



Reading Case Study #2

Grade Four: Comprehension

Devin Kearns

Grade Four: Comprehension

Purpose of Case Study

The purpose of this case study is to highlight the integral role that progress monitoring (PM) plays throughout any Response to Intervention (RTI) process. This example uses a three-level, responsiveness-to-intervention (RTI) method for identifying students with learning difficulties. Using a fictional Grade 4 classroom as the setting for this example, you are provided with a framework of the RTI identification process, along with frequent opportunities to check your comprehension of the information presented. First, an overview of RTI and PM is provided, followed by an introduction to a fictional school district implementing RTI. Then, a fictional school and fictional teacher are described. Finally, the use of PM in RTI is described using data from the classroom of the fictional teacher.

Overview of RTI

Public school systems in the United States rely largely on two methods for identification of students with learning disabilities (LD). The first method is the traditional IQ/achievement discrepancy, in which students must demonstrate, through formal psychometric evaluation and professional observation, a significant disparity between cognitive ability and actual academic performance level. The second method allows diagnosticians and educators to use “responsiveness-to-intervention,” or RTI, as an alternate method of LD identification.

RTI Model

Increasingly, states and school districts are considering RTI as an identification method for LD. The RTI method looks at student unresponsiveness to otherwise effective instruction. With RTI, special education is considered only if a student’s performance reveals a dual discrepancy in terms of level and rate: The student a) performs below the *level* demonstrated by classroom peers, and b) demonstrates a learning *rate* substantially below that of classmates.

RTI takes into account that educational outcomes differ across a population of learners and that low-performing students may ultimately perform less well than their peers. All students do not achieve to the same degree of academic competence. However, simply having a low academic performance level or rate does not necessarily indicate that a student should receive special education services. Only when a student demonstrates a dually discrepant academic profile (i.e., level *and* rate deficits) should special education be considered.

For example, if a low-performing student is learning at a rate similar to the growth rate of other students in the same classroom environment, then he or she is demonstrating the capacity to profit from the educational environment. Additional intervention is unwarranted. On the other hand, if a low-performing student is not manifesting growth in a situation where others are thriving, then consideration of special intervention is warranted. Alternative instructional methods must be tested to address the apparent mismatch between the student’s learning requirements and those represented in the conventional instructional program.

RTI identifies low-performing students with LD when their response to educational intervention is dramatically inferior to that of peers. The premise is that students who respond poorly to otherwise effective instruction may have a disability that limits their response to conventional instruction and, thus, require specialized treatment to affect schooling outcomes associated with success in life.

Advantages of RTI

One advantage of RTI is that students are identified as LD only if they fail to respond to instruction deemed effective for the vast majority of students. In effect, RTI eliminates poor instructional quality as an explanation for a student's poor academic performance.

Another advantage of RTI is that students are provided with early intervention. Unlike the more traditional IQ/achievement discrepancy model, an RTI model does not wait years for students to fail before identification and intervention. RTI provides struggling students with prompt opportunities, early in their academic career, to receive quality educational interventions. This timely intervening may help to close the achievement gap between them and their more competent peers at an expedited rate.

Finally, RTI is advantageous because assessment data linked to classroom and curricular objectives are collected frequently and consistently. These data serve to inform the teacher of students' performance and to decide which level of instruction is appropriate for each student. Further, frequent data collection helps the teacher improve instruction, as it provides feedback with which the teacher may self-evaluate the success of his or her lessons and instructional components.

Response to Intervention in the Jefferson County Public Schools

In this case study, we will learn about a fictional classroom, school, and district. The classroom belongs to Mr. Amante, the school is George Washington Carver Elementary, and the school district is the Jefferson County Public School system. We will examine how the RTI process works in this district, school, and classroom context.

In this case study, we will examine RTI at several levels. We will begin by examining the school district and learn why they chose to implement RTI. We will then discuss how RTI works in this district. Next, we will learn what the school is required to do for RTI to work and how the school did this. Finally, we will learn about Mr. Amante's classroom and his work to implement RTI. We will follow Mr. Amante's students through the RTI process

The Jefferson County Public Schools (JCPS) is a fictional suburban school district in an eastern state. JCPS serves about 20,000 students in Grades K through 12. Although the district is suburban, it serves students with a wide range of socioeconomic circumstances, as we will see below.

