

SCHOLASTIC EDUCATION

Grant Assistance Document: New Jersey SIA—School Improvement Fund, Section 1003(g) - Mathematics

Scholastic Education has prepared this SIA Grant Alignment to assist New Jersey Local Education Agencies (LEAs) in the development of a grant application for the *School Improvement Fund, Section 1003(g)*. The purpose of Section 1003(g) of Title I of the Elementary and Secondary Education Act, also known as the School Improvement Fund, is to help Local Education Agencies address the needs of schools in improvement, corrective action, and restructuring in order to improve student achievement.

Using this Alignment Document

This alignment document is designed as a resource to provide information that can be used when completing a local application for SIA grant funds. It **only** addresses application requirements that are pertinent to *Scholastic Do The Math* and *FASTT Math* and does not cover all grant requirements. These questions are drawn from the New Jersey Department of Education (NJDOE) application for Title I—School Improvement Funds, Section 1003(g). Please refer to the grant application distributed by the New Jersey Department of Education for specific instructions in completing your application.

The following information shows how *Scholastic Do The Math* and *FASTT Math* can support a Title I School Improvement program for schools in year 5, 5 hold, 6, 6 hold, and 7 of improvement status.

SIaQ Problem and Outcomes

- 1. What problem in the school are you addressing? What are the root causes of the problem? What is the specific evidence (data) to support this determination? What are the measurable intended outcomes (goals)? What subgroup(s) that missed AYP will be addressed in the intended outcome?***

For this question, clearly state the problem that you will be addressing with SIA Funds. Use state and local assessment results, demographic data regarding student achievement, and student conduct information to identify the specific area of need regarding both the curriculum and student population to be served. Again, the content in this assistance document pertains to mathematics.

SIaQ Federal School Improvement Strategy(ies)

- 2. Identify the School Improvement Strategy(ies) the LEA will implement to move the school out of improvement status. You must select at least one of the four federally required strategies listed below:***
 - Provide customized technical assistance and/or professional development that is designed to build the capacity of LEA and school staff to improve schools and is informed by student achievement and other outcome-related measures.***
 - Utilize research-based strategies and practices to change instructional practice to address the academic achievement problems that caused the school to be identified for improvement, corrective action, or restructuring.***
 - Create partnerships among the SEA, LEAs, and other entities for the purpose of delivering technical assistance, professional development, and management advice.***
 - Implement other strategies determined by the SEA or LEA, as appropriate, for which data indicate the strategy is likely to result in improved teaching and learning in schools identified for improvement, corrective action, or restructuring.***

Do The Math and *FASTT Math* can be used to address any of the three strategies indicated above.

3. Explain how the selected strategy(ies) will be most effective in addressing the intended outcomes.

Do The Math and *FASTT Math* are research-based programs that support student development in arithmetic, specifically those foundational math skills recognized by the National Math Panel. *Do The Math* supports students in building a strong foundation in computation, number sense, and problem solving. *FASTT Math* is designed to support students in 2nd grade and up in establishing fact fluency in addition, subtraction, multiplication, and division in order to develop higher-order math skills.

Do The Math is a research-based math intervention program that proactively improves young students' access to the core curriculum by supporting the development of the underlying concepts of mathematics for all students (Tier 1), differentiating and targeting intervention for groups of students who need additional support (Tier 2), or providing assessments and targeted interventions for individual students who have not yet acquired a foundational understanding of key topics in number and operations (Tier 3).

FASTT Math uses research-validated methods to provide systematic instruction and continuous practice to help students automatically recall and understand math facts in addition, subtraction, multiplication, and division. The program uses adaptive technology to offer each student a differentiated learning experience based on his or her individual strengths and weaknesses. Developing fluent recall of the basic math facts allows teachers and students to focus on more complex computations, problem-solving and higher-order math concepts in the math curriculum.


4. How will the selected strategy(ies) assist in achieving the performance targets (AYP) in the school's Title I Unified Plan—School Program/Activity Plan?

