



Math Recovery: A Solution for all Tiers of MTSS

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The US Math Recovery Council (USMRC) offers many resources and supports to help school districts effectively implement Multi-Tiered System of Supports (MTSS) in math. The purpose of this white paper is to describe MTSS and how the services and products offered by USMRC fit within MTSS.

Multi-Tiered Systems of Support

MTSS is a **framework** for delivering evidence-based practices across increasingly intensive tiers of support (Billingsley et al., 2019; Pullen et al., 2019) to meet students' academic and behavioral needs. MTSS uses data-based problem-solving techniques (Eagle et al., 2015) to support students proactively, rather than reactively (American Institutes for Research, n.d.). The **purpose** of MTSS is to create a school-wide culture where support is adjusted based on up-to-date student data to prevent severe problems from arising (Pullen et al., 2019; Yell, 2019). It aims to provide the right amount of evidence-based support, whether academic or behavioral, to help students learn (Pullen et al., 2019).

Core Principles of MTSS

MTSS is based on several core principles, including **prevention, data-based decision-making, problem-solving, and school-wide reform** (Eagle et al., 2015). It is inherently data-driven, relying on frequent assessments and progress monitoring to guide instructional decisions as well as collaborative decision-making to ensure that each student receives the appropriate level of support at the right time (Billingsley et al., 2019).

- **Prevention:** MTSS emphasizes proactive strategies to prevent academic and behavioral difficulties, rather than reacting to problems after they occur (Eagle et al., 2015; Pullen et al., 2019; Reinke et al., 2019). The belief underlying MTSS is that most students can achieve grade-level standards if provided with the appropriate evidence-based support (Pullen et al., 2019).
- **Data-Based Decision-Making:** Data is a critical component of MTSS (Eagle et al., 2015), including universal screening to identify at-risk students, diagnostic data to pinpoint specific areas of difficulty, ongoing progress monitoring to evaluate intervention effectiveness, and implementation fidelity data to ensure interventions are delivered as intended (Eagle et al., 2015; Pullen et al., 2019; Reinke et al., 2019).
- **Problem-Solving Approach:** MTSS is usually implemented within a problem-solving model (Pullen et al., 2019; Reinke et al., 2019). This model involves stating the problem that a student is facing, determining the underlying cause, establishing a plan, and monitoring its success (Pullen et al., 2019; Reinke et al., 2019). Data collection is essential to identify students in need of support, pinpoint difficulties, monitor progress, and ensure implementation fidelity (Pullen et al., 2019).
- **School-wide Reform:** MTSS is a model for school-wide reform that requires educators to work differently by emphasizing prevention and proactively supporting student needs (Billingsley et al., 2019; Pullen et al., 2019). This includes building staff competencies, organizational support, and leadership (Eagle et al., 2015).

These core principles aim to create a comprehensive system that provides the right academic and behavioral support at the right time to ensure success for all students.

Tiers of Support

MTSS models implement these core principles across multiple tiers of instruction and intervention (Pullen et al., 2019; Weisenburgh-Snyder et al., 2015). These tiers increase in intensity based on student needs. Typically, universal screening is used to identify students who are struggling academically or behaviorally (Eagle et al., 2015; Reinke et al., 2019).

Tier 1

Tier 1 is the universal level that provides the foundation for the other tiers (Flannery et al., 2019). This tier includes schoolwide expectations, curriculum, and supports provided for all students (Fuchs & Fuchs, 2006; Flannery et al., 2019). The goal of tier 1 is for most students (about 80%) to be successful (Flannery et al., 2019; National Association of State Directors of Special Education, 2005).

Tier 2

Tier 2 provides targeted interventions for students who need additional support, typically delivered in small group settings (Pullen et al., 2019).

Tier 3

Tier 3 offers intensive, individualized interventions for students with more significant needs (National Center on Response to Intervention, 2010; Pullen et al., 2019).

In summary, MTSS is a comprehensive approach to education. Schools that implement an MTSS framework aim to provide proactive support to all students by using a tiered system of interventions, data-driven decision-making, and a strong problem-solving framework (Flannery et al., 2019).