The Decision to Begin (and Extend) RTI

The decision to implement RTI started at the district level three years ago. The Special Education Department at JCPS noticed that a disproportionate fraction of its low income students—those on both the urban and rural fringe especially—were being referred for special education services at the end of Grade 1 and beginning of Grade 2. After consulting with principals and teachers at many of their schools, they found that the primary cause of referral was reading difficulty. After examining the results of assessments for referred students, the Special Education Department personnel found that referred students had significantly below grade level reading fluency scores.

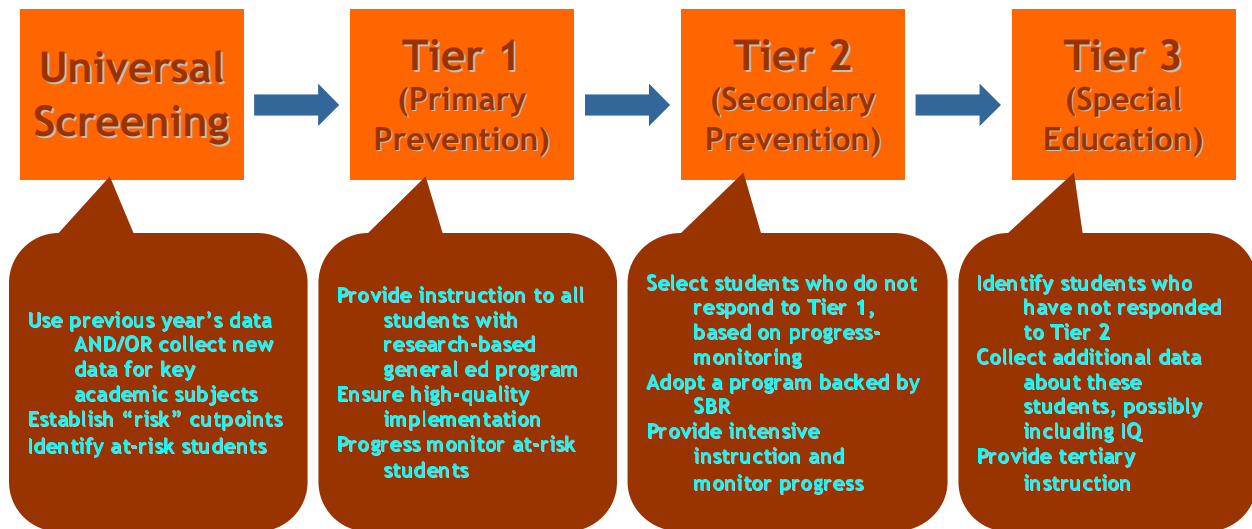
The Special Education Department determined that many of these students might have been able to succeed in general education if they had received stronger early decoding instruction. The district decided, therefore, to introduce RTI to assure that students received appropriate instruction in general education and reduce referrals to special education.

After two years, JCPS found their RTI model to be very successful. Students were being referred to special education in Grade 1 and Grade 2 at lower rates. Many of their students were making strong progress. They began to notice a problematic trend, however. Many students who appeared successful in Grades 1 and 2 began to demonstrate difficulty once they got to Grade 3 and Grade 4. The Special Education Department made a concerted effort, therefore, to work with Grade 3 and Grade 4 teachers to implement RTI more effectively in those grades. How they accomplished this will be described later.

RTI Design in JCPS

JCPS decided to use the well-researched three-tier model of RTI with a standard protocol intervention strategy shown in the figure below.¹ In the three-tier model, the bottom tier is called “primary prevention.” This is instruction all students receive. The next tier, called “secondary prevention” is for students who do not do well in primary prevention. Finally, for those few students who do not respond to secondary prevention, there is tertiary intervention, highly specialized instruction conducted in special education. Here is how JCPS designed their standard protocol RTI model.

