






FASTT Math™


Aligns to 21st Century Community Learning Centers Criteria



The purpose of the 21st Century Community Learning Centers (21st CCLC) program is to create community learning centers that provide academic enrichment opportunities for children, particularly students who attend high-poverty and low-performing schools, to meet State and local student standards in core academic subjects, to offer students a broad array of enrichment activities that can complement their regular academic programs, and to offer literacy and other educational services to the families of participating children. The following chart details how *FASTT Math* can support the development of a 21st CCLC program. The criteria are drawn from the federal *21st Century Community Learning Centers Non-Regulatory Guidance*.


Key Criteria for 21 st CCLC Programs	 FASTT Math
<p>1. Activities that provide remedial education and academic enrichment to improve academic achievement</p>	<p><i>FASTT Math</i> 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.</p> <p><i>FASTT Math</i> is an intervention program, in English and Spanish, designed to support students in second grade and up in establishing fluency with basic math facts from numbers 0-9 or 0-12. With interactive software, comprehensive teacher resources, and individualized practice sheets, students gain automatic recall of basic addition, subtraction, multiplication, and division facts, allowing them to free up critical mental resources so that they can focus on higher-order math. With the research-validated <i>FASTT</i> system—Fluency and Automaticity through Systematic Teaching with Technology—computer-based instruction is automatically differentiated in customized daily sessions based on continuous assessments of students’ fluency.</p>
<p>2. Activities for limited English proficient students that emphasize language skills and academic achievement</p>	<p><i>FASTT Math</i> contains software features that support English-Language Learners’ development of math fact fluency. Math problems can be spoken aloud in English and Spanish. Students can listen repeatedly to any instructions they may have missed. The number of problems presented during instruction can be reduced for students who need more time to absorb new information. Students develop listening and speaking skills as they listen to instructions and say aloud new study facts.</p>


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<p>3. Activities involving telecommunications and technology education programs</p>	<p><i>FASTT Math</i> consists of two programs: the <i>FASTT Math</i> student software and <i>Scholastic Achievement Manager</i> (SAM), which is the learning management system for <i>FASTT Math</i>. <i>FASTT Math</i> is designed to help a student develop fluency with basic math facts in addition, subtraction, multiplication, and division, in number 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 to help him or her build a memory relationship between a problem and its answer and increase the speed at which the student responds to problems.</p> <p>The <i>FASTT Math</i> student software leads the student through a linear path of instruction and assessment. As part of the daily lesson, the student will be given a customized assignment; for example, to study new facts. In addition, the student will be required to complete one practice game per day. Each lesson should take about ten minutes to complete. <i>FASTT Math</i> has nine engaging practice games of two different types, as follows:</p> <p><u>Game Type One:</u> Five objects move continuously from one end of the screen to the other. Each object is linked to a math fact. The goal of the game is to answer each fact as fast as possible to keep the objects from reaching the other end of the screen. Correct responses are awarded points.</p> <p><u>Game Type Two:</u> Three facts are linked to one object moving from one end of the screen to the other. The faster the student answers each fact the faster the object moves. Correct responses are awarded points and bonus points.</p>
<p>4. Activities to promote parental involvement and family literacy</p>	<p>The <i>FASTT Math</i> program has the following parent support materials:</p> <ul style="list-style-type: none"> ▪ Parent letter in English or Spanish that introduces the <i>FASTT Math</i> program to parents and lets them know that students can readily share their progress. ▪ Student Fact Grid reports provide a copy of a student's fact grid displaying the student's fluency status with all facts in the operation. ▪ Award Certificates can be printed as students complete different levels of the fact grid. The certificates can be shared with parents and uses as examples of student achievement. <p>Customized worksheets can be generated that students can bring home as part of the homework that parents can support.</p>

