



*Literacy and Intervention*

## KENTUCKY STATE STANDARDS

# Academy of MATH<sup>®</sup>

**Proven to Raise Achievement for Struggling Students**

Grades 2–12





A helping hand for literacy ◀

## Academy of MATH K-12 Intervention Software

### **AutoSkill International: Research Background**

AutoSkill was founded in 1990 by neuro-psychologists Dr. Ronald Trites and Dr. Christina Fiedorowicz based on the results of their original laboratory research into the causes and treatment of reading disabilities. Among their key findings was that, for a person to become a truly fluent reader, they had to master the component sub-skills of reading to the level of complete automaticity. This original research resulted in the development of learning intervention solutions – the Academy of READING® and Academy of MATH® – which build fluency in the fundamental skills of reading and math.

Since the original clinical trials, AutoSkill products have been used by K-12 students and developed to meet their requirements. Subgroup populations using AutoSkill products include elementary, middle and high school students, English Language Learners, and special education. The products are deployed across schools and districts in the United States, Canada, and Europe. For more information on AutoSkill products and services, visit <http://www.autoskill.com>.

### **Product Overview: Academy of MATH®**

The Academy of MATH applies a prescriptive treatment approach to develop mathematical proficiency in struggling students who perform at below basic or basic levels on standardized tests. The program supplements existing curriculum by helping students build foundation skills in 10 areas that align to NCTM standards: Number Sense, Addition, Subtraction, Multiplication, Division, Equations, Fractions, Measurement, Geometry, and Graphing. To learn more about NCTM correlation, visit: [http://www.autoskill.com/pdf/academy\\_of\\_math\\_correlation.pdf](http://www.autoskill.com/pdf/academy_of_math_correlation.pdf).

At the core of the program is a patented intervention engine designed to achieve results through the automation of a student's response. Through a placement test, the program first assigns each student a training stream appropriate to their grade and skill level. During training, the program can dynamically adjust the content based on student responses to offer a truly individualized training experience.

### **AUTOMATICITY IN MATH SUB-SKILLS**

Unlike other intervention solutions that provide repetitive practice in curriculum material, the Academy of MATH is the only software program that trains sub-skills to the level of automaticity – by measuring accuracy, processing speed, and consistency – to make sure the fundamental skills are mastered. This is what truly sets AutoSkill apart and what ensures that the resulting gains in ability are permanent ones.

### **UNIQUE THREE-STEP METHODOLOGY**

The Academy of MATH offers a unique “tutorial, practice, train” methodology that uses positive reinforcement to move struggling students through content levels to build fluency in fundamental math skills. Once those skills are mastered, students can advance to higher-level math concepts, such as algebra.

### **Step One: Prescribe**

The Academy of MATH automated placement test provides a snapshot of each student's math abilities relative to their grade to prescribe an individualized training program.

### **Step Two: Monitor**

For each skill area and level, students build conceptual knowledge (Terms), computational fluency (Operations), and strategic competence (Word Problems). Student progress is closely monitored to identify common errors, areas of weakness and total time on task.

### **Step Three: Intervene**

The Academy of MATH uses monitoring information to intervene as required during student training. Based on the interaction between the student and the program, training is dynamically modified to meet individual student needs. For example, the program can:

- accelerate students through skills where proficiency is demonstrated
- provide students with reinforcement or review difficult concepts
- pause for “teacher time” to fill gaps in student knowledge
- monitor progress by tracking error rate, areas of weakness and time on task

### **TRAINING REQUIREMENTS**

For optimal results, we recommend that students spend 30 minutes in the Academy of MATH per day (45 minutes for high school students), 3-5 times per week.

### **ADDITIONAL FEATURES**

- Age-appropriate motivation elements and feedback provide positive reinforcement
- Browser-based training complements existing curriculum and fits in a class or lab
- Program reports let educators and administrators track student results – at student, class, and school levels – through a single management interface
- Read-aloud functionality provides assistance for struggling readers
- Permanent licensing model can be scaled across districts up to 1000 concurrent users

### **EFFICACY AND CASE STUDIES**

Based on extensive research and proven in elementary, middle and high schools, the Academy of MATH delivers a powerful intervention solution. As shown in efficacy studies, students can achieve gains of more than 2.0 grade levels in less than 10 hours of time on task in the program. The following studies can be downloaded from the AutoSkill website:

- Augusta, Kansas District 402 (K-12): <http://www.autoskill.com/pdf/Kansas.pdf>
- Leavenworth, Kansas (K-8): [http://www.autoskill.com/pdf/leavenworth\\_math.pdf](http://www.autoskill.com/pdf/leavenworth_math.pdf)
- Webinar: Blackman Middle School, Tennessee:  
<http://www.autoskill.com/about/events/webinars/blackman/blackman.html>

### **NEW RESEARCH STUDIES**

Recently, the Department of Education selected AutoSkill for participation in a \$10-million, congressionally mandated study to determine the effectiveness of educational technology for learning reading and math. AutoSkill is among just 16 approved vendors who met the DOE’s rigorous standards. The study is now into its second year, with first-year results due to be published in Spring 2006. For more on the study, visit:  
<http://www.ed.gov/news/pressreleases/2004/02/02132004.html>

In addition, we have partnered with University High School in Orange County, Florida to run a randomized control study to determine the gains of high school students using the Academy of MATH for intervention in the 9<sup>th</sup> and 10<sup>th</sup> grades. The results of the study are expected to be published by June 2006. For more information, visit:  
[http://www.uhs.ocps.net/documents/about/articles/a0506\\_4.php](http://www.uhs.ocps.net/documents/about/articles/a0506_4.php)