

MIND Institute



VISUALIZE MATH SUCCESS FOR EVERY STUDENT

The Spatial Temporal Math Product Family

The MIND Institute's ST Math™ product family provides language-independent computer courseware – plus an optional music curriculum – for enabling K-8 students at all ability levels to master math concepts, procedures and problem solving skills aligned to state standards.

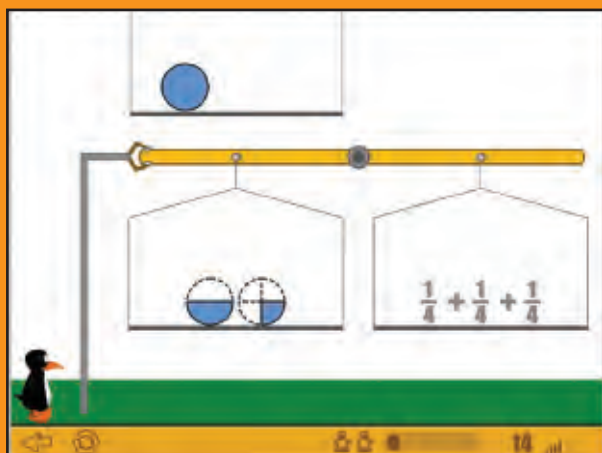
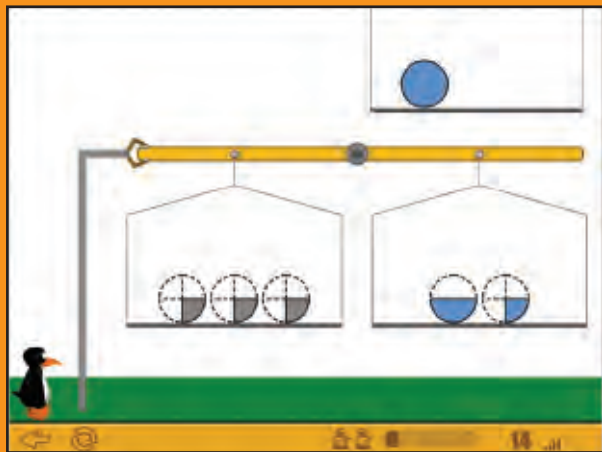
The ST Math Courseware

Removing Language Barriers to Learning Math

ST Math's visual learning strategy immediately helps English Language Learners and other students who have struggled to learn with traditional materials and methods.

The games are divided into two types: Spatial Temporal and Language Integration. Spatial Temporal games are language free and teach the math concepts using a visual, conceptual and problem solving approach. Language Integration (L.I.) games integrate key math language and symbols to help students make the transition from concepts they've learned in the courseware to the material they encounter in math textbooks and standardized tests.

The games are visually intriguing and fun to play. The design is intuitive and self-starting, with no written or verbal instructions. Starting with a "tutorial," students learn how to play each game by example.



The Comprehensive Supplement to Textbook and Classroom Instruction

The ST Math K-5 courseware consists of over 200 visual, language-independent computer games that teach math content aligned to state standards. Middle school courseware provides instruction on math standards prerequisite to mastering middle school math and algebra.

ST Math promotes mastery-based learning and mathematical understanding through integrated development and practice of math concepts, skills and applied problem solving. Schools use the ST Math courseware to supplement traditional math instruction. The personalized interactive learning platform addresses individual needs, helping all students accelerate learning – from those below grade level to those performing at or well above grade level.

Self-Paced Learning with Instructive Feedback

Students progress at their own pace. To win the games, students must solve problems and learn the math. Each game is repeated at increasing levels of difficulty until students attain a mastery level of the target concept.

A friendly penguin, JiJi, plays a central role in each game. The consistent goal is to help JiJi cross the computer screen. Students must correctly solve a problem that also removes an obstacle in JiJi's path. By design, students want to help JiJi – their inspiration and mentor who provides immediate, instructive feedback on both correct and incorrect answers. This interaction with JiJi helps students gain confidence, master the concepts and win the games.

Data-Driven Reports to Inform Instruction

Student responses and scores are captured via the Internet at the MIND Institute. An online Teacher Console generates on-demand teacher reports for monitoring the pace and performance of each student. Student, class and school reports help teachers identify student difficulty in mastering standards – and implement timely interventions.

