# *FASTT Math Next Generation*

## Aligns to IDEA, Part B
## EDUCATION OF CHILDREN WITH DISABILITIES

The purpose of *IDEA, Part B—Formula Grant Programs* is to assist states in providing a free, appropriate public education (FAPE) in the least restrictive environment for children with disabilities ages 3 through 21. The following chart shows how ***FASTT Math Next Generation*** can support children with disabilities under IDEA, based on key components and recommendations from IDEA, Part B, Section 611. The criteria are drawn from the Federal *IDEA, Part B Final Rules and Regulations*, posted at:

http://www2.ed.gov/programs/osepgts/index.html

| Components of a IDEA, Part B Program | ***FASTT Math Next Generation*** |
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| Provide research-based and scientifically validated interventions | ***FASTT Math Next Generation*** is an efficient, personalized technology program, in English and Spanish, to help students in grades 2-9+ achieve math fact fluency in just 10 minutes a day. Through the identification and remediation process provided by *FASTT Math Next Generation,* students develop the understanding and skills necessary to automatically recall operations with whole numbers 0-12 for addition, subtraction, multiplication, and division. The program accelerates and fosters the developmental progressions leading to fluency as described by mathematics education researchers. As a result of the development of math fact fluency, students create the number foundation necessary for performing higher-order mathematics.<br><br>*FASTT Math Next Generation* includes adaptive, motivating student software along with teacher materials and a management system for progress monitoring and differentiated instruction. The adaptive technology manages the pace, level, and multimodal instruction, personalizing learning for students.<br><br>RESEARCH<br><br>Developed by Dr. Ted Hasselbring, *FASTT Math Next Generation* employs the research-validated FASTT algorithm (Fluency and Automaticity through Systematic Teaching with Technology) to build fact fluency—retrieval of facts with accuracy, automaticity, and understanding. Designed to carefully manage cognitive load, the FASTT algorithm uses the expanding recall model to help students move facts from working memory to long-term memory by strategically interspersing new facts with fluent facts, controlling response time, and providing instant corrective feedback.<br><br>*FASTT Math Next Generation* is informed by an extensive body of empirical and theoretical research on best practices for developing math fact fluency. The *FASTT Math Next Generation* Research Foundation Paper provides descriptions of relevant mathematics education, educational psychology, and instructional design research alongside descriptions of how the research foundations have been translated into the program design and curriculum.<br><br>📖 To download a copy of the *FASTT Math Next Generation* Research Foundation Paper, please see: http://teacher.scholastic.com/math-fact-fluency/fastt-math-next-generation/research |

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| Provide access to the Core Curriculum taught in General Education classrooms | State Standards call for all students to be fast and accurate with math facts in all operations by the end of Grade 3. Students are also expected to develop number sense by understanding relationships between numbers within operations. By developing these fluencies, students can then successfully focus on higher level math skills. *FASTT Math Next Generation* provides the most efficient, personalized path to fact fluency for every student; the program also extends beyond math fact fluency practice into more rigorous Standards.<br><br><u>Fluency with Math Facts</u><br><br>*FASTT Math Next Generation* assesses each student's initial fact fluency and provides 10-minute daily sessions of computer-based adaptive instruction in English and Spanish. The software provides practice for accuracy and speed in addition and subtraction facts within 0-24 and multiplication and division facts within 0-144. The program also extends beyond fact fluency to more rigorous practice aligned to State Standards, including inverse relationships, recognizing unknowns, multi-digit operations, associative and commutative properties, number composition, and fact families.<br><br><u>Conceptual Understanding</u><br><br>*FASTT Math Next Generation* builds conceptual understanding of single-digit operations through quantity and mental math strategies using lessons from the Teacher's Guide. The software develops math fact fluency—through expanding recall—in all four operations, laying foundations for higher-order mathematics with multi-digit whole numbers and arithmetic.<br><br><u>Visual Representation</u><br><br>*FASTT Math Next Generation* utilizes arrays to provide visual representations of students' non-fluent facts. The software introduces fact pairs, such as 3 x 7 and 7 x 3, simultaneously and uses visual models to support students in recognizing the pattern of the commutative property. The program also provides multimodal presentation of math facts—visual, auditory, and kinesthetic—laying the foundation for finding common factors and multiples.<br><br><u>Expressions & Equations</u><br><br>*FASTT Math Next Generation* provides adaptive lessons and activities to develop automaticity, improving students' ability to solve real-life and mathematical problems. The software creates efficient strategies for solving problems, expressions, and linear equations by developing rapid retrieval of math facts. |
| Use Supplemental Instructional materials, where appropriate, to strengthen the efficacy of the comprehensive core curriculum | The *FASTT Math Next Generation* Teacher's Guide includes a section dedicated to Intensive Support—designed to help teachers form an effective math intervention plan for students who are experiencing learning challenges with math facts. The Intensive Support section includes a Diagnostic Assessment that evaluates students' quantity concepts and skill in navigating the number system.<br><br>CONTINUED |