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<p>5. Programs that provide assistance to students who have been truant, suspended, or expelled to allow the students to improve their academic achievement</p>	<p><i>FASTT Math</i> is a highly individualized systematic math fact fluency intervention that provides students with the foundations needed to be successful in constructing their mathematical thinking. <i>FASTT Math</i> lets student discover the edge of their competence in math fact fluency. It then engages them in the systematic construction of individual mastery which can be tracked and rewarded. The program helps students elaborate each fact symbolically, spatially, and verbally—matching the most recent cognitive research on fact acquisition. The feedback system in the program supports constant self-evaluation of progress. <i>FASTT Math</i> helps students to become fluent with basic math facts so that they can free mental resources to explain, elaborate, and evaluate their mathematical reasoning for higher-order math.</p> <p>When students are learning new facts or playing a game in <i>FASTT Math</i>, they are rewarded with points. Students feel a deep sense of accomplishment as they master math facts and watch them recorded on the <i>FASTT Math Fact Grid</i>. Students compete with their own previous scores, which focuses them on progressive self-improvement. When a student reaches a new level in the software, the <i>FASTT Math Manager</i> notifies the teacher, who can print an award certificate.</p>
<p>6. Programs and activities that follow <i>principles of effectiveness</i> by being based on:</p> <ul style="list-style-type: none"> ▪ Assessment of objective data regarding need for before- and after-school programs ▪ Established set of performance measures aimed at ensuring the availability of high-quality academic enrichment opportunities ▪ If appropriate, scientifically based research that provides evidence that the program or activity will help students meet state and local achievement standards 	<p><i>FASTT Math</i> 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.</p> <p><i>FASTT Math</i> uses this effective procedure:</p> <ol style="list-style-type: none"> 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. <p style="text-align: right;"><i>(Continued)</i></p>

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<p>Programs and activities that follow <i>principles of effectiveness</i> Continued</p>	<ul style="list-style-type: none"> 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. <i>FASTT Math</i> 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. <p><i>FASTT Math</i> 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. The Fact Grid shows the student’s fluency status for each fact in the assigned operation. The Fact Grid displays all the facts in the operation and fact range the student is assigned. Facts are presented in three states:</p> <ol style="list-style-type: none"> 1. <u>Fast Facts</u>—are facts that the student can answer correctly in 0.8 seconds or less. The student demonstrated fluency with these facts in either the Placement Assessment or a subsequent program assessment. 2. <u>Focus Facts</u>—are the facts the student is currently working on. The student received instruction on these facts and he or she can provide a correct answer in 1.25 seconds or less. 3. <u>Study Facts</u>—are non-fluent facts. The student repeatedly gave slow or incorrect responses to these facts during the Placement Assessment, and the facts have not yet been presented for instruction.

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<p>7. The eligible entity has experience or promise of success in providing educational and related activities that will complement and enhance the academic performance, achievement, and positive youth development of the students.</p>	<p>The principles of <i>FASTT Math</i> have been validated over several years of research with more than 400 students. This research with math-delayed children has shown that the <i>FASTT Math</i> approach can be extremely powerful for developing fluency with basic math facts. Generally, the findings show that when used daily, for approximately ten minutes, most math-delayed children develop fluency with all basic facts in addition, subtraction, multiplication, and division. The key to success is in the consistent use of the program. Students who used the program regularly did better than students who were only occasional users.</p> <p>In a study conducted by Hasselbring and Goin (1988), three groups of students were matched for age, sex, and race. Two of the groups consisted of math-delayed students and the remaining group consisted of non math-delayed students. In the experiment, one of the math-delayed groups (Math-Delayed Experimental) received an average of 54 ten-minute sessions on the software program for addition, the other two groups (Non-Math-Delayed and Math-Delayed) Contrast received only traditional fluency instruction delivered by their classroom teachers. The data shows that the math-delayed students receiving instruction with the <i>FASTT Math</i> approach gained, on the average, 24 new fluent facts while their math-delayed peers receiving traditional instruction gained no new facts and their non-math-delayed peers gained only 8 new facts. When the experimental students were tested four months after the post-test following summer vacation, the students regressed by only 4 facts, indicating that once facts become fluent through this method, they are retained at a high level.</p> <p> For specific information on the research and efficacy for <i>FASTT Math</i>, please refer to <i>Research Foundation & Evidence of Effectiveness for FASTT Math</i>, available upon request.</p>
<p>8. To sustain a quality program, staff delivering academic support and enrichment services should be provided ongoing training and learning opportunities.</p>	<p>Scholastic will provide a half-day in-person implementation training for teachers. This training examines how <i>FASTT Math</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</i> instructional model, use report data to monitor progress and individualize instruction, and integrate <i>FASTT Math</i> into the existing mathematics curriculum.</p>

