





Marilyn Burns Classroom Math Libraries Aligns to Title I, Part A


The purpose of *Title I, Part A – Improving Basic Programs* is to ensure that children in high-poverty schools meet challenging State academic content and student achievement standards. These schools must develop a comprehensive plan to improve teaching and learning. The following chart shows how **Marilyn Burns Classroom Math Libraries** can support a *Title I* program. The criteria are drawn from the Federal *Title I Final Rules and Regulations* posted at:


<http://www.ed.gov/policy/elsec/regs/title1/fedregister.html>


Key Criteria for Title I, Part A Funding	 Marilyn Burns Classroom Math Libraries
<p>1. Provide opportunities for all students to meet the State's proficient and advanced levels of student academic achievement, particularly in the areas of math, reading/language arts, and science</p>	<p>The <i>Marilyn Burns Classroom Math Libraries</i> provide high-quality, engaging children's literature that contains mathematic themes. Each <i>Math Library</i> equips teachers with 25 titles and instructional support for using the literature to teach mathematics. Children learn key math concepts and skills while developing an appreciation for both math and literature.</p> <p>Each of the five distinct Math Libraries—for Kindergarten, Grade 1, Grade 2, Grade 3, and Grades 4-6—teach skills reflected in state and district mathematics frameworks. They specifically address the math standards as described by the National Council of Teachers of Mathematics (NCTM) in <i>Principles and Standards for School Mathematics</i> (2000):</p> <p><i>Content standards:</i></p> <ul style="list-style-type: none"> ▪ Number and Operations ▪ Algebra ▪ Geometry ▪ Measurement ▪ Data Analysis and Probability <p><i>Process standards:</i></p> <ul style="list-style-type: none"> ▪ Problem Solving ▪ Reasoning and Proof ▪ Communication ▪ Connections ▪ Representation <p>In addition, the <i>Math Libraries</i> support the development of essential reading skills:</p> <ul style="list-style-type: none"> ▪ The books are rich in content-area vocabulary and concepts. ▪ Teachers model fluent reading as they read aloud the books to the class. ▪ Teachers ask children questions about the text that require them to make inferences, draw upon prior knowledge, and connect lessons to real world situations. <p style="text-align: right;"><i>(Continued)</i></p>


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<p>Provide opportunities for all students to meet the State's proficient and advanced levels of student academic achievement, Continued</p>	<p>Teachers use this effective instructional design to teach and reinforce students' understanding of essential math skills and concepts:</p> <ul style="list-style-type: none"> ▪ Read the book aloud ▪ Lead a class discussion of the book ▪ Reread the book, making the math connection by engaging students with the lesson ▪ When appropriate, give a follow-up assignment for students to work on individually or in pairs ▪ Make the children's book available for students to revisit on their own or take home to enjoy with their families
<p>2. Address the needs of all students in the school, particularly the needs of low-achieving students and those at risk of not meeting the State's student academic standards</p>	<p>Books in the <i>Marilyn Burns Classroom Math Libraries</i> stimulate children's imaginations and make learning mathematics enjoyable. This provides low-achieving, as well as at-risk students with valuable motivation to increase their achievement. Students learn standards-based math skills that connect to the core math curriculum.</p> <p>During lessons, teachers read the books aloud. This format allows all students, including those with poor decoding skills, to be exposed to and learn math concepts and vocabulary from the literature. After the read-aloud, students solve problems by engaging in topic-related activities and class discussions. Throughout the lesson, teachers have multiple opportunities to provide students with instruction that is targeted to their level of understanding, as well as to offer struggling students reassurance.</p> <p>Each <i>Math Library</i> provides five copies of five of the titles, which teachers can use during small-group instruction. This helps teachers differentiate instruction and provide low-achieving and at-risk students with more attention.</p> <p>The lessons and literature support students with different learning styles and needs.</p> <ul style="list-style-type: none"> ▪ The read-aloud format aids auditory learners and those with below-level reading proficiency. ▪ Visual learners and struggling students benefit from visual representations of concepts, when possible, and quality illustrations that connect to the text. ▪ Engaging hands-on activities provide kinesthetic, tactile, and visual experiences. ▪ English-language learners develop their oral language from listening to vocabulary- and concept-rich text, as well as by participating in class discussions and activities.


