

# Kansas Multi-Tier System of Supports

- Pre-Implementation Supplement for  
Preschool Math

August 2013



[www.kansasmstss.org](http://www.kansasmstss.org)

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## Introduction to Document

The *Kansas Multi-Tier System of Supports: Structuring Guide* has been created to assist schools in creating the structures necessary to begin the implementation of a Multi-Tier System of Supports (MTSS). This document serves as a guide for schools working with MTSS Trainers (a current list can be found at [www.kansasmtss.org](http://www.kansasmtss.org)) or as a do-it-yourself guide for schools taking on the challenge themselves. This document provides an explanation of why each component is important as well as suggests steps that have helped other schools successfully complete the tasks and decision making necessary for creating structures that support a sustainable system. Content area specific documents for reading, mathematics, and behavior are companion documents to this one, providing information specific to each content area. All Kansas MTSS documents are aligned with the *Kansas Multi-Tier System of Supports: Innovation Configuration Matrix (ICM)*, which describes the critical components of a MTSS and what each looks like when fully implemented, and the *Kansas Multi-Tier System of Supports: Research Base*, which provides a basic overview of the research support for a MTSS.

## Acknowledgements

A significant commitment of time and energy from numerous Kansas educators, their districts, organizations and partners made this document possible. Their efforts to learn and help others understand what it takes to make a MTSS a reality within schools is reflected in this document. This grassroots effort on the part of Kansas educators indicates a commitment to meeting the needs of every student and sharing wisdom from the field and the research. As the list of individuals and districts that have contributed to this effort over the past 10 years has become too long to detail, a collective expression of gratitude is offered here to everyone who has contributed to the concepts, ideas, and knowledge that are reflected in all Kansas MTSS documents.

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## MTSS PRE-IMPLEMENTATION SUPPLEMENT FOR PRESCHOOL MATH

This guide is intended to direct an elementary leadership team that includes preschool representation through the steps of MTSS implementation when a preschool core math curriculum has not been identified. In this case, the implementation steps for the preschool will actually start with pre-implementation in which the preschool identifies and receives training to implement a preschool core math curriculum. This guide addresses each of the MTSS math implementation steps in terms of what the leadership team's preschool representative will be doing/learning and/or ways to utilize data gathered at that specific step to inform decisions about preschool core curriculum and professional development.

### Math Implementation

#### Preschool

##### Getting Started

The use of an in-depth, researched, and evidenced based core math curriculum that is implemented daily within preschool classrooms may be a new concept for many programs. For this reason Building Leadership Teams (BLTs) integrating preschool into MTSS may find that time and effort needs to be focused on identifying and implementing a preschool core math curriculum with fidelity before the preschool program is able to move into the MTSS implementation steps as they are described in the Building Leadership Team Implementation Guide Mathematics.

Before beginning the screening and progress monitoring process:

- Identify and implement core math curriculum. (Significant support to staff may need to be provided.)
- Identify and implement curriculum based assessments for core math curriculum.
- Identify, purchase, and train staff to administer preschool universal screener and make plans for initial implementation.

(It may take a full year before the preschool is ready to begin the universal screening process.)

In situations where the elementary building is in a position to move into the formal implementation of MTSS and the preschool program is not, a preschool representative should still be included on the BLT and work with that team through the elementary implementation steps. Including a preschool representative on the team will help position both the preschool program and the early elementary grades to utilize data even though the preschool and elementary school are at different points in the process. This guide was created to provide a general understanding of the primary purpose and potential benefits of including preschool representation on the team at each step of elementary implementation and should be used in conjunction with the *Building Leadership Team Implementation Guide Mathematics*. Teams should refer first to each step outlined in the *BLT Implementation Guide Mathematics* and then review the corresponding step in this supplement for further guidance regarding preschool involvement. Before moving into the elementary implementation steps,

the BLT should briefly review the similarities and differences presented in the chart below titled “Comparison of Elementary and Preschool Implementation Process.”

