



Mathematics Intervention Teacher Handbook



July 2008

Mission Statements



Drawing on the expertise and research of mathematics educators and mathematicians, the Kentucky Center for Mathematics supports diverse teacher and student populations across the Commonwealth by facilitating the development of mathematical proficiency, power for future success, and enjoyment of teaching and learning mathematics.



INTERVENTION

The goal of the state mathematics diagnostic intervention program is to expand the capacity of teachers to assess a child's current status and adjust instruction accordingly.



COACHING

To be effective, professional development must be ongoing, deeply embedded in teachers' classroom work, specific to grade levels or academic content, and focused on research-based approaches. Kentucky is adopting a school-based coaching strategy to take advantage of these insights. Once trained, coaches across the state will be able to help their peers take instructional ideas and translate them into actions that improve student learning.

Acknowledgements

The Kentucky Center for Mathematics would like to thank:

- all the Pioneer Mathematics Intervention Teachers and Regional Coordinators whose thoughtful questions and constructive suggestions helped to shape the development of the statewide primary mathematics diagnostic intervention initiative;
- SRA McGraw Hill for the generous contribution of 28,000 Terra Nova tests and 90 Fox Adds Up kits;
- the US Math Recovery Council for developing a state-wide leadership development model in partnership with the KCM.

MIT Handbook

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The Committee for Mathematics Achievement

Robin Risner, Chairperson
Barbara Walters, Co-Chairperson

Established by House Bill 93

“...create a new section of KRS Chapter 158 to establish the Committee for Mathematics Achievement for purposes of developing a multi-faceted strategic plan to improve student achievement in mathematics at all levels of schooling...”

In spring 2005, recognizing that mathematical proficiency is a gateway skill necessary for all Kentucky students to achieve their academic goals, the Kentucky Legislature passed [House Bill 93](#) in support of mathematics teaching and learning in Kentucky. As part of the bill, the Committee on Mathematics Achievement ([CMA Strategic Plan](#) - *Updated February 9, 2007*) was formed and set the following four goals (*Updated February 9, 2007*):

- Create a shared vision of high-quality mathematics instruction by enhancing the beliefs and attitudes of students, teachers, instructors, faculty, administrators, families and community members about mathematics.
- Enhance Pre-K through 16 teachers' mathematics knowledge and ability to differentiate instruction to meet the needs of all students.
- Enhance the awareness and knowledge of Pre-K-12 teachers, adult educators, and postsecondary faculty regarding effective mathematics resources, including curriculum materials, intervention and remediation programs, and technology, and provide them the support necessary to use the resources effectively.
- Increase the number of Kentucky teachers with expertise in mathematics and mathematics teaching through aggressive recruitment programs and support-based retention strategies.

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Kentucky Center for Mathematics

Contact for: Training, support, and research/assessments

Website: <http://kentuckymathematics.org>

Email: Alice Gabbard, gabbardal@nku.edu or Jonathan Thomas, thomasj13@nku.edu; Rachel Thomas, Data Specialist, amoldr2@nku.edu; Julia Sullivan, Budget Officer, sullivanj1@nku.edu; Bill Nostheide, Technology Director/Centra, nostheidew1@nku.edu.

Regional Coordinators

Contact for: Online meetings, in-person visits, regional collegial meetings, and school-based assistance

Cindy Aossey, University of Kentucky, caossey@ms.uky.edu

Gwen Morgan, Kentucky Educational Development Cooperative, gwenmorgan@tds.net

Nancy Applegate, Morehead State University, nancyhapplegate@morehead.edu

Linda Jewell, Kentucky State University, lindajewell@insightbb.com

Mary Helen Hodges, Murray State University, mary.hodges@coe.murraystate.edu

Jonathan Thomas, Northern Kentucky University, thomasj13@nku.edu

Kentucky Department of Education

Contact for: Grant compliance and Mathematics Achievement Fund (MAF) budget

Website: <http://www.education.ky.gov/KDE/Default.htm>

Email: Linda Montgomery for grant compliance, Linda.montgomery@education.ky.gov; or Georgeann Burton, Georgeann.burton@education.ky.gov for budget.

