

Raytheon's MathMovesU Program - Questions and Answers

Q: What is MathMovesU?

A: Raytheon's MathMovesU program is an innovative initiative designed to engage school students in math by illustrating the connection between math, their passions and interests and "cool" careers. The MathMovesU program connects with students on their terms, using their mediums and engaging them in fun contests, live events and interactive web content. The program website is MathMovesU.com

Q: How does MathMovesU work?

A: Leveraging the passion and engagement of its employees, Raytheon drives interactive math and science initiatives to coach, fund, and engage students who have the promise to be future engineers. The focal point of the program is the MathMovesU.com website, targeted towards middle school students. The goal of the website is to stimulate interest in everyday math through compelling and relevant interactive content and a game-like experience. Students who visit MathMovesU.com can participate in math-related contests, win a host of cool prizes, and apply for individual scholarships and grants for their schools.

Q: What is the goal of MathMovesU?

A: The goal of MathMovesU is to help remedy the current math education crisis in the United States. Raytheon is helping to make math cool for students by illustrating the connection between math and "cool" careers. By improving math's image, MathMovesU seeks to keep middle school students interested in educational tracks that will one day lead to careers in science and engineering.

Q: What is the "math education crisis" in America?

A: The U.S. ranks 24th out of 29 countries in math literacy.¹ Only 32 percent of American eighth-graders are at or above a proficient level in math.² Looking at U.S. student performance on international assessments, the average student begins on top of the world in mathematics in elementary school, slips to near the middle of the pack by eighth grade, and sinks to near the bottom by 12th grade.³ Middle school, therefore, is clearly when both interest and achievement decline.

Q: I understand surveys were conducted in conjunction with this program. What was their purpose?

A:

- In 2005, Raytheon engaged KRC Research to survey more than 1,000 students between the ages of 11 and 13. The company wanted to understand the middle school mindset about math, including why students lose interest in the subject during this time.
- In 2007, Raytheon again worked with KRC Research (this time 354 parents and 356 "tweens" were surveyed). The purpose of the second survey was to discover what happens to kids' math skills during summer vacation.
- In 2008, Raytheon commissioned Zogby International to survey 425 sixth-to-eighth graders again about their interest in and attitudes toward math.
- In 2009, Raytheon commissioned a new study, surveying more than 1,000 students between the ages of 10 and 15 to uncover the attitudes and behaviors of today's U.S. middle school towards math.

¹International Outcomes of Learning in Mathematics Literacy and Problem Solving: PISA 2003 Results From the U.S. Perspective (NCES 2005-003). U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

²National Assessment of Educational Progress, 2007 Mathematics Assessment (NCES 2007-494). U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

³A Commitment to America's Future: Responding to the Crisis in Mathematics and Science Education (Main Report, 2005). Business-Higher Education Forum.

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Q: What did the surveys find?

A: The survey in 2005 found that most American middle school students would rather clean their rooms, eat their vegetables, take out the garbage or go to the dentist than sit down with their math homework. Yet these same sixth, seventh and eighth graders said they wanted to do better in math (67%) and that doing well in math was important to them (94%). The majority of middle school students reported they would be more interested in math if they learned about celebrities (70%) or were shown how people in music and sport use math in their jobs (81%).

The survey in 2007 found that 76% of students said math skills would be "very" or "somewhat" important to their jobs when they finished school. The research also showed that half of the "tweens" believe they should study math at least once a week during the summer months. When given the choice, 54 percent of middle-schoolers said they would rather play Internet math contests to win prizes as a way to keep their math skills sharp over the summer. Other less-popular choices were playing educational family games, spending time with textbooks, private tutoring, and attending math camp or summer school.

The survey in 2008 found that attitudes about math are improving: 72% of middle school students said "they like math," an increase from 66% in a similar survey conducted for Raytheon in 2005. However, most students have no idea what engineering is: 70% of middle school students say they would like jobs in the engineering field, but of those students, only 38% realize it. Despite their interest in design careers in video game development, amusement park rides or Mars exploration, most students don't recognize that they need to study engineering to achieve their dream jobs. 66% of students said that active learning like playing games and hands-on interaction with real-life examples would make math more fun and interesting.

The survey in 2009 found that 72% of U.S. middle school students spend more than three hours each day outside of school in front of a TV, mobile phone or computer screen rather than doing homework or other academic-related activities. By contrast, just 10% of students spend the same amount of time on their homework each day with 67% spending less than one hour on their math homework. The survey also reveals that while most middle school students believe that math is important to their futures, they fail to understand the connection between the subject and potential careers. The problem is especially dire for girls who are overwhelmingly attracted to careers that don't rely heavily on math skills.

Q: Why is improving math education important?

A: According to the U.S. Department of Labor, the demand for new products and new technology is expected to continue to drive growth in computer and engineering occupations.

Q: What is Raytheon Company

A: Raytheon Company is a technology leader specializing in defense, homeland security and other government markets throughout the world. With a history of innovation spanning 85 years, Raytheon provides state-of-the-art electronics, mission systems integration and other capabilities in the areas of sensing; effects; and command, control, communications and intelligence systems. Raytheon also offers a broad range of mission support services.

Q: Why does Raytheon sponsor MathMovesU?

A: Raytheon believes tomorrow's engineers and technologists need to be excited by and interested in math today. With science and technology a vital driver of the global economy, Raytheon's math and science education program not only encourages and supports countless students, but also supports our nation's ongoing role as an economic leader. MathMovesU is an investment in children's dreams, an investment in the talent pipeline and an investment in the economic prosperity of our country.