Kansas Multi-Tier System of Supports

- Implementation Supplement for Preschool Math

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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) 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 IMPLEMENTATION SUPPLEMENT
FOR PRESCHOOL MATH

This guide is intended to give preschool specific information and directions to elementary leadership teams with preschool representation implementing MTSS math at the preschool level. 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 implementation and interventions.

Math Implementation

Preschool

GETTING STARTED: Building Leadership Team reviews similarities and differences

When integrating preschool into the MTSS implementation of an elementary building, it is important for the Building Leadership Team (BLT) to review the similarities and differences of the overall process regarding preschool programs and elementary programs. While the process and methods for collecting and analyzing assessment data are similar, there are a few differences that warrant attention. The BLT and collaborative teams should review the table on page three of this guide titled "Comparison of Elementary and Preschool Implementation Process."

The following information outlines specific steps for preschool implementation and is to be used in conjunction with the steps outlined in the *Building Leadership Team Implementation Guide Mathematics* and the *Collaborative Team Workbook Mathematics*. Information specific to preschool is included in this guide. Teams integrating preschool as a part of their elementary MTSS implementation should first read each step as it is written in the *Building Leadership Team Implementation Guide Mathematics* and the *Collaborative Team Workbook Mathematics*, and then refer to the corresponding preschool implementation steps.

IMPORTANT REMINDER TO BLTs

It will be necessary for the BLT to create a realistic plan for carrying out preschool assessments that support the MTSS process. The administration of universal screening as well as the duties of supplemental (Tier 2) or intensive instruction (Tier 3) should *NOT* fall completely on the shoulders of the preschool teacher/staff. Steps should be taken for others to share the responsibilities of either the classroom or testing or both. Just as it is done with other grades in the elementary program, universal screening activities are often carried out in what some categorize as a "SWAT Team" approach. This "SWAT Team" includes two or more individuals who are identified to perform specific roles in the process such as 1) administering universal screening assessments, 2) scoring completed assessments, 3) entering assessment scores into a database, and 4) generating the assessment reports to be used in implementation. Using a team approach spares the classroom teacher from the additional duties required in the universal screening process. Many BLTs forget to spare preschool staff from the same burdens.

Too often preschool teachers are asked to administer, score, and record universal screening data on top of what they are already doing in the classroom. This practice may be in place because the preschool teacher has already established a positive rapport with the children in the classroom, and may therefore be in a position to conduct the testing in a way that will provide the most reliable and valid responses. The need to establish a positive rapport with individual children before testing is very important, and in cases where it is not feasible or desirable to create activities for rapport building between children and outside assessors, it makes sense for the testing to be conducted by the classroom preschool teacher. However, even in this circumstance the need for additional "SWAT team" support is necessary. If it is determined that the preschool teacher should administer the assessments, then the BLT should identify "SWAT team" members who will be responsible for carrying out classroom activities to allow the teacher to administer the assessment.

Before beginning preschool implementation the BLT should identify the best possible approach for the overall system, while at the same time providing appropriate support to the classroom teacher and utilizing approaches that recognize the unique needs of young children in the assessment process. In some cases it may be possible to identify individuals for the "SWAT team" that are routinely involved in preschool activities and/or can spend time in upcoming preschool activities, allowing a positive rapport to be established. Indeed utilizing other adults in the administration of preschool assessments strengthens the overall system by increasing the knowledge base of preschool practices among members of the BLT. Increasing the number of adults who have a working knowledge of the assessment tools provides an opportunity for a broader perspective on issues related to the preschool program, and may also be applicable to challenges identified in the kindergarten program as well. Regardless of who ends up identified to administer the assessments, the entire set of activities (e.g., classroom teaching, screening assessment administration, scoring of assessments, entering of data) should be conducted as a team, and should not be the primary responsibility of the preschool teacher alone.

