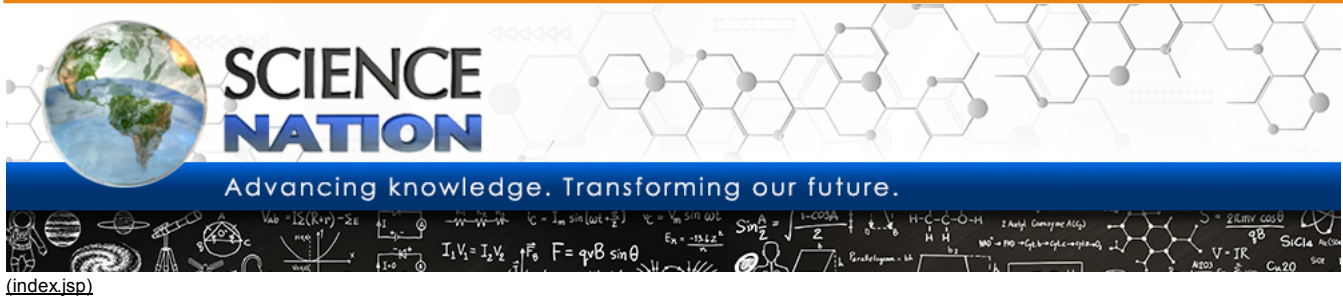




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May 11, 2015

Connect4Learning jumpstarts science and math for preschoolers

Preschoolers engaged, teachers enthusiastic about moving math and science to the head of the class

The 4-year-olds at All Souls School in Englewood, Colo., are learning their shapes and numbers within a science lesson about sea creatures. It's a new approach to early childhood education that focuses more attention on science and math while incorporating important literacy connections along the way.

With support from the National Science Foundation (NSF), University of Denver education professors Julie Sarama and Douglas Clements are part of the team that developed the research-based Connect4Learning (C4L), which blends academics, social and emotional development, and play for the pre-K set, with high expectations for learning for teachers and kids alike.

Sarama and Clements analyze videos of Connect4Learning in action to research the efficacy of this approach and to find even better ways to connect with children of all backgrounds, particularly those in struggling schools and difficult home circumstances.

The C4L author team includes experts in all four domains. Nell K. Duke is a professor of literacy, language, and culture and a faculty affiliate in the combined program in education and psychology at the University of Michigan. She studies early literacy development, particularly among children living in poverty. Kimberly Brenneman is Program Officer for Education at the Heising-Simons Foundation. Prior to joining the Foundation, Kimberly was research faculty at Rutgers University's National Institute for Early Education Research where she led projects focused on curricular and instructional practices to foster science, technology, engineering, and mathematics learning for young children in school and home settings. Mary Louise Hemmeter

is a professor in the Department of Special Education at Peabody College of Vanderbilt University and is a co-faculty director of the Susan Gray School for Children. She studies professional development, strategies for preventing and addressing challenging behavior, and instructional approaches for young children with disabilities.

The research in this episode was supported by NSF award #1313718 (/awardsearch/showAward?AWD_ID=1313718&HistoricalAwards=false), Early Childhood Education in the Context of Mathematics, Science and Literacy.

[Miles O'Brien \(producers/obrien.jsp\)](/producers/obrien.jsp), Science Nation Correspondent

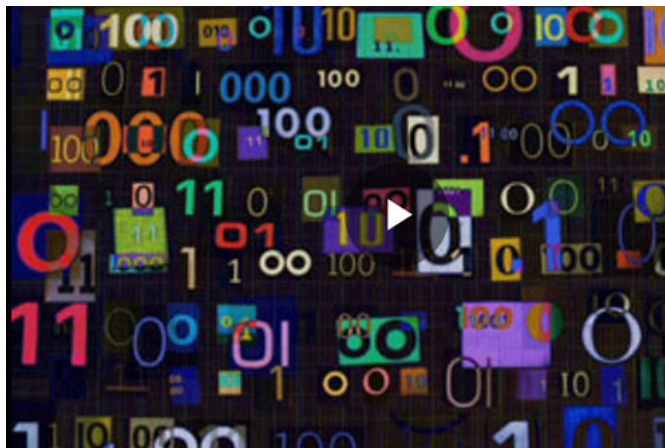
[Marsha Walton \(/news/special_reports/science_nation/producers/walton.jsp\)](/news/special_reports/science_nation/producers/walton.jsp), Science Nation Producer

Related Multimedia



Harvard University professors Susan Carey and Deborah Zaitchik are leading a project that explores how children develop understanding of abstract concepts over time, specifically in mathematics and in science--biology, psychology and physics. Their research could prove transformative to the practice of education. The project aims to determine how children develop theoretical concepts of science and math and how the learning process might be modified to increase children's level of understanding. Find out more in this [discovery \(/discoveries/disc_summ.jsp?cntn_id=132270\)](/discoveries/disc_summ.jsp?cntn_id=132270).

Credit: Thinkstock



Although it may be culturally acceptable for Americans to say that they just aren't math people, it's really not true, and it can encourage a feeling of powerlessness. Instead, mathematics education researcher Jere Confrey, at North Carolina State University suggests people can be taught mathematics in a way that takes advantage of the different aspects and representations of math and helps them find their way in to understanding the subject. Find out more in this [discovery \(/discoveries/disc_summ.jsp?cntn_id=134453\)](/discoveries/disc_summ.jsp?cntn_id=134453).

Credit: Jere Confrey, North Carolina State University

Related Links

[Research on Learning in Formal and Informal Settings \(DRL\) \(/ehr/drl/about.jsp\)](/ehr/drl/about.jsp)

The Division of Research on Learning in Formal and Informal Settings in NSF's Directorate for Education and Human Resources invests in projects to improve the effectiveness of science, technology, engineering and mathematics (STEM) learning for people of all ages. Its mission includes promoting innovative research, development, and evaluation of learning and teaching across all STEM disciplines by advancing cutting-edge knowledge and practices in both formal and informal learning settings.

[Students practice hands-on STEM activities to define problems and determine solutions \(/discoveries/disc_summ.jsp?cntn_id=129524\)](/discoveries/disc_summ.jsp?cntn_id=129524)

In Georgia, young students often feel disconnected from the real world when studying math and science. But a new initiative just outside Atlanta--a partnership between the Georgia Institute of Technology and the Griffin-Spalding County School system--is trying to change this. The NSF project, known as AMP-IT-UP, is using a novel approach to encourage student creativity, and make these important courses come alive. The new courses integrate basic science and math content with hands-on engineering design and construction.



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National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749