

# ST MATH AND RTI

EVIDENCE-BASED INTERVENTIONS THAT IMPROVE RESULTS



MIND Research Institute's visually-based Spatial-Temporal (ST) Math® instructional software programs provide an effective, research-based approach for both prevention (Tier 1) and intervention (Tiers 2 and 3). Blending individualized, 1:1 student learning, ST Math engages students at any level of math or language proficiency into a progression of math understanding.

## ST MATH PROGRAMS

## TIER 1

## TIER 2

## TIER 3

### ST Math: K-6

grade-level instructional software is designed to help all students reach math proficiency through self-paced, language-independent, mastery based objectives.

Paired with traditional instruction, the use of ST Math has been proven as a highly effective prevention program addressing the general population of students. Early implementation greatly reduces the incidence of students being placed in Tier 2. The self-paced games allow students at any academic level to engage with the content and experience immediate success, encouraging positive behavior.

For students who did not use ST Math in Tier 1, the program can be introduced at Tier 2 and is especially effective in unlocking unrealized learning potential. In addition to helping general students who are not performing at their academic potential, the program supports students who have difficulty with language, or who have mild autism, dyslexia or other special needs.

### ST Math: Middle School Supplement

is designed to help all middle school students reach math proficiency through grade-level topics and by providing access to intervention material if the student needs remediation.

This program should be paired with classroom instruction to provide a prevention program that includes conceptual math learning and addresses all students. Early implementation reduces the incidence of students being placed in Tier 2 intervention.

The inclusion of intervention material in this program makes it a great option for Tier 2 students who are able to access both on-grade-level and intervention content. Teachers can target students' specific needs through the formative reports.

### ST Math: High School Intervention

is designed for struggling high school students performing well below grade level. Diagnostic assessments prescribe an appropriate learning path for each student. Self-paced and language-independent, ST Math: High School Intervention provides instruction on math standards prerequisite to mastering algebra.

Students who have significant gaps in their mathematical knowledge and problem-solving skills will benefit from the use of ST Math. The instructional approach offers students the motivation to correct prior misconceptions and construct a solid mathematical foundation.

In highly individualized settings this intense, explicit instruction provides content tailored for the individual student. As instructors analyze reports they can easily identify student deficiencies by areas of mastery and implement timely interventions.

### ST Math: Fluency

is designed to help grade school students build fluency with addition and multiplication math facts, building speed and accuracy with understanding.

Evidence suggests that developing rapid and accurate responses to basic math facts, including single-digit addition, subtraction, multiplication and division, may prevent and remedy learning problems. (Skiba, Magneusson, Mastron & Erickson, 1986) The terms fluency and automaticity describe this level of skill development. In ST Math, the proven use of animated virtual manipulatives enable students to not just memorize but also "prove" basic math facts. The state-of-the-art adaptivity makes basic math fact recall effortless and frees students' working memory for problem solving. The self-paced games allow students at any academic level to engage with the content, making it appropriate for use at all stages of RTI.



## Visual Learning

Teaches students mathematical concepts by solving challenging problems through manipulating the interactive visual models found in ST Math's richly animated games.



## Learning Paths

Provide carefully structured sequences of math content that move from the visual models to incorporating mathematical symbols and language, scaffolding to move students through with a desirable level of difficulty.



## Real-time Informative Feedback

Enables students to make predictions about the visual models and to "learn by doing" based on the feedback that adapts to each student answer, showing why the solution was correct or incorrect.



## Intrinsically Motivating Problem Solving

Builds students' intrinsic motivation as they experience success in solving challenging problems, making learning math fun as students experience success and take ownership of their learning.



## Built-in Reports

Teachers, math coaches or other specialized education professionals can access student progress data in real-time. A built-in RTI report viewed daily or weekly shows both class and student-level data, indicating level of math standards mastery and RTI growth.

Student	Diagnostic Score	Topics Mastered	Assigned Interventions	Completed Interventions	Intervention Mastery	RTI Growth
Tony Abadi	40%	0/8	37	4	3%	3%
Andrea Byun	25%	1/8	37	9	58%	58%
Juan Carlos	32.5%	2/8	37	17	61%	61%
Justin Evans	27.5%	1/8	37	9	40%	40%
Megan Liszewski	75%	6/8	24	21	12%	12%
Mike Nicholson	45%	3/8	30	14	57%	57%
Lily Peters	27.5%	5/8	37	28	89%	89%
Paul Roberts	47.5%	8/8	37	37	68%	68%
Val Shuter	20%	1/8	37	15	25%	25%
William Smith	32.5%	2/8	37	17	41%	41%
Young Tesser	42.5%	5/8	37	29	37%	37%
Matt Tustin	22.5%	0/8	37	7	12%	12%
Ivan Vargaz	67.5%	3/8	30	12	48%	48%
Chris Vanaman	37.5%	0/8	37	2	100%	100%
<b>Class Average:</b>	<b>39%</b>	<b>3/8</b>	<b>35</b>	<b>16</b>	<b>45%</b>	<b>45%</b>

## Data-Driven Reports to Inform Instruction

The RTI reports are available at the student, class and school level, and help teachers identify student deficiencies in mastering standards and implement timely interventions.



# MIND

Research Institute

A neuroscience and education social benefit organization

# STMath.

- [www.mindresearch.org](http://www.mindresearch.org)
- [facebook.com/JiJiMath](https://facebook.com/JiJiMath)
- [@JiJiMath](https://twitter.com/JiJiMath)

MINDResearch

*JiJi is the penguin featured in the ST Math software games. Not only does JiJi motivate and engage children in solving the mathematics in the games, JiJi offers teachers powerful ways to connect math concepts to classroom instruction.*

