



Dance your way through

MATH at AISU

Middle School girls are learning math through dance at the American International School of Utah (AISU).

The SHINE Program, originally developed at MIT, is a 10-day intensive course for middle school girls to study math concepts through kinesthetic learning and formal dance training. By connecting the different ways in which students learn, SHINE enables a more effective understanding and retention of information.

“At AISU we have a strong dance program which engages many of our middle and high school girls,” said Katherine Hunter, a middle school teacher at AISU. “However, looking more deeply we found that these same students struggle with self confidence and success in their math courses. We strive to change this by offering the SHINE program for girls.”

AISU just completed their first series of SHINE with 28 middle school girls and six high school mentors helping facilitate the program.

Each day began with team building exercises, dance and something to keep the girls excited, along with questions that engaged their interest in math.

Hunter said that on the first day, many of the students wrote math is “challenging” and “hard.” On day 10—the last day of the program—many of the girls still wrote math is “challenging” but often they included words like “fun” and “interesting.”

Later in the day, and in groups of five, the middle school girls were assigned a high school mentor who would help them work through challenging problems from Common CORE and even the GRE.

For example, the girls created a simple dance of three twirls followed by a jump and then wrote down $3x + y$, where $x = \text{twirl}$, $y = \text{jump}$. Through dancing, girls realize that $3(x+y) = 3x + y + 2y$. Before they say “I can’t do algebra,” they already have. This begins the positive feedback loop of girls believing in themselves.



A High School Mentor helping one of her students solve a problem

“Learning how to convert fractions, decimals, and percents while playing twister”

“The challenging questions gave the girls a chance to work together as a community to problem solve and answer the tougher questions,” Hunter said.

On the last day, the SHINE students performed a choreographed math dance for the whole student body of more than 1,400 students.

“We are working to build a community of young girls confident in math through movement,” Hunter said. “Throughout the 10 days, so many times the girls would say about math ‘Oh this just makes so much more sense.’ In the end, they performed for their parents and several parents came up to me and said, ‘In the past my daughter has come home with math and felt so frustrated, and now I see her working at home and she says math is starting to make more sense.’”



Learning a Hip Hop Routine



Creating algebraic expressions for the girls to solve

Nationally, most girls enrolled in the program increased in overall confidence and said by the end of the program they would be interested in a possible future in a STEM field. More than 50 percent of girls throughout the duration of SHINE reported that they felt more confident taking statewide math exams because they felt they understood the material and knew that they could do well.



Playing fraction twister



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