The Music Advantage

Improved Math Performance – Plus the Gift of Music

MIND Institute research discovered the causal effect of music on spatial temporal reasoning. The benefits of music to mathematics are also directly apparent. Music has a mathematical architecture. As students learn music they also learn to recognize patterns and symmetries, and to understand and use concepts of fractions.

The MIND Institute's music curriculum is uniquely designed to enhance students' spatial temporal reasoning used by the math games to illustrate and teach math principles.

The music curriculum has four levels developed by professional music instructors and MIND Institute scientists to teach fundamental concepts, vocabulary, symbols and skills necessary to read music and play the piano.

While students receive music instruction, they also train their spatial temporal reasoning. Students master approximately 21 specially constructed musical pieces of increasing difficulty in one year. By course end, students are able to function independently and demonstrate piano playing proficiency. The combination of ST Math+Music boosts math performance while building self esteem, learning confidence, and rewards for perseverance and success.



Implementation

Rapid Start Up and Ongoing Proactive Support

Classroom teachers are able to implement the ST Math courseware after one day of training. The music track is taught by a music instructor, also after one day of training. Site-dedicated MIND trainers provide ongoing professional development and proactive assistance including help with interpretation of progress reports and appropriate intervention strategies.

The recommended schedule for use of ST Math is 45 minutes twice a week at all grade levels – and for after school programs. For schools implementing the music component, the recommended schedule is 45 minutes twice a week in year 1 and once a week in subsequent years.

Flexible Purchase and Implementation Plans

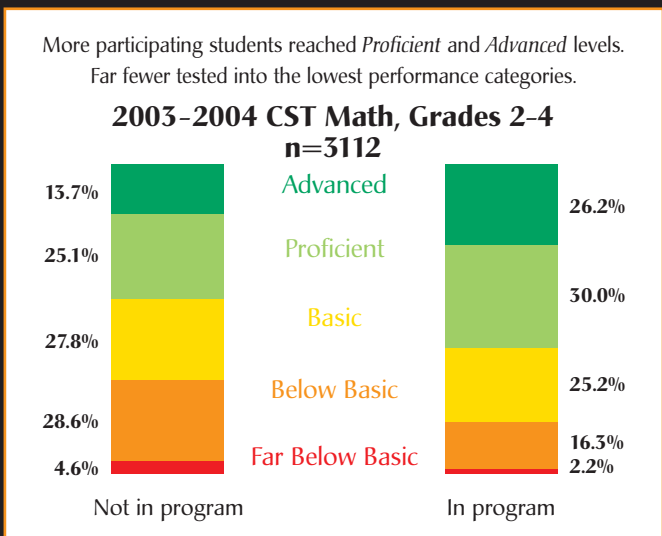
Schools supply the computers, either Macintosh or PCs, and the electronic keyboards. Curricula, software and other materials that correspond to state math standards are supplied by the MIND Institute.

Purchase plans are designed to meet specific school needs. The program may be purchased as an annual subscription or as a perpetual license. Schools may choose to implement school wide, at specific grade levels, in after school programs – or any combination of the above. All purchase plans include training and ongoing professional and technical support.

Dramatic Math Success – for All Students

- 17 school comparison, 2003: 54% of students using ST Math+Music tested Proficient or above compared to 34% not in the program at the same schools.
- Bryant Elementary, Long Beach CA, 2004–2005: The number of students in 2nd through 4th grades scoring Proficient or above increased from 35% to 54%. The number of 4th grade students testing at Below Basic or lower decreased by nearly 80%.
- St. Martin Hall, San Antonio, TX, 2005–2006: After just one year using ST Math+Music, the percent of students in the 2nd grade cohort scoring above the 50th percentile rose to 94% – an increase of 44 points from their 2005 baseline.

Benefits Every Proficiency Level



Tools for Professional Learning Teams

Because students must master every ST Math concept at increasing levels of difficulty, the courseware provides embedded assessment with instant instructive feedback for students, and on-demand reports for teachers and school leadership teams.

Data gathered help schools set improvement goals for math and rigorously monitor progress toward them without cutting into valuable instructional time. This information immediately helps school teams identify effective interventions at student, classroom and school levels.

Spatial Temporal Reasoning – the Research Key to ST Math Success

More than 30 years of neuroscience research at the University of California, Irvine identified spatial temporal reasoning as a valuable innate tool for mastering mathematics and developing problem solving skills.