Do The Math and *FASTT Math* provide a complete solution for students who struggle with foundational math skills.

Do The Math covers foundational topics for algebra and as such is not grade-level specific. However, Grades Two through Eight are the grades where the foundations for Fluency with Whole Numbers and Fluency with Fractions should be established. The program targets four numeracy topics that are further scaffolded into twelve modules that are sequenced and paced to move from basic conceptual understanding to more complex calculations. This gives the program the flexibility to span multiple grades—and to align with every service delivery tier of the *Response to Intervention* model. Every module includes a series of thirty step-by-step lessons.

The Addition and Subtraction Topic covers Addition with sums up to one hundred, Subtraction with numbers up to one hundred, and Numbers greater than one hundred. The Multiplication Topic covers Basic Concepts of Multiplication, Facts through twelve times twelve, and Factors greater than twelve. The Division Topic covers Basic Concepts of Division, Facts through one hundred divided by ten, and Dividends to one thousand. The Fractions Topic covers Basic Concepts of Fractions, Equivalence and Comparison, and Addition and Subtraction of Fractions.


Each of the twelve *Do The Math* modules follows a consistent structure. Lessons are carefully scaffolded and paced to give students a chance for optimal learning. Every fifth lesson assesses students to determine what they have learned. Teachers are provided with additional strategies for students still struggling as well as those ready for a challenge. An easy-to-use Objectives Tracker provides an ongoing record of each student's growth achievement.

 For a complete review of the *Do The Math* program components, please refer to the *Do The Math* program brochure or visit www.scholastic.com/dothemath.

FASTT Math is designed to help students develop fluency with basic math facts in addition, subtraction, multiplication, and division, in numbers ranges 0-9 or 0-12. The program begins by assessing the student's current fluency of facts (correct and fast answers). It then provides adaptive instruction in English and Spanish to help students build a memory relationship between a problem and its answer and increase the speed at which the student responds to problems.

Students must have the appropriate conceptual foundation to use the *FASTT Math* software. The *Fact Fluency Foundation Guide* provides instruction in number sense and operations for those students who lack a foundation in basic math concepts. The goal of the *FASTT Math* software is for students to be able to recall new math facts fluently from memory on a consistent basis in less than 1.125 seconds. The program uses a four-step process to help students create a memory association for a fact.

- a. Step One: Fact Selection and Presentation—The program selects a fact pair in the Fact Grid and presents each fact to the student. During fact presentation, the student sees and hears the facts, and is asked to say them aloud.
- b. Step Two: Fact Model Screen—The student has the option to see and hear an animated visual model that represents the fact.
- c. Step Three: Fact Typing Screen—The program asks the student to type each presented fact and provide the answer from memory.
- d. Step Four: Fact Input Screen—The pair of facts is presented in the expanding recall model to solidify the memory relationship and help students develop quick recall of the facts.

 For a complete review of the *FASTT Math* program, please refer to the *FASTT Math* program brochure or visit www.scholastic.com/fasttmath.

5. Identify the programs and activities that will be used to implement the federal strategy(ies).

In *Do The Math*, lessons engage students with concepts and skills in multiple ways using concrete, manipulative materials, games that reinforce and provide practice, selected children's literature that provides a context for mathematical concepts and skills, and visual representations to help students represent their thinking. The program includes processes and materials that scientifically-based research has shown to be effective in increasing academic achievement. The gradual release pedagogy in *Do The Math* sets an expectation for student involvement and gives learners the direction and support needed to be successful. The program, which reflects *National Council of Mathematics (NCTM)* standards, teaches essential Numbers and Operations math skills that integrate with a core math curriculum. Step-by-step lessons help students develop understanding, learn skills, see relationships, and make connections. Students develop the skills they need to compute with accuracy and efficiency, the number sense they need to reason, and the ability to apply their skills and reasoning to solve problems. Learning experiences link concepts and skills to their mathematical representations and language. A four-phase pedagogy built on gradual release prepares students for individual success.

Phase One—The teacher models and records the mathematical representation on the board.

