

## Michigan's EUPISD Recognizes Success with Algeblocks®

### Introduction

At just under 4,000 square miles, the Eastern Upper Peninsula Integrated School District (EUPISD) consists of 16 schools with a student population of 7,563, and is the largest geographic intermediate school district in Michigan. The EUPISD region is largely rural and sparsely populated, with less than 2 students per square mile. In fact, some locations are so remote that the preferred mode of transportation to and from school during the winter months is by snowmobile! EUPISD's largest school serves close to 300 students per grade, while the smallest school, located on Bois Blanc Island, is home to only 2 students.

The student demographic is largely Caucasian, but includes a Native American population that accounts for 11% of the entire Native American student population in the state of Michigan. The EUPISD Native American student group routinely scores higher than other Native American students on national tests.

EUPISD prides itself on providing ongoing professional development opportunities for its teachers, along with routine data collection to continually monitor student achievement.

### Challenges

EUPISD launched a "manipulatives initiative." According to Valerie Masuga, EUP Mathematics & Science Center Director and EUPISD Mathematics Curriculum Consultant, "We wanted to encourage the use of hands-on instruction and manipulatives in the classroom.

We needed a new approach, especially for differentiation strategies and for reaching those students who just don't understand when taught the traditional way.

"We recognize that each student is an individual and will grow academically as an individual," Valerie continues. "Teaching things in the same way over the same time period is no longer effective because the student population has become so diverse."

About the same time the new "manipulatives initiative" was launched during the 2005-2006 school year, EUPISD received a Sec. 99B grant from the state of Michigan that allowed for funds to be spent specifically on supplemental instruction materials for grades 6-8. Since the state had just implemented new graduation requirements that called for four years of math instruction, including Algebra I and II, EUPISD realized they needed to really focus on moving Algebra content into the math curriculum at the beginning of middle school and prepare students for Algebra I well before 9<sup>th</sup> grade.

### Implementation

With the Sec. 99B funds, EUPISD turned to educational publisher and hands-on instruction leader ETA/Cuisenaire to implement its exclusive Algeblocks® product. Algeblocks is a hands-on resource that allows students to see and build algebraic expressions with three-dimensional models, offering a simple way for them to bridge the connection between concrete algebraic representation and abstract concepts. In addition, EUPISD called upon Kevin Dykema, Region 1 Director of the Michigan Council of Teachers of Mathematics, 8<sup>th</sup> grade math teacher at Mattawan Middle School, and ETA/Cuisenaire consultant, to provide Algeblocks training and discuss best practices. EUPISD teachers knew Kevin from previous professional development seminars and were aware of his Algeblocks expertise.

Kevin conducted workshops for all full-time math teachers. He also prepared documentation that showed how Algeblocks is specifically

aligned to Michigan state and district standards as well as to EUPISD textbooks and daily lessons, along with instructional details on how to best implement Algeblocks in the classroom. Also, in accordance with EUPISD's "manipulatives initiative," Kevin provided insight on how and why manipulatives and hands-on instruction are excellent tools for today's math classroom.

Following that initial introduction to Algeblocks, Valerie Masuga implemented an ongoing professional development program beginning with the 2006-2007 academic year that provides Algeblocks training for teachers whenever they need it. "I work with the principals at each of our schools," Valerie explains. "They inform me when teachers have requests for training. Sometimes I work with a group of teachers, sometimes it's just one-on-one. I may do as many as 3-4 sessions a day.

"I was a math teacher in this same region for 10 years and was familiar with Algeblocks from my days in the classroom," says Valerie. "I believe the program is very effective. It's an excellent teaching tool and flows well with ETA/Cuisenaire's Base 10 Blocks, another hands-on product that allows students to connect the concrete with the abstract."

## Key Points

The introduction of Algeblocks to EUPISD has been successful on many levels. Proficiency in Algebra among intermediate students has risen significantly and continues to rise. Teacher feedback has been very positive. They are eager to use Algeblocks because they have seen the results it brings to their classroom, to test scores, and to the self-esteem of students who now understand a subject they previously struggled with. For instance, Valerie Masuga relates that one of her co-teaching teams took a group of students who were falling behind in the traditional Algebra 1 classroom and introduced them to Algeblocks for the second half of the school year. By the end of the term, those students were back on track and performing as well as their peers.

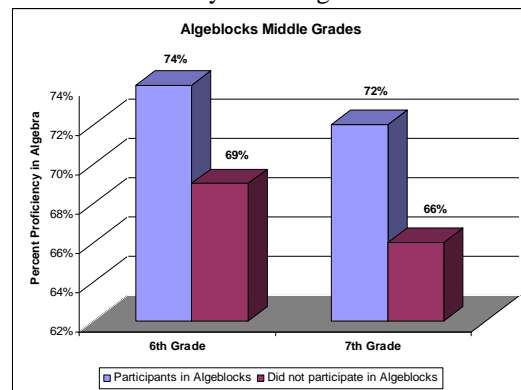
"Special Ed teachers especially love Algeblocks," says Valerie, "because their students are able to figure out a problem by touching it, drawing it, and then writing it out. The hands-on experience is exactly what they need. Also for those teachers with

differentiation needs, [Algeblocks](#) is the perfect fit," Valerie continues, "but Algeblocks isn't limiting. It isn't just for differentiation. I tell my teachers to always make Algeblocks available for **all** students. There is something to benefit students at every level and keep them engaged in the learning process. Some of our teachers use Algeblocks every single day, others use it when they have a particular need or intervention purpose. It is a very adaptable product."

Kevin Dykema echoes those sentiments: "EUPISD teachers have told me how much they enjoy using the product and how much their students love it. They really have grasped the benefit of using hands-on manipulatives to teach Algebra. I've received nothing but good, positive feedback."

## Results

Success! The data below was compiled by EUPISD after one year of Algeblocks use:



## Reflections

The motto of EUPISD is "Every Student, Every Opportunity, Every Time." The use of Algeblocks has not only improved Algebra knowledge and increased test scores, it has helped achieve this goal by allowing teachers to approach each student with the greatest opportunities to grow academically, know and understand Algebra, and improve their self-esteem by achieving best results.

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