



# MathScience Innovation Center

*Imagine. Create. Lead.*

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## **Over 3200 Students Experience Math & Science Virtually**

Through the *Elluminate Live* videoconferencing systems, middle and senior high students explored a variety of math and science concepts. With the *Elluminate Live* system, students viewed the instructors and visuals on a large computer screen in their classroom and interacted via microphones, text, writing, and drawing tools.

On *Pi Day*, sixth and seventh grade students used cookies and other circular objects to learn why the mathematical expression Pi equals 3.14. In *Cube-N-Ometry*, eighth graders constructed 3-D buildings from 2-D drawings and derived mathematical procedures for determining the area and volume of the structures. Using their knowledge of algebra and scatterplots, algebra students deduced the bandit from a paint smear of the upper arm bone left at the crime scene. MSiC virtual educators designing and teaching these lessons included Gayle Bynum, Andrew Derer, Brian Domroes, Echol Marshall, Carrie Persing, Rebecca Pittman, and Kristine Vester.

In the lesson, *Oceans in Motion*, sixth graders used hands-on experiments and satellite images to determine the causes of deep and surface ocean currents. Chemistry students calculated the amount of oxygen produced during a chemical reaction, and learned why this skill was critical to saving the astronauts on *Apollo 13*. Through a special pilot lesson, earth science students rocked across Virginia to learn about the geologic provinces and the mineral resources found within each. MSiC virtual educators included Cherri Kelleher, Echol Marshall, Rebecca Pittman, Joyce Watson and Lorin Wharton.

On surveys, teachers communicated that lessons were well aligned with Virginia's *Standards of Learning*, that the mix of hands-on activities and technology engaged the students, and that students were excited about the use of technology, especially the web cam and chat features. General recommendations for improvement related to the need to lengthen the lessons, to have better coordination with schools' bell schedules, and to increase the number of students who could interact via the computer.

Participating school divisions and schools included:

**Catching the Armed Bandit.** Chesterfield - Bailey Bridge Middle School (3), LC Byrd High School (4); Powhatan – Powhatan High School (1).

**Cube-N-Ometry.** Chesterfield – Manchester Middle School (5), Providence Middle School (3), Robious Middle School (3); Hanover – Liberty Middle School (1); Henrico – Brookland Middle School, Godwin High School, Hungary Creek Middle School.

**Great Race.** Colonial Heights – Colonial Heights Middle School (3).

**Oceans in Motion – Waves, Currents and Tides.** Chesterfield – Bailey Bridge Middle School (1), Hanover – Oak Knoll Middle School (3); Henrico – Tuckahoe Middle School (4); Richmond – Binford Middle School (1).

**Pi Day.** Chesterfield – Chester Middle School (2), Falling Creek Middle School (1), and Tomahawk Creek Middle School (2); Hanover – Stonewall Jackson Middle Schools (5); Petersburg – Peabody Middle School (5); Powhatan – Pocahontas Middle School (4).

**Rocking Across Virginia.** Richmond – Martin Luther King Middle School (1).

**Stoichiometry** – Chesterfield – Cosby High Schools; Hanover – Patrick Henry High School.

The Math Science Innovation Center is a 42-year-old organization dedicated to futuristic math and science education for K-12 teachers and students. Its vision for 2015 focuses on implementing new programs in fractal geometry, engineering, nanotechnology, environmental modeling, and distance learning. The MathScience Innovation Center is an educational consortium comprised of eight school divisions: Chesterfield, Colonial Heights, Hanover, Henrico, King William, Petersburg, Powhatan, and Richmond. Other divisions also participate through abbreviated memberships: Charles City, Hopewell, Prince George, and the Steward School.