Communities In Schools of North Carolina is leading the national network in providing the most effective student supports and wraparound interventions and supports directly in schools to support students and teachers. Working collaboratively with 400 schools across North Carolina, Communities In Schools impacts the lives of more than 230,000 youth each year. Driven by research-based practices surrounding the best predictors of student success – attendance, behavior, coursework and parent and family engagement – Communities In Schools is changing the picture of education for students across North Carolina. Learn more about Communities In Schools of North Carolina at www.cisnc.org.

The Nonprofit Evaluation Support Program (NESP) is a collaborative effort between two University of North Carolina Greensboro organizations – The SERVE Center and The Office of Assessment, Evaluation, and Research Services (OAERS). NESP's mission is to provide program evaluation services and program evaluation capacity building support to nonprofit and community-based organizations while providing authentic learning experiences for future leaders in the field of program evaluation.

The SERVE Center at The University of North Carolina Greensboro is a university-based research, development, dissemination, evaluation, and technical assistance center. For more than 24 years, SERVE Center has worked to improve K-12 education by providing evidence-based resources and customized technical assistance to policymakers and practitioners.

The University of North Carolina Greensboro (UNCG) is one of the sixteen university campuses of The University of North Carolina. UNCG holds two classifications from the Carnegie Foundation for the Advancement of Teaching, as a "research university with high research activity" and for "community engagement" in curriculum, outreach, and partnerships.

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Overview

CISNC Introduction

In the 2014-2015 school-year, Communities In Schools of North Carolina (CISNC) introduced a framework that aligns site and student metrics and interventions and supports to four areas that have been shown to have the greatest impact on student success: attendance, behavior, coursework, and parent involvement, or ABC+P. Both combined and individually, attendance, behavior, and coursework are among the best predictors of a student's academic success and on-time graduation. While collecting data around ABC+P is critically important to understanding the school and student, it is even more important to use the data to drive high impact intervention and support delivery to empower each student to reach their full potential. To this end, Communities In Schools of North Carolina has partnered with the SERVE Center at the University of North Carolina at Greensboro to design curricula specifically for CIS within the ABC+P framework to enhance student outcomes in school and success in life. This document is one of more than 50 modules developed to support local CIS staff and most importantly the students that are served. We encourage you to explore all of the modules available online at www.cisnc.org.

Using Evidenced-Based Strategies

There are a multitude of strategies that claim to address coursework, but there are few that actually do so for all students. We suggest that schools use an evidence-based, decision-making model to ensure that high quality information informs the decisions made.

The Institute of Education Sciences (IES) at the U.S. Department of Education defines evidence-based decision making as routinely seeking out the best available information on prior research and recent evaluation findings before adopting programs or practices that will demand extensive material or human resources (including both funding and teacher time) and/or affect significant numbers of students (Whitehurst, 2004).

CISNC uses the Response to Intervention (RTI) framework as the basis for its practices. RTI is a multitiered framework of academic and behavioral interventions that require school staff to make instructional decisions based on data. This document focuses on a Tier 2 strategy. Tier 2 strategies typically focus on students who have not responded to Tier 1 supports and includes supplemental instruction and interventions that are periodically monitored to ensure students are responding to the supports. Tier 2 supports are targeted, structured, explicit, and can take place in small groups or general education classrooms.

CISNC calls for the use of evidence-based interventions versus generally researched practices. The National Center on Response to Intervention (NCRTI) defines evidence-based interventions as:

> … an intervention for which data from scientific, rigorous research studies have demonstrated (or empirically validated) the efficacy of the intervention.

> Applying findings from experimental studies, single-case studies, or strong quasi-experimental studies, an evidence-based intervention improves student learning beyond what is expected without that intervention (Center on Response to Intervention [Center on RTI] at American Institutes for Research and the National Center on Intensive Intervention (NCII), 2014, p. 4).

Whereas a research based curricula "may" incorporate strategies that have been generally researched, but not studied using a rigorous research design. The following suggestion is based on interventions that have been studied using a scientific, rigorous research design. When incorporated with fidelity and as a part of a systematic process, students should positively respond to these strategies.