Spatial temporal reasoning is every person's ability to solve multi-step problems by visualizing the components and processes in space and time, recognizing the structure of the problem, and then planning a sequence of steps to arrive at a solution.

The research also indicated that music training enhances spatial temporal abilities, and that spatial temporal computer lessons incorporating math principles might help students learn mathematics and develop problem solving skills.

In 1998 University of California, Irvine researchers Dr. Mark Bodner, Dr. Matthew Peterson and Dr. Gordon Shaw formed the MIND Institute, a non-profit corporation. They recruited a small team to create a grade 2 math curriculum that consisted of a set of computer lessons in game format and music training on electronic piano keyboards.

Results from the first pilot site, 95th Street School in Los Angeles, validated the MIND team's theories. After one year of using ST Math, Stanford 9 test scores of participating students soared to the 65th percentile compared to non-participating students at the same school who scored at the 36th percentile.

This proven, fun-for-kids program is now in over 200 schools in California and Texas, and is being introduced in the Midwest and Southeast. Over 8 years of research on student performance has consistently demonstrated that ST Math dramatically raises test scores of students at all levels of academic and English language proficiency.





ST Math+Music was vital in our efforts to reduce the wide achievement gap between native English speakers and students with limited English skills.

DR. SHAWN SMITH, PRINCIPAL, HUFF ELEMENTARY

SPRINGING OUT OF CORRECTIVE ACTION

HUFF ELEMENTARY, District U-46, Elgin IL

- After five years on the state's academic warning and corrective action lists, Huff school is now 100% free from state and federal sanctions.
- After one year of ST Math+Music, Huff raised the percent of all students proficient in math from 51% to 80% – a 29% gain.
- Huff raised ELL students from 42% to 75% proficient – a 33% gain that also cut the proficiency gap between English speaking and ELL students nearly in half to just 5%.



ST Math+Music has leveled the playing field by lifting all students, including those who were performing at the lowest and highest levels.

ERIN KOMINSKY, PRINCIPAL, WEAVER ELEMENTARY

BREAKTHROUGH HIGH PERFORMANCE

WEAVER ELEMENTARY

Los Alamitos Unified School District, CA

- Weaver Elementary's scores were the highest in Orange County, CA for two years running.
- Before the ST Math+Music program, Weaver's 2nd graders already averaged the 87th percentile in math performance. After one year in the program, as 3rd graders their performance improved to the 92nd percentile.
- Weaver Elementary was selected as a 2004 No Child Left Behind Blue Ribbon School.



Research-driven Product Development

Dr. Matthew Peterson – MIND Institute cofounder and author of the program – and the MIND team are committed to ongoing product development and improvement through

- Formal education and scientific research
- Real-time studies of student use and results

What Educators Say About ST Math+Music

ST Math+Music lightens my teaching load by making math easier for me and my students. Students recognize concepts they learned in ST Math+Music and breeze through the standard curriculum.

DANIELLE GENTILE, PS87 QUEENS NY

ST Math+Music offers 'joy in learning.' Children can't wait to go to the program. You can see the eagerness in their eyes. That's what learning should be like – JOY!

DR. DIANE WATANABE, LA COUNTY OFFICE OF EDUCATION INSTITUTE OF LEARNING, TEACHING AND THE HUMAN BRAIN

The MIND program is research-based and the results are quantifiable. It is vitally important that public schools implement programs whose validity and effectiveness are research-driven.

MARIAN BERGESON, FORMER CA SECRETARY OF EDUCATION

Teachers and students cannot just work harder with incremental steps to achieve what we need in education today. We must make a paradigm shift in teaching methods to make a major step forward.

BILL HABERMEHL, SUPERINTENDENT OF SCHOOLS, ORANGE COUNTY, CA

Math scores increased significantly, and we are able to keep special needs students in the regular classroom longer. Many of them have already 'caught up' with their peers in math skills.

LINDA LANG, PRINCIPAL, ST. MARTIN HALL, SAN ANTONIO, TX

The ST Math Program is the single most important, timely and effective learning tool I have ever witnessed.

BILL RADULOVICH, PRINCIPAL, WALNUT GROVE ELEMENTARY, PLEASANTON, CA

MIND Institute

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www.mindinstitute.net

The MIND Institute is dedicated to education program excellence and cutting edge scientific research. The support of individuals, corporations and foundations is essential to our success.