


FASTT Math Next Generation

Aligns to Title III

ENGLISH LANGUAGE ACQUISITION

Title III—English Language Acquisition is designed to improve the education of limited English proficient (LEP) children and youths by helping them learn English and meet challenging state academic content and student academic achievement standards. The program provides enhanced instructional opportunities for immigrant children and youths. The following chart shows how **FASTT Math Next Generation** can support a Title III program. The criteria are drawn from the Federal *Title III Non-Regulatory Guidance*, posted at:

<http://www2.ed.gov/programs/sfgp/index.html>

Components of a Title III Program	<i>FASTT Math Next Generation</i>
<p>Increase the English proficiency of LEP children by providing high-quality educational programs that are based on scientifically based research</p>	<p>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 <i>FASTT Math Next Generation</i>, 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.</p> <p><i>FASTT Math Next Generation</i> was designed to meet State Standards, which call for students to be fast and accurate with facts in all four operations—Addition, Subtraction, Multiplication, and Division—by the end of Grade 3.</p> <p>RESEARCH</p> <p>Developed by Dr. Ted Hasselbring, <i>FASTT Math Next Generation</i> 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.</p> <p><i>FASTT Math Next Generation</i> is informed by an extensive body of empirical and theoretical research on best practices for developing math fact fluency. The <i>FASTT Math Next Generation</i> 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.</p> <p> To download a copy of the <i>FASTT Math Next Generation</i> Research Foundation Paper, please see: http://teacher.scholastic.com/math-fact-fluency/fastt-math-next-generation/research</p>

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<p>Measure the English proficiency of LEP students so that they develop proficiency in English while meeting State academic content and students academic achievement standards</p>	<p>English Language Learners begin all four <i>FASTT Math Next Generation</i> 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.</p> <p>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 stats.</p> <ul style="list-style-type: none"> ▪ <u>Mastery Assessment</u>—Used to determine if the student is able to respond fluently to <i>Focus Facts</i>. If so, the facts become <i>Fast Facts</i>; if not, the facts remain <i>Focus Facts</i> and are presented again in the next Mastery Assessment. ▪ <u>Challenge Assessment</u>—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. <p>The <i>Scholastic Achievement Manager</i> (SAM) captures performance data each time students use <i>FASTT Math Next Generation</i>. 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. The Teacher Dashboard pulls key data from SAM to track student performance on the Instructional Software and <i>STRETCH-To-Go</i>. 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 <i>Daily Quick Tips</i> enhance the daily instruction and program implementation.</p>
<p>Increases the English proficiency and academic achievement of LEP children in core academic subjects</p>	<p><i>FASTT Math Next Generation</i> builds English Language Learners’ abilities to retrieve basic math facts from memory, both accurately and fluently. The program begins with a computer-based assessment that presents all of the number combinations in an operation and records the amount of time that the student takes to evaluate each one correctly. Following the initial placement assessment, <i>FASTT Math Next Generation</i> constructs a fact grid that allows the student and teacher to visually see the fluent <i>Fast Facts</i> and those that the student answered slowly or incorrectly—the <i>Study Facts</i>. Only after the student is consistently able to retrieve the answer to a target fact within the controlled response time is that fact added to the student’s set of drill and practice facts.</p>

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<p>Increases the English proficiency and academic achievement of LEP children in core academic subjects <i>Continued</i></p>	<p><i>FASTT Math Next Generation</i> 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.</p> <p><u>Operations & Algebraic Thinking</u></p> <p>To meet State Standards, <i>FASTT Math Next Generation</i> 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 employs the research-validated FASTT algorithm to build fact fluency and reduce recall time to 0.8 seconds or less. Further, the program extends beyond fact fluency to more rigorous practice with <i>STRETCH-To-Go™</i>, including inverse relationships, recognizing unknowns, multi-digit operations, associative and commutative properties, number composition, and fact families.</p> <p><u>Number & Operations</u></p> <p>State Standards expect students to understand place value for single and multi-digit operations with whole numbers and decimals. <i>FASTT Math Next Generation</i> builds conceptual understanding of single-digit operations through quantity and mental math strategies using lessons from the Teacher’s Guide. The program ensures every student is appropriately challenged with adaptive instruction that creates an individualized learning progression for each student based on performance. Additionally, the program utilizes arrays to provide visual representations of students non-fluent facts, introduces fact pairs (such as 3×7 and 7×3) simultaneously, and uses visual models to support students in recognizing the pattern of the commutative property.</p> <p><u>The Number System</u></p> <p>State Standards require students to apply and extend previous understandings of operations to fractions and compute fluently with multi-digit numbers, as well as find common factors and multiples. To meet these standards, <i>FASTT Math Next Generation</i> promotes retention of fluent facts for multi-digit computations through 18 engaging and motivating games. Also, the program supports the transfer of learning to paper and pencil with customized practice sheets, and provides multimodal presentation of math facts—visual, auditory, and kinesthetic.</p> <p><u>Expressions & Equations</u></p> <p>State Standards expect students to solve real-life and mathematical problems using numerical expressions. Students’ understanding of arithmetic should extend to algebraic expressions. To meet these standards, <i>FASTT Math Next Generation</i> provides adaptive lessons and activities to develop automaticity. In addition, the program creates efficient strategies for solving problems, expressions, and linear equations by developing rapid retrieval of math facts.</p>