### Comparison of Elementary and Preschool Implementation Process

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS (IN THE FUTURE)
<b>STEP 1:</b> <b>Review and validate universal screening data</b>	Universal Screeners: <ul style="list-style-type: none"> <li>• AIMSweb</li> <li>• STAR Math Enterprise</li> <li>• easyCBM</li> </ul>	Universal Screeners: <ul style="list-style-type: none"> <li>• PNI</li> <li>• AIMSweb</li> <li>• EARLI</li> </ul>
<b>STEP 2:</b> <b>Analyze data</b>	AIMSweb <ul style="list-style-type: none"> <li>• Missing Number &amp; Quantity Discrimination (K-1)</li> <li>• Computation &amp; Concepts/Application (2-12)</li> </ul> STAR Math Enterprise and easyCBM <ul style="list-style-type: none"> <li>• Focal Points/domains</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze classroom level data in comparison to national or local norms</li> <li>• Review data in conjunction with curriculum based assessments of core curriculum</li> <li>• Initially look at scores falling below 30% on national or local norms</li> </ul>
<b>STEP 3:</b> <b>Use data to group students</b>	Kdg-Grade 12 <ul style="list-style-type: none"> <li>• Test down for instruction level.</li> <li>• Administer placement test from intervention curriculum (if available) or refer to Student Instructional Planning Report (AIMSweb).</li> <li>• Students are grouped based on intensity level, instruction level, and either results of placement test or lowest domain/focal point.</li> </ul>	<ul style="list-style-type: none"> <li>• Preschool students receive differentiated instruction in area of weakness or additional support through small groups, targeted instruction in learning centers, and/or embedded learning activities.</li> <li>• Interventions will be identified through problem solving within the collaborative team rather than “data grouping.”</li> </ul>
<b>STEP 4:</b> <b>Determine focus of intervention</b>	<ul style="list-style-type: none"> <li>• Refer to placement test of intervention curriculum, or Student Instructional Planning Report (AIMSweb), or consult the universal screener, noting lowest domains or focal points (STAR Math Enterprise or easyCBM).</li> </ul>	<ul style="list-style-type: none"> <li>• The need for differentiated instruction for individual students will be identified through a learning trajectory that is part of or consistent with the core math curriculum scope and sequence.</li> </ul>
<b>Step5:</b> <b>Determine instructional level for progress monitoring and intervention</b>	Intervention Materials for Early Numeracy (K-1) It is important to realize that students who score below the On Track range in oral counting and number identification will need to work on those skills in addition to the instructional focus of the group. Some examples of curricular materials for early numeracy instruction are: <ul style="list-style-type: none"> <li>• Math Rescue (multi-sensory, Sopris West)</li> <li>• Practicing Basic Skills in Math (Sopris West)</li> <li>• Number Worlds (McGraw-Hill)</li> <li>• East Carolina Early Numeracy Curriculum (East Carolina university, Scott Methe, author)</li> </ul>	<ul style="list-style-type: none"> <li>• Differentiated instruction within Core</li> <li>• Supplemental intervention materials (ex: Number Worlds)</li> </ul>
<b>STEP 6:</b> <b>Analyze progress monitoring data</b>	<ul style="list-style-type: none"> <li>• Is student making adequate progress?</li> </ul>	<ul style="list-style-type: none"> <li>• BLT or collaborative team may follow the general guidance provided for elementary/secondary; however, progress monitoring data is collected monthly</li> </ul>
<b>STEP 7:</b> <b>Update student tracking information</b>	<ul style="list-style-type: none"> <li>• Update Student Intervention Log and Progress Monitoring Graph</li> </ul>	<ul style="list-style-type: none"> <li>• Update Student Intervention Log and Progress Monitoring Graph</li> </ul>

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS (IN THE FUTURE)
<b>STEP 1: review and validate universal screening data</b>	Universal Screeners: <ul style="list-style-type: none"> <li>• AIMSweb</li> <li>• STAR Math Enterprise</li> <li>• easyCBM</li> </ul>	Universal Screeners: <ul style="list-style-type: none"> <li>• PNI</li> <li>• AIMSweb</li> <li>• EARLI</li> </ul>

**STEP 1: Monitor universal screening**

The methods used to analyze and validate preschool universal screening data are very similar to the elementary process. Participation by the preschool representative in this activity at the elementary level will therefore provide opportunities to practice this step and increase background knowledge that will be useful when this step is applied to preschool implementation. In addition, the expertise gained may help the team to analyze the similarities and differences between elementary and preschool assessment tools and therefore provide a greater focus on issues that are specific to preschool implementation.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
<b>STEP 2:</b> <b>Analyze data</b>	AIMSweb <ul style="list-style-type: none"> <li>• Missing Number &amp; Quantity Discrimination (K-1)</li> <li>• Computation &amp; Concepts/Application (2-12)</li> </ul> STAR Math Enterprise and easyCBM <ul style="list-style-type: none"> <li>• Focal Points/domains</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze classroom level data in comparison to national or local norms</li> <li>• Review in conjunction with curriculum based assessments of core curriculum</li> <li>• Initially look at scores falling below 30% on national or local norms</li> </ul>

**STEP 2: Analyze data**

The methods used to analyze preschool universal screening data are very similar to the process outlined for the elementary school; however, data is primarily analyzed at the classroom level rather than at a program or building level. Participation in this activity by preschool representatives at the elementary level will provide opportunities to practice this step and increase background knowledge that will be useful at a later date when this step is applied to preschool implementation. In addition, the expertise gained at this level may enhance the ability to critically analyze the similarities and differences between elementary and preschool assessment tools and lead to a greater focus on issues that are specific to preschool implementation.