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| Use Supplemental Instructional materials, where appropriate, to strengthen the efficacy of the comprehensive core curriculum<br>*Continued* | Research-based lessons comprised of targeted strategies and activities help students develop robust and flexible number sense in the following foundational math essentials.<br>▪ Quantity Concepts—Proficiency in this area means that students possess a deep understanding of quantities and quantity relationships.<br>▪ The Counting System—Proficiency in this area means that students have the counting skills for navigating the base-ten number system.<br>Using the Diagnostic Assessment and Intensive Support lessons, teachers are able to differentiate instruction based on students' needs. They can use the lessons during pull-out intervention, during lunch, before school, or after-school to replace grade-level math curriculum for students who need intensively-focused foundational support. Teachers may supplement the ongoing grade-level curriculum by teaching Intensive Support lessons during independent work time or as a precursor to the *FASTT Math Next Generation* Instructional Software. Additionally, they may teach the Intensive Support lessons in a small group setting while the rest of the class works on the Instructional Software or individualized practice worksheets. |
| Educate students in the least restrictive environment consistent with their educational needs | *FASTT Math Next Generation* provides an individualized, self-paced experience for each student. Lessons are approximately 10-15 minutes long. Students will achieve success when they use the program 3-5 times per week. As a perfect complement to any core math program, *FASTT Math Next Generation* can be implemented in the following settings:<br>▪ Before- or after-school<br>▪ Daily instructional math block<br>▪ Computer Lab period<br>▪ During Homeroom<br>▪ Pull-out Intervention<br>▪ Summer School |
| Implement a multi-tiered strategy designed to provide increasingly intensive interventions to those students who are not making adequate progress in the Core Curriculum | *FASTT Math Next Generation* aligns to the Response to Intervention Framework in each tier, and supports all diverse learners who require any of the multi-tiered levels of intervention. The program was purposefully designed to be used flexibly by educators within a variety of instructional models.<br>▪ Tier 1— *FASTT Math Next Generation* can be used to supplement classroom instruction and provide students with extra practice on any of the four basic math operations that they are learning in class.<br>▪ Tier 2—*FASTT Math Next Generation* can be used for students who have not mastered fluency on grade-level operations while other operations are taught in the classroom.<br>▪ Tier 3—The *FASTT Math Next Generation* Teacher's Guide includes research-based lessons and targeted strategies in Quantity Concepts and The Counting System for students who experience learning challenges with math facts. |