This document is written to provide intensive coursework interventions based on the best evidence from prior research and recent evaluations in elementary schools. In the context of our review, we propose two interventions designed to help struggling elementary students:

- Coursework – Supplemental Mathematics
- Coursework – Supplemental Reading

This document will focus on one easy to implement math intervention for elementary schools.

Problem/Rationale

The Common Core State Standards for elementary and secondary education have been implemented to ensure that students are college and career ready for a globally competitive society upon high school graduation. Currently, more than 40% of students are leaving high school without being college and career ready (Achieve, 2012). In conjunction with these standards, many states have also instituted universal screening mechanisms to verify that students are achieving proficiency in key subject areas, as well as to accurately identify students with learning difficulties so that additional support may be provided.

One area of national concern is mathematics achievement. Mathematics is an important part of basic life skills such as buying groceries or making a household budget, and is an integral part of understanding other subject areas such as science and economics. Nationally, more than 58% of elementary students are not demonstrating proficiency in mathematics (National Center for Education Statistics, 2013). In other words, millions of elementary students are struggling to demonstrate what they know about and can do with number properties and operations, measurement, geometry, data analysis, and algebra. Moreover, even with quality classroom instruction, some students still struggle with the core curriculum and require additional instructional support to be successful at school.

The Institute for Education Sciences provides the following recommendations for interventions designed to support students who struggle with mathematics (Gersten et al., 2009).

- Instructional material should provide in-depth focus on whole numbers in K-5 and rational numbers in grades 4-8.
- Instruction should be explicit and systematic, providing models of problem solving, verbalization of thought processes, guided practice, corrective feedback, and frequent cumulative review.
- Instruction on solving word problems based on common underlying structures.
- Instruction materials should include visual representations of mathematical ideas.
- At least 10 minutes each session should be devoted to fluency in math facts.

In addition to regular screening (fall, winter, spring) to identify students who fall below benchmark scores or are not making satisfactory progress with the core curriculum, targeted and sustained interventions should be provided to struggling students, based on individual need, over an extended period of time. The intervention should involve frequent checking and monitoring of the student's academic growth measures, faithful implementation of the core curriculum and supplemental instruction in targeted areas, and data-based decision making (Lembke, Hampton & Beyers, 2012).

Purpose

The purpose of this document is to focus on one easy to implement intervention that can be used in elementary schools. Student Support Specialists can supplement struggling students' math development through:

- Intensive small group tutoring.
- Additional intervention strategies for schools.
- Tools and resources to share with students, schools and families.

Implementation Plan

Uses

Elementary schools can use the sample intervention plan to assist at-risk students in improving their math performance and academic outcomes. As identified in the sample, there may be times when the Student Support Specialist, teacher, or other instructional and support staff will assume primary responsibility for a component of the intervention, while at other times, additional school staff such as a School Intervention Team will be collectively responsible for aspects of implementation of the intervention. Such distinctions will be noted in the sample intervention.

Audiences

The primary audience for this intervention is elementary students (K-2).

Materials/Equipment/Space

- Student screening/assessment results
- Teaching space for small groups of 3-5 students
- 3-5 small dry erase whiteboards for student practice
- Curriculum-Based Measurement (CBM) worksheets with sample problems for each topic session (4 per week)
- Small prizes for treasure box (e.g., pencils, erasers, stickers, etc.)

Note: For presentations, check for access to computer, Smartboard or data projector and screen, relevant power cords, and remote slide advancer.

Time

- 30 minutes, 3-4 days per week for 15 weeks.