¹ The standard protocol approach is in contrast to an alternative approach called problem solving, in which instructional intervention strategies tend to be more individualized to the needs of each student



Overview of the Three-Tier RTI Model

Universal screening. In RTI, students are identified with learning disabilities (LD) based on their failure to respond to research-based interventions. The first step in RTI, therefore, is to determine which students might need special intervention. In JCPS, all students are testing using curriculum-based measurement (CBM), a short, simple test of key grade level skills. The type of CBM used varied by grade level. In Grade 4 classrooms, the CBM Maze fluency assessment is frequently used in this way. The Maze, which we will describe in more detail below, allows students 2 ½ minutes to circle the correct words to fill in blanks throughout a grade-level passage. Students whose scores fall below specific cutoff points are considered "at risk," and their progress is monitored using different equivalent forms of the same CBM measure for the next 6 to 8 weeks.

Throughout the rest of this case study, there will be questions for you to think about. They will be inside boxes with dashed outlines. Answers to the questions are located in Appendix B. Here is the first one.

Question 1. Why does JCPS use the CBM Maze for progress monitoring in Grade 4?

Think of your answer to this question before you read on.

Primary prevention. All students participate in the primary prevention program, a research-based general education curriculum. During this time, the at-risk students participate in the primary prevention program and their progress is monitored weekly.

Secondary prevention. After 6-8 weeks in the primary prevention program, the progress of at-risk students is examined. If students have not made adequate progress, they are placed in secondary prevention instruction. This instruction takes place outside of core instructional time (e.g., not during primary math or reading time) and it is the responsibility of general educators.

Secondary prevention occurs for 8 weeks. The progress of students in secondary prevention is tracked using CBM measures. At the end of the 8 week cycle, the CBM data are examined. Students who make adequate progress return to primary prevention. Those who do not may participate in a second round of secondary prevention or they may be referred for placement in tertiary intervention (in this model, special education).

Tertiary intervention. At this point, students may undergo more formal psychometric evaluation to determine the scope and extent of their deficits. Once the deficits are understood, students receive more intensive one-on-one instruction. If a student continues to make inadequate progress, the student receives a more comprehensive and formal evaluation to pinpoint specific strengths and weaknesses, student IEP goals are established, individualized student programs are developed, and student progress is monitored to determine effectiveness of instructional programs and/or decide when a student may move back into secondary or primary prevention.

Details of the JCPS RTI Model

Primary prevention. A critical aspect of primary prevention is that instruction is evidence-based. Selecting a primary prevention program was one of the most important decisions JCPS had to make. The district knew that they needed a program that had a strong track record of success and that covered all critical literacy skills. They began by identifying the key literacy skills they wanted to make sure the program included. They consulted the National Reading Panel report (National Institute of Child Health and Human Development, 2000)² and determined that phonological awareness, phonics, fluency, comprehension, and vocabulary were key reading skills. They also knew that they wanted a program that covered writing strategies, handwriting, spelling, and grammar.

As they examined programs, they consulted several sources of information about the effectiveness of language arts programs. They used reports from the U.S. Department of Education's What Works Clearinghouse (<http://whatworks.ed.gov>), the Florida Center for Reading Research (<http://www.fcrr.org/FCRRReports/>), Johns Hopkins University's Best Evidence Encyclopedia (<http://www.bestevidence.org/>), and the Oregon Reading First Center (http://reading.uoregon.edu/curricula/or_rfc_review_2.php) to see if the programs had evidence of success.

The primary language arts program chosen was called *Reading Adventures*.³ They chose *Reading Adventures* because the independent websites they consulted stated that it had a prior track record of success. *Reading Adventures* also covered all of the literacy skills the district

² Information about the National Reading Panel is available at its website, <http://www.nationalreadingpanel.org>. The complete report, as well as summaries of the major findings, are available there.