Analysis of elementary data may indicate areas within early numeracy that if addressed at the preschool level could decrease the number of children entering kindergarten and first grade with insufficient skills (as identified by the universal screening). Such information could be used to identify the need for professional development in the preschool program (and community preschools if appropriate/feasible), used in the identification of supplemental preschool math curriculum, and/or to identify instructional strategies or methods that may also support children’s early numeracy at entry into kindergarten.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
<b>STEP 3: Use data to group students</b>	Kdg-Grade 12 <ul style="list-style-type: none"> <li>• Test down for instruction level.</li> <li>• Administer placement test from intervention curriculum (if available) or refer to Student Instructional Planning Report (AIMSweb).</li> <li>• Students are grouped based on intensity level, instruction level, and either results of placement test or lowest domain/focal point.</li> </ul>	<ul style="list-style-type: none"> <li>• Preschool students receive differentiated instruction in area of weakness or additional support through small groups, targeted instruction in learning centers, and/or embedded learning activities.</li> <li>• Interventions will be identified through problem solving within the collaborative team rather than “data grouping.”</li> </ul>

**STEP 3: Identify students in need of differentiated instruction**

The use of data to group students for additional instructional support at the elementary level is significantly different than the process used in preschool implementation to determine children who need differentiated instructional support. However, participation by the preschool representative in this activity will increase an understanding of the need to intensify instruction in critical skill areas. Although the process is different, the outcome of this implementation step for preschool is similar, in that specific children will be identified to receive additional support (through differentiated instruction) in critical skill areas.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
<b>STEP 4: Determine focus of intervention</b>	<ul style="list-style-type: none"> <li>• Refer to placement test of intervention curriculum or Student Instructional Planning Report (AIMSweb), or consult the universal screener, noting lowest domains or focal points (STAR Math Enterprise or easyCBM)</li> </ul>	<ul style="list-style-type: none"> <li>• The need for differentiated instruction for individual students will be identified through a learning trajectory that is part of or consistent with the core math curriculum scope and sequence</li> </ul>

#### STEP 4: Determine focus of intervention

To determine specific interventions for individual preschool students, the team will review the universal screening data along with the curriculum based assessments that have been administered in conjunction with the core curriculum. This step highlights the importance of implementing the core curriculum and related assessments with fidelity. Preschool representatives can use this information to stress the importance of conducting curriculum-based assessments as part of the core curriculum, thereby increasing the probability of successfully implementing this step with the preschool program at a later date.

At the elementary level this step is significantly different than how it is applied in preschool implementation. Participation by preschool representatives in this step will provide them with a solid understanding of the similarities and differences between preschool and elementary school implementation.

NOTES:



IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
<p><b>Step5: Determine instructional level for progress monitoring and intervention</b></p>	<p>Intervention Materials for Early Numeracy (K-1)</p> <p>It is important to realize that students who score below the On Track range in oral counting and number identification will need to work on those skills in addition to the instructional focus of the group. Some examples of curricular materials for early numeracy instruction are:</p> <ul style="list-style-type: none"> <li>• Math Rescue (multi-sensory, Sopris West)</li> <li>• Practicing Basic Skills in Math (Sopris West)</li> <li>• Number Worlds (McGraw-Hill)</li> <li>• East Carolina Early Numeracy Curriculum (East Carolina university, Scott Methe, author)</li> </ul>	<ul style="list-style-type: none"> <li>• Differentiated instruction within Core</li> <li>• Supplemental intervention materials (ex: Number Worlds)</li> </ul>

**STEP 5: Determine instructional level for progress monitoring and intervention**

Understanding the materials being used for supplemental instruction and the manner in which instructional levels are identified within these specific materials at the elementary level may promote the selection of supplemental preschool materials that are better aligned with the elementary curricula.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
<b>STEP 6:</b> <b>Analyze progress monitoring data</b>	<ul style="list-style-type: none"> <li>• Is student making adequate progress?</li> </ul>	<ul style="list-style-type: none"> <li>• BLT or collaborative team may follow the general guidance provided for elementary/secondary; however, progress monitoring data is collected monthly.</li> </ul>

**STEP 6: Analyze progress monitoring data**

The methods for analyzing progress-monitoring data are the same at the preschool and elementary level; therefore, understanding this step will allow preschool representatives to acquire the skills necessary to teach this step to others during preschool implementation.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
<b>STEP 7: Update student tracking information</b>	<ul style="list-style-type: none"> <li>• Update Student Intervention Log and Progress Monitoring Graph</li> </ul>	<ul style="list-style-type: none"> <li>• Update Student Intervention Log and Progress Monitoring Graph</li> </ul>

**STEP 7: Update student tracking information**

Understanding this step and the type of information that is being recorded at the elementary level may provide useful information to the preschool program for creating a similar format to be used for tracking progress for children who are receiving additional support through differentiated instruction.

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