Number Worlds, SRA McGraw-Hill

Website: <http://sranumberworlds.com/> or <http://kymath.org/intervention/numberworlds.html>

Email: Dwight Levi, dwight_levi@mcgraw-hill.com

Math Recovery

Website: <http://mathrecovery.org> or <http://kymath.org/intervention/mathrecovery.html>

Email: Jenny Cobb, jenny@mathrecovery.org; Petey MacCarty, math@fiberpipe.net and Kurt Kinsey, msm@fiberpipe.net.

Kentucky Center for Mathematics Staff Responsibilities

- Collect assessments and coordinate the implementation study to determine the effectiveness of the intervention programs as implemented (NOT to evaluate teachers).
- Communicate with the KDE regarding the interpretation of Mathematics Achievement Fund (MAF) regulations.
- Provide training and ongoing support for MITs. Document training attendance for MAF compliance.
- Coordinate the leadership efforts of the Regional Coordinators.
- Report to the Committee for Mathematics Achievement and the Council on Postsecondary Education.
- Develop a directory of mathematics resources for use by MITs and other mathematics teachers.
- Collaborate with other state mathematics leadership organizations.
- Present Kentucky's intervention initiatives at conferences, at regional meetings, and to legislators.

Regional Coordinators' Responsibilities

- Lead weekly online Centra meetings for level 1 MITs. Lead monthly (or more frequently, depending on group consensus) online Centra meetings for level 2 and level 3 MITs.
- Visit level 1 MITs monthly.
- Organize and lead three regional collegial meetings for level 2 and level 3 MITs.
- Work with students to gain experience in program implementation.
- Network with other mathematics leaders in the region, especially with the regional coops and the university.
- Apply to present/co-present at the annual Kentucky Teaching and Learning Conference and the Kentucky Council of Teachers of Mathematics Annual Conference.
- Present KCM initiatives to regional groups.
- Share MIT resources with other RCs and with KCM staff via the KCM Forum.
- Host KCM training at the University Demonstration/Training Site.
- Assist with MIT training & develop expertise in the KCM programs.

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Mathematics Intervention Teachers' Responsibilities

- Read the MAF grant requirements, your school's grant proposal, and this handbook.
- Collaborate with your principal regarding decisions for spending the MAF.
- Complete teacher assessments, the details of which will be given separately.
- Attend all required MIT trainings/meetings/conferences/visits as specified on the KCM/intervention/training details webpage. <http://kymath.org>
- Post a thoughtful comment on the KCM Forum each month.
- Collaborate with administrators in the student identification process.
- Obtain parental permission for participation in the intervention program and/or program evaluation.
- Maintain Dates of Record (DOR) for each student using the template provided on the KCM/resources webpage. <http://kymath.org>
- Administer and submit required assessments and records as indicated in section 5 below.
- Collaborate with regular classroom teachers to improve the mathematics instruction in all primary classrooms.
- Communicate with the KCM Regional Coordinator any problems, needs for support, or legitimate reasons for meeting absences.
- Involve families in the intervention program.
- Prepare mid-year and end-of-year reports for the Kentucky Department of Education, including a list of Mathematics Achievement Fund expenses.

Decision making protocol:

- 1) Review the MAF grant regulations, your school proposal, and this handbook. Make the decision if you are clear about all the rules. If you need further clarification, go on the #2 and/or #3.
- 2) Discuss the decision with your regional coordinator.
- 3) Email Alice Gabbard and/or Linda Montgomery for assistance.

Consulting other MITs for advice is very appropriate for teaching and learning, but may not be 100% reliable for interpretation of the complex guidelines and requirements.

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Administrators' Responsibilities

- Provide support for the MIT, including
 - materials
 - classroom space
 - time for administering assessments
 - acceptance of daily lesson plans based on formative assessment
 - adequate time for lessons, video review (Math Recovery), and planning
 - appropriate group size
 - release time for training, conferences, visits/meetings as specified on the KCM/intervention/training details webpage. <http://kymath.org>
 - professional development resources, such as books and journal subscriptions
 - weekly collaborative meeting time with other MITs
 - time for visiting the regular math classes
 - time for involving families
- Restrict the MIT assignment to mathematics teaching (no substitute teaching), at least half of which must be direct service for struggling primary students.
- Secure the Terra Nova tests until time for administration
- Collaborate with the MIT in the identification of struggling, primary students
- Collaborate with the MIT in decisions regarding appropriate expenditures of the Mathematics Achievement Funds (MAFs).
- Collaborate with the MIT in preparing the mid-year report and the end-of-year report for the KDE
- (Financial Office) Submit quarterly budget reports and the next year's annual budget to KDE ; work with the MIT to prepare the annual budget request and submit to Georgeann Burton at the KDE, Georgeann.burton@education.ky.gov.