Phase Two—The teacher models again, now eliciting responses from students, and again records on the board. As the teacher models, she guides students to respond to the math problem using the strategy and verifying using the program manipulatives. This phase allows students to explore the concepts using manipulatives in a "safe" environment as the teacher guides them to understanding.

Phase Three— The teacher represents a similar problem as students work in pairs to do the mathematics and then the teacher, once again, records on the board. As they work toward a solution, students explore the problem-solving methods and explain, as well as elaborate their methods to one another.

Phase Four—Students work independently, referring to the work represented on the board as examples; the teacher monitors and supports their work. During this phase, students are utilizing each of the 5E stages as they explore, engage, explain, elaborate, and evaluate their processes.

Multiple strategies for developing concepts and skills support student learning. Lessons engage students with each concept and skill in several ways, deepening their mathematics knowledge. Manipulative materials provide students concrete experiences with abstract ideas. Games offer engaging situations where mathematical understandings and skills are reinforced. Children's literature provides a springboard for instruction. The gradual release process embedded in the instructional process of *Do The Math* allows students to work toward independently solving math problems while teachers monitor and support their learning.

FASTT Math employs a proven approach called “expanding recall” to help students move newly acquired math facts from short-term working to long-term memory. No more than three new facts are introduced during any given 10-minute session. Students practice holding new facts longer and longer in working memory until they make the leap to automatic retrieval. Developing automatic recall of basic facts provides the foundation needed for later development of higher-order math skills.

FASTT Math uses this effective procedure:

- a. The student is introduced to two or three non-fluent facts to study. Typically, but only when possible, the session's “Study Facts” appear as a commutative pair. The student is encouraged to read the facts aloud. The student can also watch an animated representation of each fact to help remind him/her in a more concrete way of what the fact represents.
- b. After seeing and speaking the new “Study Facts,” the student is asked to type each number sentence into the computer. If he/she types the facts incorrectly, the facts are redisplayed, and the process is repeated. This helps establish a memory relationship with the fact in the student's mind.
- c. Once the student can correctly type the number sentences of the new “Study Facts,” the program then presents a practice session with these facts. The program mixes presentations of the two “Study Facts” with a gradually increasing number of fluent facts. The student builds the capacity to hold the fact in memory for a longer and longer period of time. *FASTT Math* limits the allowed response time to prevent the student from employing non-automated strategies.
- d. When the student is able to recall the current “Study Facts” consistently, the facts are added as “Focus Facts” to the student's Fact Grid. The software provides extra practice to help the students solidify them in memory and increases recall speed.
- e. Once a student is able to recall his or her “Focus Facts” in less than .8 of a second, those “Focus Facts” are changed to “Fast Facts” on the student's Fact Grid.

FASTT Math also provides students with customized worksheets to practice their math facts in a paper-and-pencil format. Teachers can print problems in a vertical or horizontal format and in single- and multi-digit operations. These worksheets only include the math facts with which a student is fluent or is currently studying.

6. Explain how the selected programs and activities will be the most effective in addressing the intended outcomes.

Research tells us that scaffolding is one of the principles of effective instruction that allows teachers to accommodate individual student needs. Both *Do The Math* and *FASTT Math* provide individualized instruction and targeted practice in the most foundational math skills.

Do the Math gives students who are at risk of falling behind or who have already fallen behind the chance to catch up and keep up. The program carefully and intentionally scaffolds four core topics—Addition & Subtraction, Multiplication, Division, and Fractions—that rebuild fluency with whole numbers

and fluency with fractions, critical foundations that prepare students for success with algebra. Each topic is scaffolded into three modules that have the flexibility to span multiple grades. *Do the Math* has the capacity to be used flexibly by educators within a variety of instructional models.