Sample Intervention – Small Group Math Tutoring

Activity	Decision Making Level	Process Notes
Create an intervention portfolio for each student. - Closely examine individual student data to identify which topical areas require additional instruction (e.g., math facts, operations, etc.).	Assumes the Student Support Specialist (SSS) is working in collaboration with the school's intervention support team (IST) and an Individualized Student Plan (ISP) has been developed for the student.	*The intervention support team (IST) is a school-level team that serves as the primary problem solving team for all types of academic and behavioral learning issues. The team should include the classroom teacher, parent, resource or specialists as needed, guidance counselor, and principal (or designee).* *The Student Support Plan (SSS) is the needs-based plan of CISNC supported intervention/services provided to students who have been identified as needing targeted (tier 2) or intensive (tier 3) interventions and supports to be successful in school and life.* *Sample data sources include: benchmarks/curriculum based measurements (CBMs) such as EOG, EVAAS, PowerSchool, kindergarten registration screening, other assessment data, as well as attendance and disciplinary records.*
Establish intervention framework. - Determine session days, length and location to be held. Small group meeting time should be held at a time when core math instruction	Student Support Specialist and Intervention Support Team	*Ensure that students included in the small group are all matched at the right intervention level and with students at the same level of need. For example, you would not match kindergartners with 2nd graders even though they may need the same level of math support as this would likely cause*

Activity	Decision Making Level	Process Notes
is not taking place. - Create small groups of 3-5 students. Match by grade level, proficiency, curriculum area weakness, etc. - Meet with parent to inform about intervention and ways they can help student at home.		*additional stressors for the 2nd grade student.* *Consider a behavior management system for small group sessions, such as a group reward. Place marbles in a jar for satisfactory group work at the end of every session. At the end of the week, if the group has collected a certain amount of marbles, they get to choose small prizes from the treasure box.*
Determine curriculum content and choose curriculum (scope and sequence). - Should provide explicit instruction on whole numbers (e.g., counting strategies, place value, addition, subtraction, operations, etc.) and solving word problems (e.g., change problems, compare problems, etc.). - Consider curriculum that provides materials to model or think through difficult and easy examples. - Required teaching resources and supplies should also be secured at this time.	Intervention Support Team	*Many schools may already have access to some of the most effective math curriculum based programs. Work with the IST to identify targeted supplemental materials.* *Sample 15-week "Number Rockets" intervention scope and sequence (adapted from Rolfhus et al., 2012).* *Week 1 - Identifying and Writing Numbers* *Week 2- Identifying More and Less Objects* *Week 3 - Sequencing Numbers* *Week 4 - Using <, >, and =* *Week 5 - Counting by 10s, 5s, and 2s* *Week 6 - Place Value* *Week 7 - Identifying Operations* *Week 8 - Writing addition and subtraction sentences* *Week 9 - Place Value* *Week 10 - Addition Facts* *Week 11 - Subtraction Facts* *Week 12 - Place Value Review* *Week 13 - 2-digit addition* *Week 14 - 2-digit subtraction* *Week 15 - Missing Addends* *Most used curriculum sources:* - *Illuminations (free resources) (http://illuminations.nctm.org/)* - *GoMath! Strategic Intervention (http://www.hmhco.com/country/us/north-carolina/math)* - *PALS (https://kc.vanderbilt.edu/pals/)* - *Number Rockets (http://vkc.mc.vanderbilt.edu/numberrockets/)* - *VMath (http://www.voyagersopris.com/curriculum/subject/math/)*
Meet with small groups each week at designated day(s) and time(s).	Student Support Specialist	*The Student Support Specialist may need to have had several conversations with the student prior to the small group to begin*