The Role of the U.S. Math Recovery Council (USMRC) in MTSS

The U.S. Math Recovery Council (USMRC) is grounded in the core beliefs of **intensive, early intervention, diagnostic assessment, constructivism, and a system-wide approach** (MacCarty & Kinsey, 2019). USMRC works with schools and districts to develop a system-wide approach to developing teachers and leaders' expertise in the use of diagnostic assessments and constructivist approaches to teaching to provide targeted, early intervention.

- **Intensive, Early Intervention:** Math Recovery Specialists are trained to identify the specific needs of students identified for tier 2 and tier 3 instruction and provide targeted, early intervention to support their progress.
- **Diagnostic Assessment:** Teachers trained through Math Recovery courses learn to use interview-based diagnostic assessments to formally determine where students are on learning trajectories and design appropriate instruction for tiers 1, 2, and 3.
- **Constructivism:** Math Recovery approaches are grounded in a constructivist approach to teaching, which posits that for learning to happen, students must construct new knowledge for themselves. The teachers' role in a constructivist classroom is to provide students with the tools and activities needed to allow them to construct their knowledge.
- **System-wide Approach:** Math Recovery courses are designed to support the professional learning of teachers, interventionists, and administrators. System-wide sustainability of Math Recovery approaches is so important, that school and district leaders are often trained as Math Recovery champions to learn how to teach the teacher- and interventionist-focused courses in their own districts.

The core principles of MTSS and the core beliefs of USMRC are highly aligned. Both focus on early intervention designed to meet students' specific needs which are determined through assessment. Both MTSS and USMRC take a school-wide approach to change, by considering the needs of administrators, specialists, interventionists, and teachers.

USMRC Across Three Tiers of Support

USMRC provides comprehensive support to schools and districts implementing MTSS for mathematics, focusing on professional learning, instructional resources, and intervention strategies across all tiers:

Tier 1: Strengthening Core Instruction

- **Professional Development:** Through Add+VantageMR (AVMR) courses, USMRC equips educators with strategies to enhance core math instruction, ensuring students build strong foundational skills in numeracy and mathematical reasoning.
- **Instructional Resources:** USMRC offers books, physical products, and curriculum materials designed to support engaging, research-based whole-group instruction in the general education classroom. For instance, the Ready Set Math curriculum materials provide whole group and individual activities that teachers can use to supplement their tier 1 curricula. It also includes small group activities that could be used either for intervention support or to differentiate tier 1 instruction.
- **Differentiation Support:** Educators learn to use diagnostic tools to identify and address varied learning needs within tier 1 settings.

Tiers 2 and 3: Supporting Targeted and Intensive Interventions

- **Small Group Resources:** The Ready Set Math curriculum materials and tools include small group activities aligned to the learning trajectories and individual assessments. This resource allows trained Math Recovery Specialists to provide tailored small group instruction that addresses learning opportunities for students needing additional support.

- **Formative Assessments:** Math Recovery assessments enable educators to diagnose specific needs and implement targeted interventions.
- **Math Champs Service:** Districts or families can hire Math Recovery Specialist-trained interventionists through the Math Champs program to provide tailored tier 2 or 3 support directly to students.
- **Specialist Training:** USMRC’s Math Recovery Specialist courses equip interventionists with advanced tools and techniques to deliver individualized instruction.
- **Coaching:** Interventionists in these courses receive expert coaching to refine their skills and deliver effective, intensive interventions.

Additional Contributions to MTSS Implementation

- **Instructional Materials for All Tiers:** USMRC provides versatile resources—books, physical tools, and curricula—that align with instructional goals at every tier.
- **Data-Driven Approaches:** USMRC emphasizes the use of diagnostic tools and progress monitoring to make informed instructional decisions aligned with research-based trajectories of student learning.
- **Sustainability:** By focusing on educator development and the training of district champions who can provide turnaround training for teachers in their own schools, USMRC supports the long-term integration of MTSS practices into school systems.

Through its diverse offerings, USMRC empowers schools to deliver high-quality instruction and interventions across all tiers, ensuring equitable access to math success for every student.

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