Comparison of Elementary and Preschool Implementation Process

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS (IN THE FUTURE)
STEP 1: **Review and validate universal screening data**	Universal Screeners: • AIMSweb • STAR Math Enterprise • easyCBM	Universal Screeners: • PNI • AIMSweb • EARLI
STEP 2: **Analyze data**	AIMSweb • Missing Number & Quantity Discrimination (K-1) • Computation & Concepts/Application (2-12) STAR Math Enterprise and easyCBM • Focal points/domains	• Analyze classroom level data in comparison to national or local norms. • Review data in conjunction with curriculum based assessments of core curriculum. • Initially look at scores falling below 30% on national or local norms
STEP 3: **Use data to group students**	Kdg-Grade 12 • Test down for instruction level. • Administer placement test from intervention curriculum (if available) or refer to Student Instructional Planning Report (AIMSweb). • Students are grouped based on intensity level, instruction level, and either results of placement test or lowest domain/focal point.	• 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. • Interventions will be identified through problem solving within the collaborative team rather than "data grouping."
STEP 4: **Determine focus of intervention**	• 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).	• 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.
Step5: **Determine instructional level for progress monitoring and intervention**	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: • Math Rescue (multi-sensory, Sopris West) • Practicing Basic Skills in Math (Sopris West) • Number Worlds (McGraw-Hill) • East Carolina Early Numeracy Curriculum (East Carolina university, Scott Methe, author)	• Differentiated instruction within Core • Supplemental intervention materials (ex: Number Worlds)
STEP 6: **Analyze progress monitoring data**	• Is student making adequate progress?	• BLT or collaborative team may follow the general guidance provided for elementary/secondary; however, progress monitoring data is collected monthly
STEP 7: **Update student tracking information**	• Update Student Intervention Log and Progress Monitoring Graph	• Update Student Intervention Log and Progress Monitoring Graph

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
STEP 1: Review and validate universal screening data	Universal Screeners: • AIMSweb • easyCBM • STAR Math Enterprise	Universal Screeners: • PNI • AIMSweb • EARLI

STEP 1: Monitor universal screening

Follow the guidance provided in the *Building Leadership Team Implementation Guide Mathematics* and *Collaborative Team Workbook Mathematics.*

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
STEP 2: **Analyze data**	AIMSweb • Missing Number & Quantity Discrimination (K-1) • Computation & Concepts/Application (2-12) easyCBM and STAR Math Enterprise • Focal Points/domains	• Analyze classroom level data in comparison to national or local norms • Review in conjunction with curriculum based assessments of core curriculum • Initially look at scores falling below 30% on national or local norms

STEP 2: Analyze data

Analyze *grade* level data
In buildings with multiple preschool classrooms that comprise students with similar demographics administered as one preschool program, the BLT may decide to analyze all of the preschool classroom data together; similar to what is done at the kindergarten level.

However, in buildings where preschool classrooms represent different program types and individual classrooms encompass distinctly different target populations from one classroom to the next (e.g., 50/50 Special Education, Segregated Preschool, At Risk Preschool); preschool data should be analyzed at the individual classroom level.

Analyze *classroom* level data
The primary purpose of analyzing preschool classroom data is to determine if there is a need for class-wide intervention to support early numeracy skill development, and if needed, to identify methods for the system to provide this additional support. To do this the team will review information obtained from the universal screening assessments and determine the percentage of children in the On Track range (myIGDIs "Strong" – performing above the national norm), supplemental range (myIGDIs "Moderate" – performing below the national norm but above the 30% percentile cut-score), or intensive range (myIGDIs "At-Risk" – performing below the 30% percentile cut-score). If a high percentage of scores fall below the On Track range (below the national norm) the team should consider a class-wide intervention.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
STEP 3: **Use data to group students**	Kdg-Grade 12 • Test down for instruction level. • Administer placement test from intervention curriculum (if available) or refer to Student Instructional Planning Report (AIMSweb). • Students are grouped based on intensity level, instruction level, and either results of placement test or lowest domain/focal point.	• 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. • Interventions will be identified through problem solving within the collaborative team rather than "data grouping."

STEP 3: Identify students in need of differentiated instruction

Using the information collected and analyzed in the above step, the team will review individual student scores to determine if individual children need additional support to meet significant needs. To do this the team will review the rank ordering of scores within each of the subtests looking closely at the scores falling at or below the 30th percentile indicating a need for either supplemental or intensive support. Depending on how well the overall classroom performed within that subtest (e.g., if a high percentage of the class were significantly below average and a need for class-wide intervention was determined), the team must further identify individual students who will need additional support even beyond those class-wide interventions.