Activity	Decision Making Level	Process Notes
- Conduct 3-4 sessions each week (30-min each session). - Assess for mastery at the end of session 2. - If student has mastered the material, review prior week content. - If student has not mastered the material, continue additional strategy instruction (sessions 3/4).		*building rapport.* *Use curriculum based worksheets to assess mastery.* *Keep worksheets in student portfolio.*
Sample Session Format Step 1: Introduce the standard strategy for the topic. (10 mins) - Think aloud as you explain the strategy and work through each step of a problem. - Use visual representations to make the concept concrete. Step 2: Work through several problems with students using the strategy. (5 mins) - Have students repeat the steps in the strategy as you work through the problems together. Step 3: Have students work on some problems in pairs and independently to implement the strategy on their own. (10 mins) - Have students work in pairs and use the whiteboards to demonstrate their work on a practice problem to each other. - Students work on remaining problems on worksheet. Check worksheet for mastery at the end of session 2. Step 4: Check student work. Ask simple questions to provide specific feedback on correct processes and areas that need improvement. (5	Student Support Specialist	*Conduct a quick screener (30 seconds) to assess students' knowledge of the topic and/or beginning point for group instruction.* *Say: Today we will be working on counting. Let's count to 20 by 2s.* *Step 1 models the strategy for the student. Use math vocabulary and teach for fluency and understanding. Use alternative teaching aids such as objects, blocks or flash cards to drill students on place value (e.g., how many places does this number have?), counting, sequencing numbers, etc. to cement the concept.* *Step 2 provides guided practice for students. Ask students to tell you what you should do first to solve the problem.* *Step 3 provides extensive practice for the student to use the strategy on their own.* *Step 4 guides the student to solving the problem correctly. It may also include re-teaching or clarifying instructions.* *Consider allowing students to graph their daily/weekly progress on a bar graph. Students can use crayons to color the number of correct problems on their worksheet each day.*

Activity	Decision Making Level	Process Notes
mins) - Praise students for their hard work. - Distribute group rewards at the end of each week. <u>Note</u>: Modify step 3 above for sessions 3 & 4 as needed. For example, allow 5 mins for paired work and 5 mins for independent work. - Use CBM worksheet for independent work to check student progress at the end of each session. - If content not mastered, continue topic next day and assess at the end of session 3 in the same format.		
When a student reaches mastery on a topic: - Use additional time to reinforce or review work from previous sessions. - Excuse student from remaining sessions on particular topic.	Student Support Specialist (predetermined with IST).	*Questions to consider:* - *Is the student getting better on the targeted areas?* - *What score is mastery (e.g., 90%)?*
Monitor student progress. - At end of 8 weeks. • If student is responding to intervention (consistently reaching mastery after session 2 assessments), return to regular class. • If student is not responding, continue for additional 7 weeks. - At end of 15 weeks. • If student is responding, return to regular class. • If student still is not reaching mastery, determine if additional supplemental instruction is needed or whether to refer student for more intensive intervention. - After the intervention.	Student Support Specialist (predetermined with IST).	*Progress monitoring provides a valid picture of overall growth in math proficiency. Progress monitoring, e.g., talking with teachers, reviewing performance, attendance, or disciplinary data should be reviewed at a frequency that matches the risk and need of the student. It can also indicate when a student may no longer need the intervention or to regroup students who continue to need the intervention at different levels/targeted areas.* *Establish intervention benchmarks to monitor overall student progress.* - *8 weeks – IST reviews student intervention portfolio, classroom work, behavior charts, etc. to assess impact of intervention.* - *15 weeks – IST determines whether intervention was successful for the student. If no, refer for more intensive intervention.* - *If intervention is successful, student*

Activity	Decision Making Level	Process Notes
		returns to regular classroom. What will ongoing monitoring look like (e.g., weekly follow-up with the teacher and/or touching base with the student to ensure that the student continues to do well)?

Suggested Supplemental Activities

- Plan professional development days to train school staff on the intervention framework.
- Develop an intervention support team to facilitate intervention (if the school does not already have one in place).
- Conduct a school-wide self-assessment/readiness to implement specific components and practices (e.g., screening and monitoring, core math topics to be covered during interventions, systematic and intensive instruction in tiered interventions).
- Plan regular data days to review the results of screening, benchmark, and/or end-of-year assessments.

Resources

The following resources are identified as part of the intervention. Read through these resources carefully to become familiar with any concepts and instructions as they pertain to the content and intervention.

North Carolina Public Schools Standard Course of Study for Mathematics
http://www.ncpublicschools.org/docs/acre/standards/common-core/standards-k-12.pdf

Rolfhus, E., Gersten, R., Clarke, B., Decker, L., Wilkins, C., & Dimino, J. (2012). *An evaluation of Number Rockets: A Tier 2 intervention of grade 1 students at risk for difficulties in mathematics.* (NCEE 2012-4007). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
http://ies.ed.gov/ncee/edlabs/regions/southwest/pdf/REL_20124007.pdf

The following resources will provide additional information and suggestions for enhancing intervention activities and using data for decision making. Read through the resources carefully to become familiar with the information, any concepts and instructions as they pertain to the content and the extension of activities, and to determine their level of usefulness to the specific intervention.

