diversity.

National Baseball Hall of Fame and Museum

1. Math: Batter Up!

Education: Grade(s): 4, 5, 6, 7, 8 - might be able to adapt to high school

This thematic unit teaches fundamental concepts that connect the calculator and the clubhouse while learning, using and interpreting the statistics of famous

National Science Center

1. Gallery Exhibit Programs

"Gallery Exhibit Program: Math, Motion, and Momentum"

This program provides your students with an opportunity to sit in their classroom and still have a front row seat to demonstrations on nine of our Math, Motion, and Momentum exhibits. The program is broadcast from our exhibit floor and there is normally time at each exhibit for student questions. In this particular gallery exhibit program exhibits are Pythagorean Theorem, Motorcycle, Newton's Cradle, Maglev Car, Math Probability, Coupled Pendulums Swing, Angular Momentum, Gravity Well, and Air Chair. There is also a demonstration of the Air Chair applet from our website as well as a brief introduction to other NSC outreach and resident education programs.

Newark Museum

1. The Bank is Open: An Exploration of Economics; From Barter, to Coins & Paper Money, to Digital Dollars

Investigate the financial world through the new exhibition, Once Upon a Dime: The World of Money. Students will explore the history of money from barter to cashless. They will understand the difficulty of barter and convenience of coins as they track the evolution of money and how it is saved, spent, and invested

Rutgers-Camden Center for the Arts

1. New Math: Contemporary Art and the Mathematical Instinct

This exhibition and RCCA's other MathFest! 2004 education programs provide a unique approach to teaching mathematical concepts through the arts. The exhibition brings together sixty artworks that are based on, refer to, or illustrate mathematical principles. Concepts of visual art and mathematics are fused in art works that include multi-media installation sculpture and computer-generated art as well as more traditional forms of painting, graphic art, and sculpture. Designed for grades K - 12. Offered February 2 through March 27, 2004.

2. Mathematical Visions - primary level

Various works of visual art are effectively used to illustrate a range of mathematical concepts. Geometry, grids, patterns, symmetry, scale and proportion are clearly demonstrated in a refreshing way to the students. Designed for grades 2 - 6. Offered year round.

3. Mathematical Visions - secondary level

Various works of visual art are effectively used to illustrate mathematical concepts at a more advanced level than that of the primary level class. Geometry, grids, patterns, symmetry, scale, proportion, golden ratio and the Fibonacci sequence are investigated through the artworks. Designed for grades 7 - 12. Offered year round.

Vanderbilt Virtual University

WVIA

1. Business

This presentation is open for all business and accounting students in grades 7-12. Our business staff will give your students the insight on accounts payable, receivable, payroll, audits and direct deposits. When should you start saving for retirement? Talk to the business staff and learn about tax deductions and annuities. The staff is also available to speak about budgeting and end of the month reports.

2. Corporate Communications

If your students want to join the world of journalism, this presentation is a must! Our Corporate Communications department will cover public relations, press releases, and public information. This session also focuses on advertising, magazine editing/publishing and design for students involved with your school newspaper. Do your students need to design flyers for school events? We will show you the fastest, easiest and most effective ways to create them. Open to grades 6 - 12.

3. Engineering

Learn all about technology for our engineers at WVIA. This session will cover all technical operations including digital media, electro mechanical engineering, hydraulics, and fluidics. The engineering staff explains steps students need to gain more knowledge in the rapidly changing world of technology, and gives students the opportunity to learn what is expected of them when they enter this field. Open to grades 7 - 12.

4. Development

Our development department professionals will take students through step-by-step general marketing skills and telemarketing. This is a perfect session for school clubs, as our special events coordinators can assist students with ideas and plans for special event fundraisers. The development team will also cover budget planning and creative fundraising.

5. Management Operations

This session is perfect for students in grades 8 - 12 who are in an entrepreneurship class. Learn management skills, policy making, and how to run a television and radio station. History and Social Studies classes also benefit since policy making and lobbying are also covered.