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<p>3. Close the achievement gap between high- and low-performing children, especially the achievement gaps between minority and nonminority students, and between disadvantaged children and their more advantaged peers.</p>	<p>The <i>Marilyn Burns Classroom Math Libraries</i> provide effective instruction and enriching materials that can help close the achievement gap between high- and low-performing students, including those who are minorities and/or disadvantaged.</p> <p>Marilyn Burns, a classroom teacher, children's book author, and professional development designer, chose the books for each <i>Math Library</i> based on the appropriateness of the math content to address important grade-level topics. She also evaluated books for the quality of their content and illustrations. The classroom-tested lessons provide an engaging forum for students to learn essential math skills.</p> <p>The <i>Math Libraries</i> concentrate on providing students with lessons in Number and Operations, the cornerstone of Kindergarten-Grade 6 mathematics. Lessons address three essential aspects of arithmetic instruction—computation, number sense, and problem solving. Students learn skills in an interactive, supportive environment that can be instrumental in increasing low-performing students' achievement. Teachers can assess students' progress by evaluating individual assignments.</p> <p>Throughout the read-aloud time, instruction, and activities, teachers who are using the <i>Math Libraries</i> scaffold students' learning. Researchers have recognized that individual scaffolding by the teacher should be included in supplemental learning environments for below-grade level readers in order to close the literacy achievement gap (Block & Reed, 2004).</p> <p>The <i>Math Libraries</i> provide disadvantaged children, many of who do not have access to books at home, with exposure to high-quality literature during read-aloud sessions. According to research, reading aloud serves to expand children's vocabulary, increase comprehension, foster positive reading attitudes, and create a community of readers (Chambers, 1996; Worthy, Broaddus & Ivey, 2001).</p>