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Section

Answers to MIT grant questions from the Kentucky Department of Education

This is a working document, written February 15, 2007 and updated July 7, 2008, and is subject to change as new situations and concerns are presented.

Part 1—Changes in the Grant Proposal

- 1.1 - May a school modify the proposed number of students to be served, in order to better fit the guidelines of the intervention program to be implemented? What is the correct procedure for requesting permission for the change?
- 1.2 - May a school pay a different amount for salary than was stated in the original budget proposal? What is the correct procedure for requesting permission for the change?
- 1.3 - May a school change the professional development plan as stated in the original grant proposal? What is the correct procedure for requesting permission for the change?
- 1.4 - May a school change the assessment plan as stated in the original grant proposal? What is the correct procedure for requesting permission for the change?

KDE: The answer is the same for the first four questions: "yes". The school/school district should send an email to Linda Montgomery and copy the budget contact at KDE outlining why the original budget needs to be changed. Linda will either approve the request or request additional information. The Budget contact at KDE must be copied on all correspondence.

Part 2—Submission of Reports

- 2.1 - Who is responsible for completing and submitting the Evaluation Reports to KDE?
KDE: The MIT may complete the Evaluation Reports to KDE or the district/school may designate some other person to complete the reports. The grant states the district may not use grant funds to hire someone other than the MIT to do this job.
- 2.2 - What is the purpose of the Mid—Year Evaluation?
KDE: To inform KDE of the progress for the implementation of the intervention programs and diagnostic assessment; to check for continuous monitoring of student progress; to allow the MIT to reflect on and evaluate the program; to help with decisions on continued funding; and to provide qualitative data for the KCM research.
- 2.3 - When is the Mid—Year Evaluation due?
KDE: Near the end of January

- 2.4 - What information needs to be provided on the Mid-Year Evaluation?
KDE: See the KCM/intervention/resources webpage for a previous report outline. KDE reserves the right to modify the report as needed. We anticipate one additional requirement to the report will be a draft of the budget for the second year.
- 2.5 - What are acceptable measures of student growth?
KDE: Documented continuous progress based on the assessments determined by the school and KCM.
- 2.6 - What is the purpose of the End-of-Year Evaluation?
KDE: To document overall yearly progress; to discover any adjustments that need to be made for the next year's program.
- 2.7 - When is the End-of-Year Evaluation due?
KDE: Early June
- 2.8 - For the year-end report to KDE, may the Terra Nova scores be sent as an addendum after the report due date?
KDE: The Terra Nova scores may be sent as an addendum after the report due date.
- 2.9 - Who is responsible for submitting quarterly budget reports?
KDE: There should be collaboration between the MIT, the school administrator and the district financial officer. The MIT should be sure the finance officer has all accurate information; i.e. receipts, purchase orders, etc. The official report is submitted by the district financial officer to Georgeann Burton on a quarterly basis.
- 2.10 - May the MAF be used to purchase materials for other teachers of struggling primary students?
KDE: If you conduct training on how to use [insert materials] and in the training it was necessary for each teacher to have an individual set with which to do the activities, then you could provide an individual set for each teacher to use and to keep. You could not buy each teacher a classroom set.

Part 3—Permitted Expenditures

- 3.1 - May grant funds be used to test all primary students if the test is used to identify the lowest students?
KDE: Yes, it is acceptable to use grant funds to test every primary student in order to identify the eligibility pool for the intervention program.
- 3.2 - May an MIT serve as a substitute teacher?
KDE: No, the MIT should not serve as a substitute since that would prevent him/her from working with the identified students in the intervention program.
- 3.3 - May grant funds be used to purchase food manipulatives for math activities?
KDE: No, grant money may not be used to purchase food for any reason. The school will need to use other funds for such purposes.
- 3.4 - May a school use the technology allowance (\$5000 or 5 computers) for other types of technology hardware other than computers?
KDE: Schools may spend up to \$5000 for the life of the grant on all technology hardware, including a maximum of 5 computers and other types of equipment.