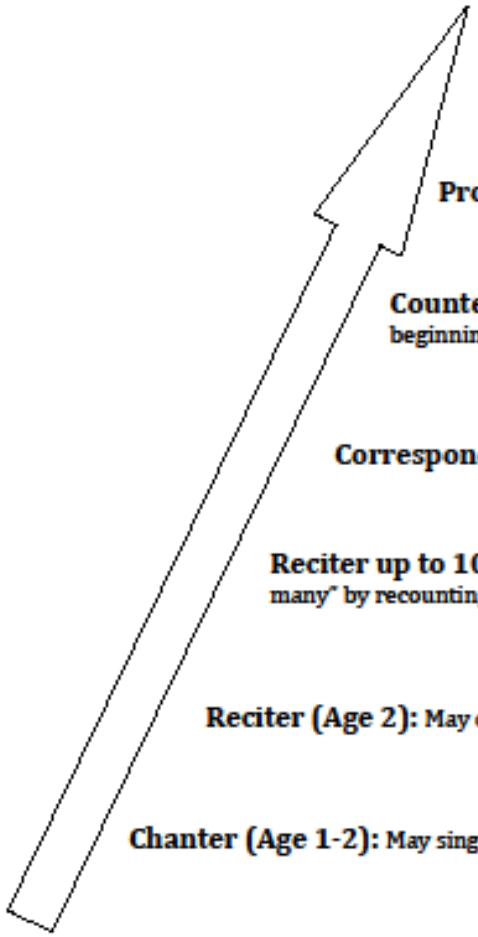
NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
STEP 4: Determine focus of intervention	• 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).	• Differentiated instruction for individual students will be identified through a learning trajectory that is part of or consistent with core math curriculum scope and sequence.

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. Quality preschool core curriculums should provide: 1) an appropriate range of activities that can be matched to specific learning goals and 2) supporting activities that fall along early numeracy learning trajectories as follows:.

Counting



Counter Comparer of Small Numbers (Age 4): Counts structured arrangement of items up to 10 MAY write or draw items to represent a group of 1-10. MAY be able to identify the number preceding/following a number (+/- one)—but ONLY from counting up from 1.

Producer of Small Numbers (Age 4): Counts a set of 5 items when asked to give "4" items, child accurately produces 4.

Counter of Small Numbers (Age 4): Counts meaningfully in 1-1 correspondence of items in a line up to 5. Answers how many. Is beginning to understand cardinality.

Corresponder (Age 4): 1-1 correspondence counting up to 4 things in a line, and MAY produce "how many" without recounting.

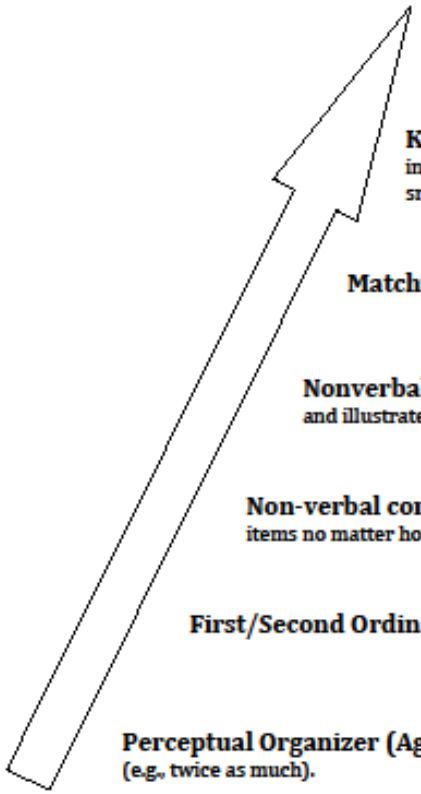
Reciter up to 10 (Age 3): May orally count to 10 with some 1-1 correspondence counting with items in a line. May answer "how many" by recounting small numbers.

Reciter (Age 2): May orally count with separate words, but not always in correct order.

Chanter (Age 1-2): May sing number songs but number words are not fully indistinguishable.

Pre-counter (Age 1-2): No oral counting—may name some numbers but no real sequence.