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<p>Improve the instruction of LEP children by providing for the acquisition of educational technology or instructional materials</p>	<p><i>FASTT Math Next Generation</i> provides an individualized path for each student through differentiated scaffolded practice. After students take the Placement Assessment, they begin using the Instructional Software to learn their <i>Study Facts</i> and increase the speed at which they recall their <i>Focus</i> and <i>Fast Facts</i>. <i>Learn New Facts</i> and <i>Review</i> are instructional activities in which students engage throughout the program. Each activity follows a four-step process to help students create a memory association.</p> <p><u>Step 1—Fact Selection & Presentation</u></p> <p>The Software selects a fact pair, for example 4 x 6 and 6 x 4, from the student’s Fact Grid. The narrator reads the facts aloud and asks the student to repeat them. The student builds a memory association between the problem and the answer as a link between the visual and oral solution to the math fact.</p> <p><u>Step 2—Fact Model</u></p> <p>The Fact Model provides a visual model to help build a conceptual understanding of the fact’s solution. This helps the student understand what the fact represents numerically on a ten-grid, and how it relates to other facts.</p> <p><u>Step 3—Fact Typing</u></p> <p>The Software asks the student to type each presented pair of commutative facts and the answer from memory. The program automatically presents the fact pair again to refresh the student’s memory if he or she experiences challenges remembering the fact and answer.</p> <p><u>Step 4—Practice</u></p> <p>The fact pair is presented in the expanding recall model to solidify the memory relationship and develop the student’s quick recall of the facts. Students are required to type the answer from memory.</p> <p>During the second part of every lesson, the student plays a Fluency Game. These games provide an engaging platform to increase the speed at which the student recalls learned facts. Students are required to play at least one Fluency Game during each session. The program presents a set of problems, 60 by default, with emphasis on those facts that were most recently learned—<i>Focus Facts</i> and <i>Fast Facts</i>.</p> <p><i>FASTT Math</i> includes 12 Fluency Games to meet the interests of all students. The <i>STRETCH-To-Go</i> environment includes six extended learning games that help students to understand inverse relationships, recognized unknowns, and apply mathematical properties. The <i>FASTT Math Next Generation</i> adaptive technology manages the pace, level, and multimodal instruction, personalizing learning for each student.</p>

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<p>Provide high-quality professional development to classroom teachers, principals, and administrators that is designed to improve the instruction and assessment of limited English proficient children</p>	<p><u>FASTT Math Next Generation Implementation Training</u></p> <p>This training examines how <i>FASTT Math Next Generation</i> teaches automaticity and fluency and provides teachers with all the tools to successfully get started with the program. Participants learn how to implement the <i>FASTT Math Next Generation</i> instructional model, use report data to monitor progress and individualize instruction, and integrate <i>FASTT Math Next Generation</i> into the existing mathematics curriculum.</p> <p><u>FASTT Math Next Generation Interactive Webinar</u></p> <p>In this interactive webinar, teachers, coaches, and administrators learn how to get started with <i>FASTT Math Next Generation</i>, including understanding the program’s instructional method and underlying research, using the Teacher Dashboard to monitor progress, and using data to differentiate instruction.</p> <p><u>In-Classroom Support</u>—RECOMMENDED, at an additional cost</p> <p>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.</p>
<p>Assist parents in helping their children to improve their academic achievement and become active participants in the education of their children</p>	<p>A Parent Letter, available in English and Spanish, explains the goal of the <i>FASTT Math Next Generation</i> program, steps children will be completing as they learn, and ways to reinforce their learning at home. <i>STRETCH-To-Go</i> 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.</p>
<p>Develop and implement elementary or secondary school language instruction educational programs that are coordinated with other relevant programs and services</p>	<p><i>FASTT Math Next Generation</i> can be integrated with funds from state, local, private, and other sources. The federal funding programs for which it qualifies include:</p> <ul style="list-style-type: none"> ▪ Title IA—Improving Basic Programs ▪ Title I—School Improvement Grants (SIG) ▪ Title I—Supplemental Education Services (SES) ▪ Title III—English Language Acquisition ▪ 21st Century Community Learning Centers (21CCLC) ▪ Race to the Top—District (RTT-D) ▪ Investing In Innovation (i3)