³ *Reading Adventures* is not a real language arts program, but many programs like this can be found on the What Works Clearinghouse website. It lists beginning reading programs and states how successful they are at improving phonological awareness, phonics, fluency, comprehension, and overall reading, based on experimental research. The Florida Center for Reading Research and Oregon Reading First websites also have extensive information about many language arts programs, but they do not describe the history of research for the programs.

decided were important. The district has been using *Reading Adventures* at all elementary grade levels for four years.

Inadequate progress in primary prevention. Even when teachers do the most effective job possible teaching reading, some students will still not respond to instruction. For this reason, it is important to figure out which students are struggling. To do this, schools begin the year by doing a universal screening of all students using a short assessment of grade-appropriate reading skills. The schools then identify students who are at risk for reading difficulty based on their level, relative to grade level expectations.

The schools then do PM for the students who are at risk. For the first 6 to 8 weeks of school, at-risk students take a weekly PM assessment. If students do not make adequate progress, they begin secondary prevention.

Question 2. Why doesn't JCPS start secondary intervention immediately after the universal screening?

Think of your answer to this question before you read on.

Secondary prevention. The secondary prevention program is part of general education. JCPS has hired reading specialists for each of their elementary schools. These reading specialists provide secondary prevention instruction to students. Instruction is provided in groups of 5 students four times a week for 30 to 45 minutes. JCPS has mandated that secondary instruction occur outside of "core instructional time" (meaning reading and math), so students work with the reading specialist in addition to, not instead of, primary reading or math instruction. Throughout secondary prevention, the reading specialists continue to do PM assessment with these students. They now do PM more often, usually twice a week.

The choice of an evidence-based secondary prevention program was critical to the success of RTI in JCPS. For primary prevention, *Reading Adventures* worked well in the first year of implementation, teachers reported that they noticed a positive difference in student performance, and state test scores rose for Grades 2 and 3. The Special Education Department did notice a slight drop in referrals, but *Reading Adventures* did not solve all of the district's problems with reading. At this point, JCPS purchased a supplemental phonics program called *Fantastic Phonics* and concurrently started to implement RTI. As a result of these steps, far fewer children were being referred to special education and many more were meeting grade-level standards.

This was not, however, helping with a new problem schools were noticing. A number of students who did well in Grades 1 and 2 were no longer doing well in Grades 3 and 4. The issue had shifted, however. The district noticed that these older struggling students had been competent readers in the earlier grades because their scores on word reading and passage reading fluency CBM were above the benchmark. Now, the district realized that these students might be struggling for two different reasons. First, some students exhibited what are called "late emerging decoding problems." That is, these students were able to handle the decoding demands

of lower grade texts, but the increasing number of multiple syllable words in grade 3 and grade 4 texts has strained their basic decoding skills. Their word identification and fluency skills have both stalled—and even declined. Second, another group of students continued to decode well and read fluently, but their comprehension skills were very weak. Fortunately, there were far fewer struggling readers than before JCPS started RTI. Unfortunately, the district’s approach to secondary prevention was not designed to handle these problems.

To create effective secondary prevention instruction for these students, JCPS decided they needed two different programs, one for those struggling with decoding and one for those struggling with comprehension. To help students with advanced decoding problems, JCPS found that *Fantastic Phonics* had a separate program designed specifically for older readers struggling with more complex words. This program, called *Fantastic Fluency*, focused on multiple syllable decoding and fluency building. The Special Education Department examined the effectiveness of the program by using the What Works Clearinghouse website and found that it had a prior track record of success. They decided it would be perfect.

Helping students with comprehension problems proved more difficult, however. There were no programs available for this problem alone. JCPS considered building their own comprehension-focused program, but they worried that this would violate a key principle of the standard protocol RTI model, that it should include a *standardized* secondary prevention curriculum with prior evidence of success. The absence of such programs, however, left them with the choice of creating their own intervention or providing no support. They opted, of course, for the former option and created 8 week, 32 lesson, secondary prevention programs for Grade 3 and Grade 4 students. They called this intervention “Reading For Meaning.”