Center on Response to Intervention
http://www.rti4success.org/

Doing What Works Library
Doing What Works helps educators understand and use research-based practices. This library includes interviews with researchers and educators, multimedia examples and sample materials from real schools and classrooms, and tools that can help educators take action.
http://dwwlibrary.wested.org/

Gersten, R., Beckmann, S., Clarke, B., Foegen, A., Marsh, L., Star, J. R., & Witzel, B. (2009). *Assisting students struggling with mathematics: Response to intervention (RtI) for elementary and middle schools* (NCEE 2009-4060). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
http://ies.ed.gov/ncee/wwc/pdf/practice_guides/rti_math_pg_042109.pdf

Intervention Central

Intervention Central provides teachers, schools and districts with free resources to help struggling learners and implement Response to Intervention and attain the Common Core State Standards.
http://www.interventioncentral.org/

Note: All posters, images, and activity guides identified are copyright cleared for non-commercial use.

Measuring Success

Identifying outcomes and collecting data to measure the success of the intervention can help track the quality of implementation as well as the effectiveness of the intervention. In addition to state/district benchmark assessments, following are some additional suggestions that may be useful to measure success.

- General student outcomes
  - Curriculum-Based Measurements
  - Weekly progress monitoring
  - Attendance and/or disciplinary reports
- Content mastery
  - Assess student rate of progress (e.g., # sessions for student to attain consistent mastery)
- Observations (Student Support Specialist, teacher)
  - Student engagement and effort
  - Documented conversations with teachers, other school personnel, student, etc.
- Fidelity of implementation
  - Fidelity to lesson plan/sessions
  - Length of time per session
  - Effectiveness of intervention curriculum
- Parental feedback

Appendices

A. References

B. Research Alignment

Appendix A: References

Achieve (2012). *How well is North Carolina preparing all students for college, careers and life*. (Slide deck). Retrieved from http://www.achieve.org/north-carolina

Center on Response to Intervention (Center on RTI) at American Institutes for Research and the National Center on Intensive Intervention (NCII), (March 2014). *RTI glossary of terms*. Center on RTI and NCII: Washington, DC.

Gersten, R., Beckmann, S., Clarke, B., Foegen, A., Marsh, L., Star, J. R., & Witzel, B. (2009). *Assisting students struggling with mathematics: Response to intervention (RtI) for elementary and middle schools* (NCEE 2009-4060). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieve from http://ies.ed.gov/ncee/wwc/pdf/practice_guides/rti_math_pg_042109.pdf

Lembke, E. S., Hampton, D., & Beyers, S. J. (2012). Response to intervention in mathematics: Critical elements. *Psychology in the Schools, 49*(3), 257-272.

National Center for Education Statistics (2013). *The nation's report card: A first look: 2013 mathematics and reading* (NCES 2014-451). Institute of Education Sciences, U.S. Department of Education, Washington, D.C. Retrieved from http://nces.ed.gov/nationsreportcard/subject/publications/main2013/pdf/2014451.pdf

Rolfhus, E., Gersten, R., Clarke, B., Decker, L., Wilkins, C., & Dimino, J. (2012). *An evaluation of Number Rockets: A Tier 2 intervention of grade 1 students at risk for difficulties in mathematics.* (NCEE 2012-4007). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieve from http://ies.ed.gov/ncee/edlabs/regions/southwest/pdf/REL_20124007.pdf

Whitehurst, G. J. (2004, April). *Making education evidence-based: Premises, principles, pragmatics, and politics.* Evanston, IL: Northwestern University Institute for Policy Research, Distinguished Public Policy Lecture Series. Retrieved from http://www.northwestern.edu/ipr/events/lectures/DPPL-Whitehurst.pdf