Comparing and Ordering



Counting Comparer Same Size (Age 4): Makes accurate comparisons via counting BUT ONLY WHEN THE OBJECTS ARE ABOUT THE SAME SIZE AND GROUPS ARE SMALL (1-5).

Knows to Count Comparer (Age 4): Counts collections as a means for comparison-not always correct in conclusions for exampl in 2 equal sets of blocks- child may indicate that the set with the "large blocks" is of more quantity than the same number set with the small blocks.

Matching Comparer (Age 4): Matches groups of items 1-6 identifying when there are the same number of things in each group.

Nonverbal Comparer of Dissimilar Items (Age 4): Matches small, equal collections of dissimilar items such as shells and dots and illustrates they are the same in number.

Non-verbal comparer of similar numbers (Age 3): Can identify an equal value in numbers when comparing two sets of similar items no matter how the items are arranged (e.g., two groups of three dots—in a row or in a triangle all mean 3)—up to 4 items.

First/Second Ordinal Counter (Age 3): Can Identify 1st and sometimes 2nd items in a sequence.

Perceptual Organizer (Age 2): Can compare collections of similar items and identify more/less when the sets of items are significantly different in size (e.g., twice as much).

Object Correspondence (Age 2): Can put objects in 1-1 correspondence but does not comprehend this equates to "same number in a group."

Reorganizing & Subitizing—Instant Recognition

Perceptual Subitizer (Age 4): Recognizes a collection of 4 items- and names the collection "four."

Maker of Small Collections (Age 3): When adult shows a collection of 1-3 items, the child can reproduce the same number in a set.

Small Collection Naming (Age 2): Can name a collection as 2—for example shown a pair of shoes and says "two shoes."

Schools may also choose to adopt a supplemental preschool intervention curriculum (i.e., Number Worlds). Once the curriculum(s) are identified, the team should make plans for adding additional opportunities for the entire class to be exposed to these interventions through the use of large group, small group, and embedded learning activities increasing the number of opportunities for practice and corrective feedback for groups and individuals.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
Step5: Determine instructional level for progress monitoring and intervention	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: • Math Rescue (multi-sensory, Sopris West) • Practicing Basic Skills in Math (Sopris West) • Number Worlds (McGraw-Hill) • East Carolina Early Numeracy Curriculum (East Carolina university, Scott Methe, author)	• Differentiated instruction within Core • Supplemental intervention materials (ex: Number Worlds)

STEP 5: Determine instructional level for progress monitoring and intervention

Once children are identified for Tier 2 (supplemental) or Tier 3 (intensive) support, the BLT must determine if any additional information is needed to identify the instructional focus for these interventions. Information gathered as part of ongoing curriculum based assessments, teacher generated checklists, and/or other assessment information that has been collected can be utilized within this step. The team can also elect to gather additional diagnostic information if desired, although that decision is up to the BLT to determine on a case-by-case basis.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
STEP 6: Analyze progress monitoring data	• Is student making adequate progress?	• BLT or collaborative team may follow the general guidance provided for primary/secondary; however, PM data is collected monthly. • Teams should understand that young children will likely spend more time in intervention than older students.

STEP 6: Analyze progress monitoring data

Follow the guidance outlined in the *Building Leadership Team Implementation Guide Mathematics* and *Collaborative Team Workbook Mathematics;* however, note that for preschool progress monitoring data is collected monthly.

NOTES:

IMPLEMENTATION STEP	ELEMENTARY/SECONDARY IMPLEMENTATION PROCESS	PRESCHOOL IMPLEMENTATION PROCESS
STEP 7: Update student tracking information	• Update Student Intervention Log and Progress Monitoring Graph	• Update Student Intervention Log and Progress Monitoring Graph

STEP 7: Update student tracking information

Follow the guidance outlined in the *Building Leadership Team Implementation Guide Mathematics* and *Collaborative Team Workbook Mathematics.*

NOTES:

References

Clements, D. H., & Sarama, J. (2007). Building Blocks-SRA Real Math, Grade PreK. Columbus, OH: SRA/McGraw-Hill.

Early Learning Labs. MyIGDIs: The Progress Monitoring Portal for RTI & CBM. Version 1.0. St. Paul, MN.