- 3.5 - Must computers purchased with grant funds be placed in the MIT's classroom?
KDE: Yes, the computers must be placed in the MIT's classroom. If there is a time period when the identified intervention students are not using the computers, other students could be allowed to do work on them as long as the use does not decrease the value of the computers or time available for intervention students.
- 3.6 - May the MAF pay for the MIT to attend any conference/training which offers math intervention strategies?
KDE: Yes, the MAF may pay for stipend, fees, and travel for conferences and training that offer math intervention strategies. This would include permission for use of MAF to pay for events such as the National Council of Teachers of Mathematics Conference, the National Math Recovery Conference would be acceptable expenditures, the Kentucky Math Alliance.

Part 4—Budget Questions

- 4.1 - What is the window of availability for grant funds?
*KDE: Round 2: July 1, 2007 to September 30, 2008.
 Round 3: July 1, 2008 to June 30, 2009.*
- 4.2 - What is the process for requesting continuing grant funds?
KDE: Schools will receive a notice of deadline in the spring and must submit a future year budget request to Georgeann Burton at the KDE.
- 4.3 - May a school encumber expenses before the grant funds are received, meaning, may they order materials before the MAF is available and then issue the payment after the MAF moneys are released?
KDE: No. Until the School District has an approved Master Agreement, they technically have not been funded. KY law states that a contract or agreement is not effective until approved by the Secretary of Finance and Administration Cabinet. It is also noted that in some instances, final approval is required by the Legislative Research Commission's Government Contract Review Committee pursuant to KRS Chapter 45A.
- 4.4 - If a school wrote the MAF grant proposal budget for less than the available amount, may a school still receive the maximum amount? If so, what is the procedure for amending the budgeted amount?
KDE: The School is only funded for the amount on the approved proposal for the first year. The school may ask for the full second year funding with the submission of a budget.
- 4.5 - May a school change an expense amount listed in the original budget? If so, what is the correct procedure for obtaining permission for the change?
KDE: The school/school district should send an email to Linda Montgomery and copy the budget contact at KDE outlining why the original budget needs to be changed. Linda will either approve the request or request additional information. The Budget contact at KDE must be copied on all correspondence.
- 4.6 - May a school spend money in a category/code not listed in the original budget? If so, what is the correct procedure for obtaining permission for the expense?
KDE: The school/school district should send an email to Linda Montgomery and copy the budget contact at KDE outlining why the original budget needs to be changed. Linda will either approve the request or request additional information. The Budget contact at KDE must be copied on all correspondence.

Part 5—Students to be Served

- 5.1 - How may a school define and identify struggling primary students?
KDE: Schools should identify children eligible for services, those failing or most at risk of failing to meet proficiency on Kentucky's Program of Studies, on the basis of multiple, educationally related, objective criteria established by the local school. Additional sources of data for selection are teacher judgment, interviews with parents and other developmentally appropriate measures.
- 5.2 - What should a school do if they determine that the majority of primary students are struggling in mathematics?
KDE: Remember that the intervention programs are to supplement the regular core mathematics program at the school. The only exception is Number Worlds may be used as a prevention program for struggling students at the P1 and P2 levels (kindergarten and 1st grade) and for these students may be used as the core mathematics program. If a majority of students are struggling in mathematics, the MIT must use some other criteria to narrow down the list until the students who need the most intervention are being served first. As students are released from the program, others may be served. The MIT should model lessons and share strategies with the regular classroom teachers so they can work more successfully with the struggling students who have not received intervention services.
- 5.3 - Must an MIT serve students who have an Individual Education Plan (IEP) for mathematics and already receive specialized help from a special education teacher?
KDE: All students are eligible to receive intervention services based on established criteria. The intervention program can supplement special education services for those students identified as potentially benefiting from the program. An Admissions and Release Committee (ARC) would need to determine if the program is appropriate. On-going monitoring over time is needed to further determine if the student is truly benefiting. A special education student with math goals and objectives on the IEP can be served by this program and taught by the MIT with collaboration from the special education teacher as determined by the ARC. If a district has trained a special education teacher to meet certification requirements to teach the math intervention program, the teacher can serve as math teacher for both special and general education students for up to two blocks of instructional time.
- 5.4 - Must an MIT serve a student whose behavior is disruptive to other intervention students? Must the teaching assistant (if applicable) of a student with an IEP for behavior/emotional disorder assist the MIT during the mathematics intervention class?
KDE: Whether a MIT serves a student whose behavior is disruptive to the other students depends on the individual school's behavior policy and how it handles disruptive students in other classes. Whether a teaching assistant should assist the MIT working with a special needs student would depend on the student's IEP.
- 5.5 - Must an MIT serve *all* students in *all* grades, K—3, who are “having difficulty.” What is the definition of “having difficulty?”
KDE: All primary grades must receive some kind of services. The MIT can directly serve only a limited number of students. However, the MIT should work with the regular classroom teachers to share strategies, model lessons, and provide activities to be used in the regular classroom. “Having difficulty” is defined by the school's requirements for identifying eligible students and students selected to be served. The students selected should be the students most at risk to not reach proficiency.