Appendix B: Research Alignment

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
Bryant, D. P., Bryant, B. R., Roberts, G., Vaughn, S., Pfannenstiel, K. H., Porterfield, J., Gersten, R. (2011). Early numeracy intervention program for first-grade students with mathematics difficulties. *Exceptional Children*, *78*(1), 7-23.	The purpose of this study was to determine the effects of an early numeracy preventative Tier 2 intervention on the mathematics performance of first-grade students with mathematics difficulties. The early numeracy intervention program focused on number and operation mathematical ideas, including problem solving, that were drawn from prominent sources on mathematics instruction. Activities included: counting sequence, counting	204 students; 139 in the treatment group and 65 in the control group.	The treatment group performed better than the comparison group on addition and subtraction combinations, $p < .0001$; place value, $p < .002$; number sequences, $p < .00001$; and the Texas Early Mathematics Inventories-progress Monitoring (TEMI-PM) total score, $p < .01$. There was no group difference on problem solving measures. By the end of first grade, 45% of treatment students and 22% of comparison students were no longer at risk for mathematics	At the beginning of the academic year, the PI provided a three hour training to teachers on the intervention lessons and instructional materials. There were 11 units of instruction; each unit included 8 days of lessons. Each instructional day included a warm-up and two scripted lessons. Each of the two daily lessons was 10 min in length, while the warm-up was 3 minutes and consisted of fluency activities on previously taught skills. There was also a behavior management

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
	principles, number knowledge and relationships, partitioning and grouping of tens and units, and numerous opportunities for students to learn about combining and separating sets and working with basic facts.		difficulties.	contingency system in place. Students had to meet the criteria of "Math Ready" before earning reinforcement. Tutoring sessions also occurred 4 days a week for 25 minutes per session (when time permitted) for intervention students.
Gilbert, J. L., Compton, D. L., Fuchs, D., Fuchs, L. S., Bouton, B., Barquero, L. A., & Cho, E. (2015). Efficacy of a first-grade responsiveness-to-intervention prevention model for struggling readers. *Reading Research Quarterly*, *48*(2), 135-154.	This study examined the efficacy of a multi-tiered supplemental tutoring program for struggling first grade readers. The RTI model for this study combined several aspects: identified at risk students, monitored progress to make decisions about responsiveness,	Struggling first-grade readers (n = 649) were screened and progress monitored at the start of the school year. Those identified as unresponsive to general education Tier 1 (n = 212) were randomly assigned to receive Tier 2 small-group supplemental tutoring (n = 134) or to continue in Tier 1 (n = 78). Progress-	All groups made gains from pretest to posttest on all measures (word identification word attack, sight-word efficiency, and phonemic decoding efficiency), but some gains were higher than others. Results concluded that for students who were deemed at risk for	The instructional focus of the activities included in the supplemental, remedial tutoring program were letter-sound correspondence, sight-word recognition, phonemic awareness, decoding, spelling, and reading fluency. Tier I: whole class format. Tier II: small-group

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
	determined students' instructional needs and formed homogeneous groups for instruction, provided targeted explicit and systematic instruction, and implemented a multitier program for tutoring.	monitoring data were used to identify non-responders to Tier 2 (*n* = 45), who were then randomly assigned to more Tier 2 tutoring (*n* = 21) or one-on-one Tier 3 tutoring (*n* = 24).	reading difficulties because of their nonresponse to Tier 1 instruction, supplemental reading tutoring was beneficial. Students who received tutoring (Tiers 2 and 3), on average, had significantly greater change scores than did students who received reading instruction only in their classrooms (Tier I). At the end of grade 1, slightly more students in Tier 2 (59%) scored in the average range on word reading than did students in Tier 1 (53%). There was no significant difference for students who	format with tutoring provided as a supplement 3 times a week in 45 minute sessions. Tier III: more intensive than Tier II; one-on-one tutoring format daily.