Do the Math offers a way to strengthen any core math program by providing the targeted instruction required in addition, subtraction, multiplication, division, and fractions. Unlike most textbooks, which typically cover a broad range of topics, *Do the Math* modules focus on the concepts and skills essential to long-term student success. The program addresses the needs of students who struggle with core math learning by offering scaffolded instruction, paced specifically to meet their needs, and proven instructional strategies. Explicit step-by-step instruction anticipates common confusions, and the gradual release pedagogy at the core of the program helps all students to move through phases from dependence to independence. In addition, the Beginning-of-Module Assessment reveals a baseline of what students know, and the End-of-Module Assessment shows whether they have mastered the set of objectives taught. After every five lessons, Progress Monitoring Assessments reveal students' growth so teachers can immediately differentiate their needs.

Do the Math is paced specifically for students who are not achieving successfully in math. Assessments and students' work allow a teacher to monitor a student's progress and reveal his or her misconceptions and misunderstandings. Formative Assessment through daily observations allows teachers to observe students and provide prompt attention. Progress Monitoring, which occurs every fifth lesson, is followed by suggestions for differentiating instruction.

The *FASTT Math* system delivers individualized instruction and targeted practices that address the diverse needs of all students. With adaptive technology, independent practice, and the additional interventions included in the *Fact Fluency Foundations Guide*, the gaps in each student's number knowledge are identified and filled. Moreover, the assessments and reports embedded in the program promote the practices of screening students, identifying those who require support in developing fact fluency and providing the exact instruction that each one needs, offering ongoing progress monitoring, and producing actionable reports.

SIAq District Support

7. *What technical assistance will the district provide to the school to help it implement the strategies and achieve the targets and goals? What is the method of continuous feedback that will be used by the district regarding the activities in the proposed program?*

The *Do The Math* and *FASTT Math* programs provide multiple layers of professional development, service, and support. Both programs have embedded assessments that provide continuous feedback and generate reports that can be used to support the district's Technical Assistance Plan.

Do the Math offers a variety of professional development solutions:

Scholastic provides teachers with a half-day of hands-on experience with the *Do the Math* program components, designed to focus on any one of the particular models. The Implementation Training provides teachers with ways to effectively implement *Do The Math* as well as to highlight the instructional strategies that are built into the program.

During the implementation training, Scholastic consultants will model a *Do The Math* lesson to ensure that teachers can apply the assessment strategies to the classroom. Ongoing assessment and embedded professional support is built into the program to help teachers meet individual student needs. During lessons, teachers observe students working in the Whole Group, with partners, and independently. Specific guidance for how to promote understanding and address student misconceptions is integrated into all lessons. Suggestions for differentiating instruction are included after every "Assessing Student Understanding" lesson, both for students who need additional help and those who are ready for more challenge.

Embedded Professional Development—Every lesson in *Do The Math* was developed and written by Marilyn Burns and a select team of master teachers from Math Solutions. Professional development is embedded in the program and reflects the long history of Marilyn's work with teachers and understanding of their needs. The *Teacher Guide* provided for each module of the program provides step-by-step teaching instructions, clear models, modified scripting, and guidance for monitoring student progress. Supporting Instruction, Language Development, and Mathematical Background boxes at point-of-use provide professional information that helps prevent learning, and well as teaching stumbling blocks.

Additional professional development seminars, coaching, and customized training are priced per day. In addition to the half-day Implementation Training for *Do The Math*, Scholastic offers these other optional professional development resources, available for purchase.

Do The Math: Best Practices for Math Intervention (Grades 2-5)—This online course focuses on developing teachers' knowledge of mathematical concepts, exploring how students learn math, and modeling instructional strategies. Teachers will learn best practices for math intervention and explore strategies for teaching addition and subtraction, multiplication, division, and fractions. This course is available for teachers, math coaches, or principals.