- 5.6 - May a school use MAF grant funds to pay for a prevention program for *all* students in P1 and/or P2 (kindergarten and first grade)? Or is the MAF grant limited to paying for a prevention program only for *struggling* P1 and/or P2 students?
KDE: Grant funds may not be used for prevention for the entire P1/P2 population. However, if the program has a built-in prevention component, then it could be used as the core program for P1/P2 struggling students.
- 5.7 - Although the grant requirements state that the intervention program must supplement the core mathematics program, may a school use a “prevention” program to supplant, rather than supplement, the core math program for struggling K/1 students?
KDE: If the school is using Number Worlds, it could be used as the core math program for struggling K/1 students as a prevention program. This is the only time the intervention program can replace the core mathematics program.
- 5.8 - May the MAF be used to pay for an MIT to work with students outside the regular schedule? If so, which students may participate?
KDE: MAF money may pay the MIT to work after school, but only with identified struggling primary students that the MIT does not otherwise see during regular school hours. The MAF funds were not put in place to provide ESS services in general. Since there are frequently more students that need intervention than can be served, an MIT could have an additional intervention group outside school hours, but the service is restricted to identified struggling students who do not participate in mathematics intervention during the school day. Further, an MIT may only work with identified struggling primary students after school provided that the group time does not interfere with a student's opportunity to attend ESS if they need tutoring in other subject areas.
- 5.9 - If a student receives intervention instruction directly from the MIT for 30 hours and has shown little or no progress, may an MIT permanently exit that student and allow the space for another struggling student?
KDE's position is that ultimately the school is responsible for making decisions about the best placement for students; however, students should not automatically be excluded from intervention services because they have special needs.

Part 6—Other Grant Implementation Questions

- 6.1 - When will a KDE representative visit the MIT's classroom?
KDE: At least once a year.
- 6.2 - What will the KDE representative look for when visiting the MIT's classroom?
KDE: Implementation of the program; documentation of expenditures; process of identifying students and evidence of progress. A Visitation Checklist with more details will be sent to the MIT before the visit.
- 6.3 - Will unused grant funds continue to be available after the end of the fiscal year, June 30, 2008?
KDE: Round 2 grant money may be encumbered until September 30, 2008 and paid out by December 31, 2008.
- 6.4 - Since the original grant proposal was successful, may a school assume that all parts of the plan are acceptable and legal?
KDE: No. KDE staff must review grants and budgets. Amendments will be required for areas of noncompliance.
- 6.5 - Is a school required to provide separate classroom space for the intervention program?

KDE: Yes, the MIT should have a separate classroom for the intervention program.

- 6.6 - Should a school hire a substitute intervention teacher if an MIT is absent for either short or long-term?

KDE: It is highly recommended that a substitute be hired when the MIT is absent due to the importance and value of the program. The MIT should have plans prepared for any scheduled absences and should have a set of plans/activities available for unexpected absences. A long-term substitute would need to receive training to implement the intervention program to its fullest intent.

- 6.7 - If an MIT must be replaced during the school year, how should the new MIT become highly trained?