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<p>4. Use effective methods and instructional practices that are based on scientifically based research and that:</p> <ul style="list-style-type: none"> ▪ Strengthen the core academic program ▪ Provide an enriched and accelerated curriculum ▪ Increase the amount and quality of learning time, such as providing an extended school year, before- and after-school programs, and summer programs and opportunities 	<p>Strengthen the core academic program</p> <p>Each <i>Marilyn Burns Classroom Math Library</i> includes instruction, processes, and materials that scientifically based research has shown to be effective in increasing academic achievement. The program, which reflects NCTM standards, teaches grade-level math skills that integrate with a core curriculum. A partial listing of skills that children learn includes the following:</p> <table border="0"> <tr> <td style="vertical-align: top;"> <p><u>Kindergarten Library:</u></p> <ul style="list-style-type: none"> ▪ Bigger, smaller ▪ Counting ▪ Counting backward ▪ Addition ▪ Adding doubles ▪ Addition combinations ▪ Subtraction ▪ Graphing ▪ Patterns ▪ Shape recognition ▪ Story problems ▪ Time <p><u>Grade 2 Library:</u></p> <ul style="list-style-type: none"> ▪ Addition ▪ Subtraction ▪ Multiplication ▪ Division ▪ Fractions ▪ Graphing ▪ Length ▪ Money ▪ Permutations ▪ Skip counting ▪ Sorting ▪ Shapes <p><u>Grades 4-6 Library:</u></p> <ul style="list-style-type: none"> ▪ Multiplication ▪ Division, remainders ▪ Algebraic equivalence ▪ Area, perimeter ▪ Averages ▪ Coordinate graphing ▪ Frequency distribution ▪ Logical reasoning ▪ Pounds, ounces ▪ Roman numerals ▪ Tessellations ▪ Properties of numbers </td><td style="vertical-align: top;"> <p><u>Grade 1 Library:</u></p> <ul style="list-style-type: none"> ▪ Counting backward ▪ Addition ▪ Subtraction ▪ Doubles ▪ Graphing ▪ Money ▪ Number sense ▪ Ordinal numbers ▪ Place value ▪ Shape recognition ▪ Time ▪ Weight <p><u>Grade 3 Library:</u></p> <ul style="list-style-type: none"> ▪ Multiplication ▪ Division ▪ Estimation, large numbers ▪ Fractions ▪ Length ▪ Money ▪ Number sense ▪ Mental computation ▪ Polygons ▪ Proportional reasoning ▪ Square numbers ▪ Place Value </td></tr> </table> <p style="text-align: right;"><i>(continued)</i></p>	<p><u>Kindergarten Library:</u></p> <ul style="list-style-type: none"> ▪ Bigger, smaller ▪ Counting ▪ Counting backward ▪ Addition ▪ Adding doubles ▪ Addition combinations ▪ Subtraction ▪ Graphing ▪ Patterns ▪ Shape recognition ▪ Story problems ▪ Time <p><u>Grade 2 Library:</u></p> <ul style="list-style-type: none"> ▪ Addition ▪ Subtraction ▪ Multiplication ▪ Division ▪ Fractions ▪ Graphing ▪ Length ▪ Money ▪ Permutations ▪ Skip counting ▪ Sorting ▪ Shapes <p><u>Grades 4-6 Library:</u></p> <ul style="list-style-type: none"> ▪ Multiplication ▪ Division, remainders ▪ Algebraic equivalence ▪ Area, perimeter ▪ Averages ▪ Coordinate graphing ▪ Frequency distribution ▪ Logical reasoning ▪ Pounds, ounces ▪ Roman numerals ▪ Tessellations ▪ Properties of numbers 	<p><u>Grade 1 Library:</u></p> <ul style="list-style-type: none"> ▪ Counting backward ▪ Addition ▪ Subtraction ▪ Doubles ▪ Graphing ▪ Money ▪ Number sense ▪ Ordinal numbers ▪ Place value ▪ Shape recognition ▪ Time ▪ Weight <p><u>Grade 3 Library:</u></p> <ul style="list-style-type: none"> ▪ Multiplication ▪ Division ▪ Estimation, large numbers ▪ Fractions ▪ Length ▪ Money ▪ Number sense ▪ Mental computation ▪ Polygons ▪ Proportional reasoning ▪ Square numbers ▪ Place Value
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<p>Use effective methods and instructional practices that are based on scientifically based research, Continued</p>	<p>In addition, children strengthen essential reading skills in three of the five areas identified by the National Reading Panel (2000) as key to reading success:</p> <ul style="list-style-type: none"> ▪ <i>Vocabulary</i>—The <i>Marilyn Burns Classroom Math Libraries</i>’ fiction and nonfiction books, available in a variety of genres and topics, contain rich content-area words. ▪ <i>Fluency</i>—Instruction provides teachers with multiple opportunities to model fluency as they read and reread texts aloud. ▪ <i>Comprehension</i>—Teachers pose questions to the students that stimulate their critical thinking, problem solving, and understanding of the text. Children build background knowledge and connect math concepts to their prior experiences. <p>Teachers read aloud each of the <i>Math Libraries</i>’ books. Reading aloud to children is a proven way to help children develop vocabulary. It can also enhance children’s background knowledge of new concepts that may appear in both oral and written language (Lyon, 2002).</p> <p>Provide an enriched and accelerated curriculum</p> <p>The <i>Marilyn Burns Classroom Math Libraries</i>’ unique approach of connecting math and literature can broaden children’s perspective about learning.</p> <ul style="list-style-type: none"> ▪ Students for whom math is their first love learn to look at books in a new way and appreciate literature. ▪ Students who love to read, but who are “math-wary,” are helped to experience the wonder of mathematics in the same way they already enjoy the wonder of books. ▪ Students who are not confident about their math and/or reading abilities can learn in a highly interesting and supportive environment. <p>The <i>Math Libraries</i> program enriches both the math and reading curricula by effectively:</p> <ul style="list-style-type: none"> ▪ Teaching children important and basic math concepts and skills ▪ Motivating students to think and reason mathematically ▪ Engaging students in problem-solving experiences ▪ Building children’s appreciation for both math and literature ▪ Exposing students to a variety of content-area vocabulary, story themes, and literature genres. <p style="text-align: right;"><i>(continued)</i></p>

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<p>Use effective methods and instructional practices that are based on scientifically based research, Continued</p>	<p>The <i>Marilyn Burns Classroom Math Libraries</i>' research- and standards-based strategies help children deepen their understanding of math concepts and accelerate their learning. In the <i>Math Libraries</i> program, children:</p> <ul style="list-style-type: none"> ▪ <i>Listen to stories that spark their imaginations, allow them to see visual representations of math concepts, and peak their interest.</i> <p>The NCTM (2000) indicated that using suitable curricular materials and appropriate instructional tools can create rich settings for learning.</p> <ul style="list-style-type: none"> ▪ <i>Build on their prior knowledge</i> <p>Schoenfeld (1988) noted that math makes more sense and is easier to apply when students connect new knowledge to existing knowledge in meaningful ways.</p> <ul style="list-style-type: none"> ▪ <i>Think, reason, and solve problems</i> <p>The NCTM (2000) indicated that mathematical thinking and reasoning skills, including making conjectures and developing sound deductive arguments, are important because they serve as a basis for developing new insights and promoting further study.</p> <ul style="list-style-type: none"> ▪ <i>Participate in class discussions that provide interactive forums for sharing ideas</i> <p>Wells and Chang-Wells (1992) found that children develop more complex understandings of stories by talking about them with others.</p> <ul style="list-style-type: none"> ▪ <i>Apply taught concepts to solve math problems during activities that are or will be relevant to children's lives outside of the lesson</i> <p>The NCTM (2000) stresses that children who can understand and do mathematics have significantly enhanced educational and career opportunities in their present and future.</p>