Math Solutions Professional Development—Scholastic collaborates with *Math Solutions Professional Development* (www.mathsolutions.com) to offer teachers professional development options that focus on the mathematics and pedagogical choices that are the foundation of every *Do The Math* lesson. The Two-Day Introductory Course: Support for Getting Started presents the components of the program, illustrates their use and management, and prepares teachers to implement the Instructional Strategies built into *Do The Math* lessons. The Five-Day School-Year Series: Direct Connection with Classroom Instruction engages teachers in back-to-school action research for implementing *Do The Math* and provides ongoing feedback to teachers about their instruction as they implement the program. The Five-Day Immersion Summer Courses: In-Depth Experience with Program Content and Instructional Strategies builds teachers' knowledge of the essential underlying mathematics content for *Do the Math*, develops teachers' understanding of how students learn math, and prepares teachers to implement ongoing progress monitoring and differentiation of instruction for optimal learning.

The *FASTT Math* program also includes a wealth of professional development materials with the purchase of the program. The *FASTT Math Teacher's Guide* provides strategies for effectively implementing the program and using software-generated reports to monitor and manage student progress. The *Fact Fluency Foundations Guide* offers concrete guidelines and resources for assessing and addressing student's needs in understanding number sense and operations. The *Research Foundation & Evidence of Effectiveness for FASTT Math* presents the research-based principles behind the program and data that shows how effective *FASTT Math* is in increasing math fact fluency.

For *FASTT Math*, Scholastic will provide a half-day in-person implementation training for teachers. This training examines how *FASTT Math* teaches automaticity and fluency and provides teachers with all the tools to successfully get started with the program. Participants learn how to implement the *FASTT Math* instructional model, use report data to monitor progress and individualize instruction, and integrate *FASTT Math* into the existing mathematics curriculum. Supplemental full-day trainings, as well as coaching days are available for an additional cost and will be integrated into the implementation calendar.

8. How will you evaluate if the strategy(ies) have been effective in helping you reach the targets and accomplish the goals?

Do The Math includes progress monitoring tools that provide teachers with information they can use to determine student achievement gains and understand individual needs. Assessments are embedded into instruction to provide teachers with a constant window into student performance and progress. The Screening and Placement Guidelines help teachers to get students started in the program. A

Beginning-of-Module Assessment provides teachers with a snapshot of what the student knows. Formative assessment after every fifth lesson provides formal, periodic checks to monitor progress. An End-of-Module Assessment provides summative assessment that can be used to measure student growth.

Do The Math provides various opportunities for teachers to collect and use data to inform and target their instruction in order to meet all of their students' diverse needs. *WorkSpace* assignments, integrated into each lesson, help teachers evaluate students' performance and progress. The Objectives Tracker allows teachers to chart student mastery of each of the lesson objectives. Teachers record students' progress monitoring results on a copy of the Objectives Tracker found at the back of each module's Teacher Guide. The tracker is provided so that teachers may document students' progress at each meeting each module objective by recording the date when the student consistently performed the objective with accuracy. Using both the *WorkSpace* pages and Objectives Tracker, the teacher is able to respond with authentic and timely feedback.

Actively monitoring student progress and program usage is easy with the help of three different types of reports for *FASTT Math*. These reports help teachers to assess a student's strengths and weaknesses and evaluate his or her progress in math fact fluency. Further reports inform instruction and facilitate administrative and management tasks.

Student Reports can be printed by teachers and administrators for individual students. The Student Fact Fluency Status Report shows an individual student's fluency with each fact in the specific operation for the selected date. The Student Lesson Status Report shows individual student daily lesson status during the selected time period. The Student Response to Intervention Report shows individual student fact fluency growth over time.

Class, Grade, and Teacher Reports can be printed by teachers and administrators for specific groups, classes, and for all students that are assigned to a teacher. The Progress Report shows student performance—such as Fast Facts after Placement Assessment and current Fast, Focus, and Study Facts—and usage information for each student listed. The Intervention Grouping Report groups students under four *FASTT Math* performance standards—Fluent, Near Fluent, Developing, and Under developing.

School and District Reports can be printed by administrators for specific grades, schools, and a district. The Summary Progress Report shows the number of students enrolled in *FASTT Math* and assigned to each operation. The *FASTT Math* Implementation Report shows student fact fluency growth during the selected time period.

For additional information and assistance with this document,
or questions relating to *DO THE MATH* or *FASTT MATH*
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