The JCPS program writers knew it was critical that Reading For Meaning incorporate known best practices. To do this, they first decided that they would use supplemental reading materials provided with *Reading Adventures* as the core literature source for the comprehension intervention. These texts were on the same topics as the instructional units in *Reading Adventures* (e.g., “Lending a Helping Hand” was a Grade 4 unit on volunteering and community activism; a set of leveled reading books provided below-level texts) and explored different aspects of similar topics. Second, the program writing team decided to focus on the aspects of strong comprehension instruction identified by the National Reading Panel (NRP) report, namely (a) reading strategy use, (b) vocabulary instruction, and (c) fluency building. By relying on known best practices, they felt that their program, although unique, reflected the spirit of the standard protocol.

In the JCPS RTI model, students’ PM data are examined again after 8 weeks of secondary instruction. For students who showed strong growth in secondary prevention, primary prevention is all that is needed. For students who showed weak growth in secondary prevention, there are options: JCPS permitted some students to get a second round of secondary instruction, if they showed some—but inadequate—growth in the first round. Those students who made little or no growth in the first secondary intervention would qualify for tertiary instruction through special education.

In addition, after the 8 weeks of secondary prevention have elapsed, the universal screening is conducted again for all students.

Question 3. Why is the universal screening being conducted again?

Think of your answer to this question before you read on.

After the midyear universal screening, students who demonstrated inadequate progress from the beginning to the middle of the year qualify for secondary prevention. Reading specialists begin this instruction with them.

Students who do not respond to secondary prevention instruction are referred to special education. If these students qualify for special education services, they receive tertiary intervention from the special education teacher. Tertiary intervention instruction is designed to be matched very closely to the needs of students and is conducted one-on-one or in very small groups. Students' individualized education programs (IEPs) are written to ensure students get exactly the instruction they require.

An Introduction to George Washington Carver Elementary School

Descriptive Information

George Washington Carver Elementary is located in a middle-to-low income area of the Jefferson County Public Schools system. This part of Jefferson County is considered “working class.” George Washington Carver has a student population of 950 students in grades K through 5. At George Washington Carver, students are 35% African American, 5% Asian American, 15% Hispanic, and 45% White. Of these students, 10% are English Language Learners (ELLs). About 60% of students receive free or reduced price lunch.

Previous Experience with RTI

George Washington Carver Elementary is in its third year of RTI implementation. The Kindergarten, Grade 1, and Grade 2 teachers have been very pleased with RTI because they feel it has helped them identify and correct reading problems before they become very serious. Although the teachers initially feared that students would be over-tested, they realized that regular data collection was comfortable for students, not very time-consuming, and—most importantly—helpful in assuring all students were making sufficient progress.

Grade 3 and 4 teachers were also initially pleased with RTI. They had immediately noticed how many students had weak decoding skills. Before RTI, many lower grade teachers had not placed as much emphasis on word reading skills, and many students were unprepared for the comprehension-intensive instruction in Grade 3 and 4. At the beginning of RTI, many of the struggling readers who were missing word reading skills were placed in *Fantastic Phonics* classes. The phonics lessons caused students to develop word reading skills quickly, and many students transitioned back to primary prevention without difficulty.

However, as RTI continued, these upper grade teachers noticed the same thing the district Special Education department had found. Due to RTI, fewer students were being identified with reading difficulty. This meant fewer students came to Grade 3 or 4 without adequate basic reading skills. On the other hand, they found that the students with reading difficulty were not responding to *Fantastic Phonics*. They, like the district, saw some students stymied by multisyllable words while others struggle to comprehend more advanced text. The Grade 3 and Grade 4 teachers were pleased when they heard the district had plans to address this problem with *Fantastic Fluency* for advanced decoding and Reading For Meaning for comprehension support. This will be the first year of implementation for both programs.

An Introduction to Mr. Amante's Class

About Mr. Amante and His Students

Mr. Amante has been teaching Grade 4 in The Jefferson County Public Schools for 9 years, 7 of them at Carver Elementary. Like all of the other teachers at Carver, Mr. Amante began using RTI three years ago. Like all of the other upper grade teachers, Mr. Amante has noticed fewer readers with serious reading difficulties since the beginning of RTI. However, he has also noticed that there are those students who struggle with longer words and those who are not grasping the meaning of texts. He knows the district is aware of these problems, and he is hopeful that the plan to use *Fantastic Fluency* and Reading For Meaning will improve the situation.