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<p>Use effective methods and instructional practices that are based on scientifically based research, Continued</p>	<p>Increase the amount and quality of learning time</p> <p>The <i>Marilyn Burns Classroom Math Libraries</i> can be effectively used in extended learning environments to provide academic enrichment. Books and corresponding lessons support grade-level math skills development leading to increased student achievement. Math Libraries are available for Kindergarten, Grade 1, Grade 2, Grade 3, and Grades 4-6.</p> <p>Each lesson specifies which math standards and topics it covers, making it easy for teachers and staff members to coordinate lesson sequence with districts' core math programs. The <i>Math Libraries</i>' design allows lessons to be flexibly incorporated into a learning environment outside of the regular school day.</p> <ul style="list-style-type: none"> ▪ The books and lessons can be used in small or large groups, depending on students' needs and the format of the learning program. ▪ After reading a book aloud, teachers can immediately proceed to the mathematics lesson or delay it until the next time students' will be in attendance. ▪ Lessons have enough mathematical potential to last for a series of investigations. ▪ Teachers can reread and revisit the book to fit students' needs. <p>The standards-based <i>Math Libraries</i> provide children with many and varied opportunities to develop their math, listening, speaking, and reading skills.</p> <ul style="list-style-type: none"> ▪ Lessons incorporate teacher-directed instruction and interactive group activities that enhance students' math learning. Teachers can also assign challenging follow-up practice. ▪ Class discussions stimulate students to develop their reasoning and mathematical problem-solving skills while they listen to and respond to one another's ideas. ▪ Listening to books as the teacher reads them aloud helps children build reading fluency, vocabulary, and comprehension. ▪ Students can share the books with their families to extend their learning at home. ▪ Although the books are designed to be read aloud, many of them are appropriate for independent reading.

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5. Provide high-quality and ongoing professional development that aligns with the State's academic standards	<p>Each of the grade-level <i>Marilyn Burns Classroom Math Libraries</i> provides a Teacher Handbook, which contains classroom-tested, standards-based lessons for the taught books. A model lesson presents effective teaching strategies in depth along with questions and comments teachers can expect from students. The Teacher Handbook also supplies effective read-aloud strategies.</p> <p>Each lesson includes pertinent information that can help teachers effectively implement lessons. These are:</p> <ul style="list-style-type: none"> ▪ Background information about the book, including title, author, and illustrator ▪ Math standard(s) and topic(s) covered in the lesson and book, as well as how the standard(s) and topic(s) connect to the core math curriculum ▪ Materials needed, if any ▪ Synopsis of the book ▪ Thumbnail description of the lesson ▪ Lesson-specific instructional ideas ▪ Follow-up activities, where appropriate, to support small-group instruction <p>The teaching support that is presented in the Teacher Handbook, along with the high-quality literature, provides teachers with the tools they need to successfully and creatively use the <i>Math Libraries</i> to supplement the core math curriculum. The strategies and books also help teachers who are reluctant to teach math to build on their strengths for teaching reading and language arts. Teachers using the <i>Math Libraries</i> increase their confidence and enthusiasm for teaching mathematics.</p>
6. Involve parents in the planning, review, and improvement of the schoolwide program plan	<p>Each <i>Math Library</i> contains 45 high-quality books (25 individual titles plus four additional copies of five of the titles) that children can take home and share with their families.</p>
7. If appropriate, coordinate with other funding programs, including <i>Reading First</i>	<p><i>Title I, Part A</i> funding for the <i>Math Libraries</i> can be coordinated with money from state, local, and other sources. The federal funding programs for which these <i>Math Libraries</i> are applicable include:</p> <ul style="list-style-type: none"> ▪ Title IA—Supplemental Educational Services ▪ Title III—English Language Acquisition ▪ 21st Century Community Learning Centers ▪ IDEA, Part B ▪ IDEA, <i>Response to Intervention</i>