KDE: KCM may consult on the training options, such as through the Regional Coordinator or through the company's training leader(s).

- 6.8 - May teachers other than the MIT teach the primary mathematics intervention program for struggling students?

KDE: No. The mathematics intervention and diagnostic assessment program is to be taught by a highly trained and highly qualified mathematics intervention teacher. Teachers who have received professional development training from the MIT can implement the strategies in the classroom but not teach the intervention program.

- 6.9 - May an administrator assign an MIT to be a reader/scribe during CATS testing?

KDE: In an ideal world, the MIT would be able to use the testing time to administer the required KCM assessments and/or to continue intervention teaching with P1-P3. However, it may be necessary for the MIT to serve as a reader/scribe during CATS testing. It is ultimately an individual school decision.

- 6.10 - May an administrator replace an experienced MIT in order to reduce the required salary payment?

KDE: An administrator may replace the MIT if she/he feels it is best for the program. However, the value of experience should be taken into consideration. Also, the cost of training the new MIT would not be paid by the Center and would be the responsibility of the school and/or grant. This could offset the expected savings in salary. Also, consider that the MIT salary will have to be paid either from the MAF or from the school's general fund, so there is essentially a net loss to the school (due to the additional re-training expense) for reassigning/replacing an experienced MIT.

- 6.11 - If an MIT leaves a school, who should keep the kits/materials that were purchased with MAFs?

KDE: If an MIT leaves the school, the kits/materials must stay with the school.

- 6.12 - Must an MIT order Number Worlds workbooks if they are implementing the Number Worlds program?

KDE: The workbooks are optional.

- 6.13 - If an MIT leaves a school, who should keep the kits/materials that were purchased with MAFs?

KDE: The materials are school property and should remain with the school.

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KCM's intent is to measure the effectiveness of the programs as implemented.

- If you teach Number Worlds, please refer to the implementation guide on the KCM/intervention/resources webpage. The hypothesis is that students of teachers who do not have the highest fidelity may have lower achievement gains than the students of teachers who modify as needed.
- Program fidelity will be measured by KCM in order to correlate the implementation decisions with the student achievement results.
- There will be no teacher accountability for implementation decisions, other than confidential reporting for the purposes of overall analysis.

*Results of observations and interviews will be reported without identifying schools or teachers.

Dates of Record

- Please keep thorough and accurate records on the DOR, starting with the DOR template found on the KCM/intervention/resources webpage.
- Change student status as necessary due to transiency. In the notes column, note that the student moved away or was switched from control to intervention.
- Contact Rachel, arnoldr2@nku.edu, if you have any questions about how to report student participation.

Terra Nova

Round 3 MAF Schools	<p>Fall 2008: Test all* intervention students and a control group (TBD--based on the lowest students at another school or a random sampling at your school).</p> <p>Mid-year: Test all students who enter or exit intervention.</p> <p>Spring 2009: Test all* intervention students and a control group.</p>
Round 2 MAF Schools	<p>Fall 2008: Test all* intervention students and a control group (TBD--based on the lowest students at another school or a random sampling at your school).</p> <p>Mid-year: Test all students who enter or exit intervention.</p> <p>Spring 2009: Test the 2007/2008 intervention students and all* the intervention/control students tested in fall 2008. Rachel will send you a past spreadsheet with 2007/2008 student details.</p>
Round 1 MAF Schools	<p>No testing in fall 2008.</p> <p>Spring 2009: Test all students who were previously tested, including 1st–5th grade intervention and comparison students from the 2006/2007 and 2007/2008 school years. Rachel will send you a past spreadsheet with student details.</p>

*All intervention students should be tested in the fall and in the spring, even if they are only receiving intervention for part of the school year. This means that some students may have 3 tests: fall, mid, and spring.