Mr. Amante has 26 students this year, and they reflect the ethnic diversity of the school. About 60% of students qualify for free or reduced price lunch. He has several ELLs, but most of them are considered proficient, having learned English throughout elementary school.

Reading Adventures in Mr. Amante's Classroom

Mr. Amante makes extensive use of the primary prevention program, *Reading Adventures*. JCPS mandates that all Grade 4 teachers use the program for 90 minutes each day and follow a pacing guide. The pacing guide gives teachers benchmark dates by which they must complete certain lessons. Mr. Amante thinks the pacing guide has benefits and drawbacks. One benefit of the pacing guide is that it keeps him moving and assures that students are getting a rigorous curriculum.

On the other hand, he feels that the pacing guide limits his ability to reteach particularly challenging lessons. Mr. Amante uses the unit themes as the focal point of his classroom, but he wishes he had more time to examine themes in more detail. The Grade 4 program includes a unit titled "Our Heritage," and he enjoys exploring students' diverse cultures. The unit, however, only last 7 weeks. He wishes he had more time. He understands, however, that the other units cover other good topics, and he has followed the pacing guide consistently (and, he admits, he does spend an extra few days on the Heritage unit).

Reading Adventures is tied to state standards, and Mr. Amante is pleased with the progress many of his students made across the four years he has been teaching it. The program includes reading comprehension, vocabulary, fluency, and writing lessons. One disadvantage of the Grade 4 program had been the absence of tools to track students' progress. Mr. Amante has always had high expectations for students' comprehension improvement, but he has found the end-of-unit tests too specific to give him a sense of their overall improvement. A great benefit of the introduction of RTI, therefore, has been the introduction of progress monitoring tools. JCPS now requires all Grade 4 teachers to measure students' academic progress using a curriculum-based measurement (CBM) called the Maze (we will learn more about how the Maze works in the next section).

Now that we know a little bit about JCPS, George Washington Carver Elementary, and Mr. Amante, let's take a look at how Mr. Amante implements RTI. Because of the district's new focus on improving outcomes for students with late-emerging reading problems, this is a good place to take a snapshot of the process. We'll get to see how progress monitoring and RTI work together across the entire year.

Getting Started with RTI ... Mr. Amante Begins the Year

Beginning of the Year CBM Screening

JCPS requires that all Grade 4 students are screened three times a year using the CBM Maze. This is the universal screening. Students' results on the Maze will be used to determine if Mr. Amante's students are on track to meet grade level benchmarks for reading comprehension. Each student will complete two separate Maze passages.

Question 4. Why does Mr. Amante administer two Maze passages?

Think of your answer to this question before you read on.

In some grades, it takes a lot of time to complete the screening assessments because they must be administered individually. The Maze, however, can be administered whole group, so it takes Mr. Amante very little instructional time.

Question 5. When should Mr. Amante start testing his students?

Think of your answer to this question before you read on.

To administer the Maze, Mr. Amante gives each student a passage containing spaces where students have to select the correct word from three choices, shown between brackets and in bold print. It looks like this:

THE CAVE TRIP

Mrs. Jones said that Cindy's class [**was/ step/ hill**] going on a field trip. The [**stare/ class/ green**] of third graders had never been [**be/ on/ so**] a field trip before. Cindy was [**bed/ went/ very**] excited. Mrs. Jones said that the [**class/ chair/ peach**] was going on a field trip [**at/ to/ is**] see the caves up in the mountains. [**Show/ And/ The**] class had been studying about caves [**for/ sad/ kill**] the last few weeks. Cindy [**wet/ and/ ill**] her classmates had seen pictures of [**shout/ caves/ sing**]. Now, they were going to see [**a/ are/ or**] real cave.