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| Provide ongoing progress monitoring of students' responses to high-quality, research-based intervention, and use it to guide the Individualized Education Plan (IEP) | Students begin all four *FASTT Math Next Generation* operations with a Placement Assessment, which consists of two parts—a Typing Assessment and a Fact Assessment. Together, these assessments create a baseline of a student's fact fluency in each operation. The Software determines fluency by subtracting the student's typing speed from the time it takes the student to input the answer. A fact is considered fluent if the student can provide the correct answer in 0.8 seconds or less.<br><br>The Instructional Software also includes periodic assessments to continuously monitor student progress. The first part of a student's daily lesson may be an assessment. The following two types of assessments are presented at different points determined by a student's instructional time in the software and his or her fact states.<br><br>▪ Mastery Assessment—Used to determine if the student is able to respond fluently to *Focus Facts*. If so, the facts become *Fast Facts*; if not, the facts remain *Focus Facts* and are presented again in the next Mastery Assessment.<br><br>▪ Challenge Assessment—Used to determine if the student is able to respond fluently to facts in the next level, even though these were non-fluent after the Placement Assessment. This accounts for facts the student may have learned outside the software.<br><br>The *Scholastic Achievement Manager* (SAM) captures performance data each time students use *FASTT Math Next Generation*. SAM organizes progress and usage data in easy-to-access data-rich reports. Teachers are able to run reports to view data for individual students, groups, or an entire class. The reports enable teachers to monitor students' progress, target instruction, and share results with administrators and families.<br><br>The Teacher Dashboard pulls key data from SAM to track student performance on the Instructional Software and *STRETCH-To-Go*. The Dashboard allows teachers to access Data Snapshots that show the most crucial student data metrics for implementation and Notifications that help monitor program usage, such as average Instructional Software time. The Reports Scheduler allows teachers to schedule reports automatically from SAM, and *Daily Quick Tips* enhance the daily instruction and program implementation. |
| Include literacy instruction that targets English Language Learners who have not yet been identified as needing Special Education services | *FASTT Math Next Generation* includes many support strategies for English-Language Learners. The 1.25-seconds monitored response time can be lengthened to allow more time to respond. The number of problems presented during instruction can be reduced for students who need more time to absorb new information. The audio function can be turned on or off. Students can listen repeatedly to any instructions they may have missed. Problems can be spoken aloud in English and Spanish. |

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| Inform parents of General Education services that would be provided and strategies to support their child's rate of learning | A Parent Letter, available in English and Spanish, explains the goal of the *FASTT Math Next Generation* program, steps children will be completing as they learn, and ways to reinforce their learning at home. *STRETCH-To-Go* games can be accessed at home or anywhere with Internet access. Teachers can share with parents the Student Fact Grid report, which displays the student's fluency status with all facts in the operation. Teachers can print Award Certificates as students complete different levels of the fact grid. The certificates can be shared with parents and used as examples of student achievement. Also, customized worksheets can be generated that students can bring home as part of the homework that parents can support. |
| Provide a high-quality professional development plan to support teachers providing Special Education services, as well as those implementing RtI | *FASTT Math Next Generation* Implementation Training<br>This training examines how *FASTT Math Next Generation* 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 Next Generation* instructional model, use report data to monitor progress and individualize instruction, and integrate *FASTT Math Next Generation* into the existing mathematics curriculum.<br><br>*FASTT Math Next Generation* Interactive Webinar<br>In this interactive webinar, teachers, coaches, and administrators learn how to get started with *FASTT Math Next Generation,* including understanding the program's instructional method and underlying research, using the Teacher Dashboard to monitor progress, and using data to differentiate instruction.<br><br>In-Classroom Support—RECOMMENDED, at an additional cost<br>Scholastic consultants provide teachers with individualized support and focused strategies side-by-side in the classroom. They build relationships with teachers to support on-model implementation, classroom management, program monitoring, and data-driven instruction. A year-long customized plan of in-classroom visits provides teachers with in-person, individualized support and focused strategies for the classroom. For the best results, Scholastic recommends monthly visits for all teachers. |
| Coordinate with activities funded by and carried out under the Elementary and Secondary Education Act (ESEA) | *FASTT Math Next Generation* can be integrated with funds from state, local, private, and other sources. The federal funding programs for which it qualifies include:<br>▪ Title IA—Improving Basic Programs<br>▪ Title I—School Improvement Grants (SIG)<br>▪ Title I—Supplemental Education Services (SES)<br>▪ Title III—English Language Acquisition<br>▪ IDEA, Part B<br>▪ IDEA, *Response to Intervention*<br>▪ 21st Century Community Learning Centers (21CCLC)<br>▪ Race to the Top—District (RTT-D)<br>▪ Investing In Innovation (i3) |