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Section

6

Student Identification

- KCM has developed an assessment list that may be helpful to schools wanting to identify struggling students. The website is:
<http://kymath.org/docs/kcm/AssessmentListnov132006.xls>.
- Schools will decide on the recommendation/assessment process for determining which students will receive intervention services.
- Many schools use the GMADE or MAP assessment for identification of struggling students, but that is optional.
- Grant funds will pay for the assessments for all students, provided the purpose of the test is to identify struggling primary students. If you choose to purchase booklets and scoring for Terra Nova, you will have faster, more comprehensive results which may supplant the KCM testing requirement.
- Number Worlds and Math Recovery each contain a screening interview and diagnostic interviews that can be used (alone or in conjunction with other assessments) to identify struggling primary students.
- Students exit Math Recovery after receiving 40 to 60 lessons. Students may exit Number Worlds if they score higher 75% or higher on the placement tests of untaught units or if the MIT gathers other evidence (GMADE, MAP, Number Worlds unit/comprehensive test etc.) of student progress that indicates no further intervention is needed.
- The required Terra Nova test will be administered to all intervention students at the beginning of the school year and will not be scored quickly enough for use in identifying struggling students who need intervention services.
- Keep in mind that at the beginning of the school year many students may score low on that grade--level test because they have not yet been taught that grade—level content. A lower-level assessment may give the best indication of which students have not mastered the previous grade—level content.

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- Math Recovery lessons are designed to fit the student's zone of proximal development for number, so there are no placement considerations.
- Most intervention students in Number Worlds are placed according to grade level (into content that is below grade level):
 - K—Level B (1 book), prevention
 - 1st—Level C (1 book), prevention
 - 2nd—Level D (6 units), intervention
 - 3rd—Level E (6 units), intervention
- However, Number Worlds placement tests **may** be given to further determine the best units and level for each specific child. Scores of 75% and higher indicate that a student does not need that unit. The MIT should use professional judgment in ultimately deciding the best placement for each intervention student. Although individualized placement may be a scheduling challenge, most teachers appreciate that student need is the first priority.
- Number Worlds author, Sharon Griffin, offered an alternate, optional method of determining proper placement in the Number Worlds program, based on the results of the Number Knowledge Test:
 - Score of 3—4 years→ place in level A
 - Score of 4—5 years→ place in level A (or B, if close to ceiling)
 - Score of 5—6 years→ place in level B (or C, if close to ceiling)
 - Score of 6—7 years→ place in level C (or D, if close to ceiling)
 - Score of 7—8 years→ place in level D (or E, if close to ceiling)
 - Score of 8—9 years→ place in level E

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- Recommended group size: 5 students
- Recommended lesson length: 45 minutes to one hour per day
- Recommended computer time for Building Blocks/eMath Tools software: 10 to 20 minutes per day
- Students may exit after one unit or continue the program indefinitely.
- Students may not be pulled from the regular math class.
- Levels A—C are for “prevention” and may supplant the core curriculum for struggling students (typically this is K/1), if the school concludes that the Number Worlds prevention levels will fully prepare struggling students for second grade mathematics. Most of our schools are using levels A—C as a supplemental to the regular core program.
- Levels D and E are for supplemental “intervention” and may not supplant the core curriculum for struggling students (typically this is grades 2 and 3). Struggling students may not be pulled during regular math class.
- Number Worlds author Sharon Griffin has enlisted Kentucky MITs to pilot revised units for Levels D and E (Patterns, Addition, Subtraction) and has recommended that they skip the week on Perimeter in the Geometry units. The KCM will supply copies of pilot units for \$20 per level.
- See the KCM/Intervention/Resources webpage for sample schedules.

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- MITs may earn graduate credit for their work toward Math Recovery Specialist Certification.
- First grade students are taught one-on-one for 30 minutes per day. Each student requires 60-75 minutes per day of teaching/reflection/planning time.
- Students exit intervention after 30 hours (60 lessons) or less of intervention instruction.
- All lessons are videotaped for review by the MIT for daily planning and for sharing during Collegial Team Meetings.
- See the KCM/intervention/resources page for suggested video technology components.
- MITs may teach small groups of students in addition to the one-on-one sessions.
- Teachers use an instructional framework to plan lessons.
- Lessons are focused on developing number concepts and skills.
- MITs may visit primary classrooms and collaborate with primary teachers in improving the mathematics program.
- Students may not be pulled during the regular math class.
- After becoming a certified specialist the MIT may become an official Add+Vantage Math Recovery Champion and a SNAP Facilitator, certified to train other primary classroom teachers. After year—two the MIT may become a Math Recovery Leader who is certified to train Math Recovery Specialists.
- See sample schedules on the KCM/intervention/Resources webpage.

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