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
			received Tier III tutoring compared with those who received Tier II tutoring.	
Hooper, S. R., Costa, L., C., McBee, M., Anderson, K. L., Yerby, D., Childress, A., & Knuth, S. B. (2013). A written language intervention for at-risk second grade students: A randomized controlled trial of the process assessment of the learner lesson plans in a tier 2 response-to-intervention (RtI) model. *Annals of Dyslexia: An Interdisciplinary Journal of The International Dyslexia Association*, *63*(1), 44-64.	The study examined the use of the PAL lesson plans in second grade students at risk for later writing problems, and the subsequent developmental trajectory of overall writing scores across multiple time points from grades 1 through 3. At-risk students were defined as falling at or below the 25th percentile for their grade placement.	205 total students; 138 at risk students, randomized into treatment (n=68) vs business as usual (at-risk, non-treated), n=70. A typical group also was included (control group), n=67.	All three of the groups demonstrated growth in their writing skills over time for both the linear and curvilinear trajectories. Contrasts between the three groups showed the treatment effect was significant only on the quadratic component of the slope. The quadratic component represents an acceleration parameter, indicating that the treatment induced acceleration in the rate of writing skill acquisition for treated participants. The treatment group had a	All students received written language instruction via the regular classroom setting in a business-as-usual (BAU) model. Students assigned to the treatment groups also received the Process Assessment of the Learner (PAL) lesson plans in a small group format (3-6 students) in accordance with a Tier 2 intervention model, twice a week for 12 weeks. The intervention sequence employed the PAL Reading and Writing Lesson Sets 4 and 7

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
			significant growth rate of writing skills acquisition at grade 1.5 and 3.5, compared to the at-risk untreated group.	which comprised three sections: sub-word level—Talking Letters, word level—Spelling, and text level—Handwriting and Composition.
Johnson, E. S., Hancock, C., Carter, D. R., & Pool, J. L. (2012). Self-regulated strategy development as a tier 2 writing intervention. *Intervention in School and Clinic, 48*(4), 218-222.	The purpose of this study is to describe one schools' journey to implement a Self-Regulated Strategy Development (SRSD) model to improve the writing strategies/skills of struggling 4th grade students. The basic stages of instruction outlined for SRSD include: developing and activating background knowledge, discussing the strategy, cognitive modeling of the	7 students.	By the end of 12 weeks, four of the seven students met the goal of the TWW performance at the 50th percentile. Two of the remaining three had performances just below the 50th percentile.	Mountain View Elementary School decided to focus its writing intervention on : the story writing strategy and the opinion essay strategy to help develop students' writing abilities in both narrative and expository genres. The students were pulled from the end of their 90 minute reading block to attend SRSD intervention 4 days per week for 30 minutes each day.

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
	strategy, memorization of the strategy, collaborative support of the strategy, and independent performance. In addition to these stages of writing instruction, four basic strategies for self-regulation are emphasized: goal setting, self-instruction, self-monitoring, and self-reinforcement. Fourth grade students were chosen because they had the highest percentage of students not meeting proficiency level and scoring below the 25th percentile on the total words written (TWW) measure.			In general, the intervention provider followed the steps, sample scripts, and lesson plans as presented in the *Powerful Writing Strategies for All Students* text. In addition to the writing strategies, students were taught to use the self-regulation strategies that include monitoring their own use of the strategies, reviewing their own writing, reviewing their peers' writing, and thinking of themselves as writers. An overall "getting started" strategy of Plan, Organize, Write (POW) was presented, and then various mnemonics were taught based on the specific writing genre. For example, the

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
				strategy POW + WWW (Plan, Organize, Write + Who, When, Where) was used for story writing, and the strategy POW + TREE (Plan, Organize, Write + Topic sentence, Reasons, Explain Reasons, Examine Ending) was used for opinion essays. Weekly progress monitoring measures were implemented using the TWW.
Ritchey, K. D., Silverman, R. D., Montanaro, E. A., Speece, D. L., & Schatschneider, C. (2012). Effects of a tier 2 supplemental reading intervention for at-risk fourth grade students. *Exceptional Children*, *78*(3), 318-334.	This study evaluated the effects of a 24-session multicomponent supplemental intervention targeting fluency and expository comprehension of science texts.	123 4th grade students identified as having a high probability of reading failure; 57 in the intervention group and 66 in the control group.	Intervention students performed significantly higher on science knowledge and comprehension strategy knowledge and use, but not on word reading, fluency, or other measures of reading comprehension.	The intervention occurred for 2 consecutive years and consisted of 24 scripted lessons implemented over 12 to 15 weeks. Intervention was provided in three 40-min sessions per week in groups of two to four students. Intervention