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<p>9. Academic activities are aligned with the school's curriculum in the core subject areas.</p>	<p><i>FASTT Math</i> is an intervention program designed to support students in second grade and above in establishing fluency with basic math facts from numbers 0-9 and 0-12. With interactive software, comprehensive teacher resources, and individualized practice sheets, students gain automatic recall of addition, subtraction, multiplication, and division facts, allowing them to free up critical mental resources so that they can focus on higher-order math. With the research-validated <i>FASTT</i> system—Fluency and Automaticity through Systematic Teaching with Technology—computer-based instruction is automatically differentiated in customized daily sessions based on continuous assessments of students' fluency.</p> <p><i>FASTT Math</i> aligns to the Curriculum Focal Points for number and operations and to the Final Report by the National Math Panel that stresses the importance of developing quick recall of basic math facts in addition and related subtraction facts and multiplication and related division facts. This intervention system provides the targeted dose to fill fluency gaps for students. Additional information can be found at www.tomsnyder.com/standards.</p>
<p>10. Program was developed and will be carried out in active collaboration with the schools the students attend.</p>	<p>The <i>FASTT Math</i> 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 <i>Fact Fluency Foundations Guide</i>, 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.</p>
<p>11. The program includes a plan for how the community learning center will continue after funding under this part ends.</p>	<p><i>FASTT Math</i> can be integrated with specific technology-related school activities using <i>Ed Tech</i> funds and money from state, local, foundation, and other sources. The federal funding programs for which <i>FASTT Math</i> qualifies include:</p> <ul style="list-style-type: none"> ▪ Title I, Part A – Improving Basic Programs ▪ Title I – Supplemental Educational Services ▪ Title IID—Enhancing Education through Technology (Formula) ▪ Title III—English Language Acquisition ▪ 21st Century Community Learning Centers ▪ Enhancing Education through Technology ▪ IDEA, Part B ▪ IDEA, <i>Response to Intervention</i>

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<p>12. The program or activity shall undergo a periodic evaluation to assess its progress toward achieving its goal of providing high-quality opportunities for academic enrichment.</p>	<p>FASTT Math includes several periodic assessments that check student progress continuously and adjust instruction accordingly.</p> <ul style="list-style-type: none"> ▪ <u>Mastery Assessments</u> determine if a student has developed fluency with the group of math facts presented in the software. Students participate in these assessments depending on how many facts they need to master, and how much time they have spent on the software and the lessons they have completed. After every 60 minutes of instructional time spent on the software, this tool determines which Focus Facts students can retrieve in .8 of a second or less. ▪ <u>Challenge Assessments</u> show whether the student is able to respond fluently to facts that will be presented in the next level. Students may have been tested on these same facts in the Placement Assessment. The Challenge Assessments account for what the student may have learned and the fact fluency they may have gained outside of using the software. ▪ <u>The Special Challenge Assessment</u> is presented when a student moves from the 0-9 to the 0-12 number range within the same operation. The purpose is to evaluate fluency of newly assigned fact in the 10s, 11s, and 12s. <p>Through the <i>Scholastic Achievement Manager</i> (SAM) teachers and administrators can generate reports on individual students, groups of students, an entire class, a grade, the whole school, or district. Reports provide information on a variety of performance measures, including fact fluency status, progress, and response to intervention, among others. In addition, SAM will alert teachers when it identifies a problem, like low usage or slow progress, or when there is reason to celebrate, like achievement of a new level in fact fluency.</p>