A week later, the students [**then/ her/ and**] Mrs. Jones climbed onto a bus [**four/ that/ dime**] would take them to [**and/ the/ sat**] cave. It was early in the morning [**sit/ tap/ and**] the air was chilly. Mrs. Jones [**got/ sat/ had**] warned all of the students to [**bring/ pillow/ horse**] a sweater because the air might [**be/ to/ it**] chilly in the cave. Cindy was [**work/ jump/ very**] glad that she had brought her sweater.

[**Rain/ Halt/ The**] bus driver started the engine and [**the/ was/ got**] bus began to roll. The bus [**rolled/ mother/ girls**] along the freeway. Finally the bus [**lather/ coffee/ pulled**] onto a little country road that [**ate/ led/ pear**] to the cave.

When the students arrived at the [**goat/ math/ cave**], all they could [**see/ kite/ lot**] was a mountain with a big [**toys/ trees/ black**] hole in the side.

Mr. Amante wants to be sure he gives the test the same way every time.

Question 6. Why might Mr. Amante be concerned about administering the passage the same way every time?

Think of your answer to this question before you read on.

To be sure his administration is consistent, he reads the following script every time he gives the Maze:

*The teacher says: **Whenever you come to three words in parentheses and underlined, circle the word that belongs in the sentence. Choose a word even if you're not sure of the answer. When I tell you to start, pick up your pencil, turn you test over, and begin working. At the end of 2 and a half minutes, I'll tell you to stop working. Remember, do your best. Any questions? Start. Trigger the timer for 2.5 minutes.***

Mr. Amante has an answer key for the Maze, and he uses this to check students' scores. It looks like this:

SUMMER CAMP

Stuart has nice parents. They did not embarrass him in [glad/front]
yellow] of his friends. His father did (not/ant/soft) yell at him during his
baseball [center/games/lines], and his mother never kissed him (in/tot/put)
front of his friends. He generally (liked) flow/jeep] his parents, except for the
fact [shoe/went/that] they were sending him to summer [bus/dump/camp]
this year.

Stuart did not want (to/wit/cow) go to summer camp. The thought [and/
be/of] it made him picture himself hot [coat/rest/and] thirsty, hiking up a
dusty trail. [Bit/He/Go] knew that summer camp food had [of/to/my] be
bad news, too. Besides, summer (camp) free/dog] was for people with
nothing else [fad/to/sew] do. He had plenty of things planned (for) much/
very] his summer at home.

“Summer camp (will) yes/belt] be good for you,” said Mother. “[Feel/
And/Lot] I don’t want to hear another [catch/phone/word] about it!” Stuart
moped around the [beat/opens/house] until it was time to go. Mother (had/
with/boy] packed his trunk full of clothes, (and/sort/time] she and Dad took
Stuart to [real/glob/the] bus station. Stuart tried hard not (to) sun/we] cry
when he hugged them goodbye. [Yet/He/Sat] ran onto the bus and buried
[beam/his/neat] head in his hands. After a (while) tall/hate], he looked out
the window.

Mr. Amante gives students one point for each correctly circled word.

Mr. Amante administers *two* CBM Maze passages to his students. There are two ways he can do this, and both have advantages and disadvantages:

1. Have his students do two Maze passages on the same day.
 - a. Advantages: It takes less time. Mr. Amante also gets a sense of how his students are doing at one point in time.
 - b. Disadvantage: If students are having a bad day, this will decrease their performance on both passages.
2. Have his students do one Maze the first week of testing and the other the next week.
 - a. Advantage: If students did poorly the first time because they were having a bad day, a second administration on a different day would probably result in a higher score and limit the impact of the bad day.
 - b. Disadvantage: It takes more time.

Question 7. How should Mr. Amante administer the two passages, on the same day or on two different days?

Think of your answer to this question before you read on.

Scoring Beginning of the Year CBM

After he has completed all of his testing, Mr. Amante scores all of the assessments. He counts every correctly circled response and writes the score on the top of the page and on a record sheet. This is the student's score for that CBM Maze.