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
			Moderator results suggested that children at higher risk in the intervention condition appeared to benefit more in comparison to lower probability children in intervention and compared to higher probability children in the control condition.	was provided in addition to general reading instruction provided by the classroom teachers. Tutoring by graduate research assistants was also provided. Fluency: students engaged in repeated reading, with a tutor, using a passage read in the previous lesson, for 5 to 7 min of the session. Next, students engaged in repeated reading individually or with a partner. Each lesson alternated between students rereading the passage for 3 min individually and rereading the passage with a partner (2 min per student). Comprehension: each lesson included explicit

Citation	Brief Summary of Strategy	Sample Size	Impact/Evidence of Effectiveness	Implementation
				comprehension instruction, vocabulary instruction, and text instruction and was approximately 25 to 30 min per session. Vocabulary: tutors introduced two to Four words in each lesson, following the instructional protocol for teaching vocabulary in context.
Valenzuela, V. V., Gutierrez, G., & Lambros, K. M. (2014). Response to intervention: Using single-case design to examine the impact of tier 2 mathematics interventions. *School Psychology Forum: Research in Practice*, *8*(3), 144-155.	This study assessed the effectiveness of a Tier 2 standard mathematics intervention using evidence-based mathematics instructional strategies along with Touch Math to illustrate how schools may use this approach to address the needs of struggling	4 second grade students.	ROI: the rate at which an average student is expected to improve given typical instruction. One of the students met the goal of an increase of +1.5 ROI and at least +12 overall in M-COMP by the end of the 8 week intervention. The	Tier 2 of the intervention was 8 weeks. Four skills were taught during the 8 weeks of Tier 2 intervention: single-digit addition, double-digit addition, single-digit subtraction, and double-digit subtraction. Students were pulled out of their classes twice a week for a small group

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	students. The strategies used were number sense instruction, modeling procedures, guided math drill and practice of addition and subtraction facts, corrective feedback, and reinforcement for on-task behavior. Touch Math is an elementary-level instructional strategy for teaching number concepts and involves the association of numerical quantity with the visual representation of that number. Teachers recommended their lowest achieving math students in need of additional small group		student's initial baseline score was 9.5 and increased to 31. The second student had a baseline score of 8. He needed a score of 20 to reach his goal. He increased to a score of 15 and was deemed a "responder". He remained in the intervention for an additional 6 weeks. After a total of 14 weeks, he met the goal and achieved an ROI of +1.57. The third student's baseline score was 5.5. She needed to score a 17.5 to reach her goal. At the end of the first intervention she had only increased to a score of 8. It was determined that she	intervention of 30 minutes per session. The first session was devoted to teaching the correct touch points for probe numbers 1–9. In subsequent sessions, students practiced the touch points for the first 5 minutes and then were explicitly taught how to use the strategy to solve computation problems through direct instruction and modeling for the next 10 minutes. For non-responders, Tier 2 of the intervention was implemented for an additional 6 weeks. It was identical to the initial Tier 2 intervention with the exception of an increase in intensity. Motivational strategies included verbally

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	support.		was a "low responder". She remained in the intervention for an additional 6 weeks. By the end of the 14 weeks, her ROI was +3.1. The last student had a baseline score of 3.5. At the end of the 8 week intervention, he had not met his goal and was considered a "low responder". He received an additional 6 weeks of the intervention. Although he did not meet the goal of a +1.5 ROI, it did increase to +1.04 from +0.15.	praising each student for his or her participation in practicing the correct touch points and reinforcing on-task behavior during instruction. Tally marks on Post-it notes were recorded for engagement during guided practice and completion of math tasks. Once students accumulated a certain number of tally marks each week, they were rewarded with the opportunity to choose a tangible item from a treasure chest filled with pencils, erasers, and small toys.