THE CAVE TRIP

Mrs. Jones said that Cindy's class **(was/step/ hill)** going on a field trip. The **[stare/class/green]** of third graders had never been **(be/on/ so)** a field trip before. Cindy was **[bed/went/very]** excited. Mrs. Jones said that the **(class/ chair/ peach)** was going on a field trip **[at/to is]** see the caves up in the mountains. **[Show/ And/ The]** class had been studying about caves **(for/sad/ kill)** the last few weeks. Cindy **[wet/and/ill]** her classmates had seen pictures of **[shout/caves/sing]**. Now, they were going to see **[a/are/or]** real cave.

A week later, the students **[then/ her/and]** Mrs. Jones climbed onto a bus **[four/that/dime]** would take them to **(and) the/ sat** cave. It was early in the morning **(to) tap/ and** the air was chilly. Mrs. Jones **(got/sat/ had)** warned all of the students to **(bring/ pillow/ horse)** a sweater because the air might **(be) to/ it** chilly in the cave. Cindy was **[work/ jump/very]** glad that she had brought her sweater.

[Rain/ Halt/ The] bus driver started the engine and **(the) was/ got** bus began to roll. The bus **(rolled) mother/ girls** along the freeway. Finally the bus **[lather/ coffee/ pulled]** onto a little country road that **[ate/ led/ pear]** to the cave.

When the students arrived at the **[goat/ math/ cave]**, all they could **[see/ kite/ lot]** was a mountain with a big **[toys/ trees/ black]** hole in the side.

Once he has scored all the tests, Mr. Amante has a complete record for all students, as you see below.

Student	Screening 1 List 1	Screening 1 List 2	Screening 1 Average	Screening 2 List 1	Screening 2 List 2	Screening 2 Average	Screening 3 List 1	Screening 3 List 2	Screening 3 Average
Aaron	11	9	10						
Brenda	6	8	7						
Cedric	4	5	5						
Daniela	16	17	17						
Emily	7	9	8						
Francisco	18	16	17						
Gracie	13	12	13						
Hugo	8	11	10						
Isaac	8	10	9						
Jacqueline	16	16	16						
Katherine	6	10	8						
Leslie	9	9	9						
Michael	15	14	15						
Natasha	15	18	17						
Oscar	15	17	16						
Paige	11	13	12						
Quinn	7	8	8						
Roman	5	8	7						
Savannah	15	15	15						
Terrence	13	11	12						
Ulises	11	12	12						
Victoria	9	12	11						
Wendy	15	14	15						
Xavier	4	3	4						
Yasmin	7	3	5						
Zachary	3	3	3						

Notice that there are a lot of blank columns on the sheet. These columns are for Mr. Amante to use for later universal screenings.

Analyzing the Data

Now that Mr. Amante has his data, he can analyze them to see which students may need more assistance than *Reading Adventures* can provide. JCPS has given Mr. Amante a cut-off score to determine if students are “at-risk,” based on the recommendations of the National Center on Progress Monitoring⁴. The “at-risk” cut-off score is 10 correct CBM Maze replacements in 2 ½ minutes (the total Maze time). In other words, if students get 9 or fewer items correct, they are considered at-risk.

Question 8. Based on the scores above, which students in Mr. Amante’s class are considered at-risk?

Question 9. What do you think should be done next to for the at-risk students?

Think of your answer to these questions before you read on.

⁴ Please visit the Center’s website at www.studentprogress.org, click on Resources, and click on Reading to find training materials and more information.

Now that Mr. Amante knows which students are at-risk, he will monitor their progress for 6 to 8 weeks—administering the CBM Maze on a weekly basis—and he will continue to provide all students with primary prevention instruction. Under the standard protocol, none of his students should receive additional support until they have done the 6 to 8 weeks of progress monitoring. In the upper grades, however, this becomes more problematic.

Why is it problematic not to provide some immediate additional support? Let's look at a few of Mr. Amante's students. Some of them are good candidates for progress monitoring, and they may respond to the good instruction Mr. Amante will give them in the next 6 to 8 weeks. Any student who scored 7, 8, or 9 on average is a good candidate for progress monitoring. Those who scored 5 or lower, here, Xavier, Yasmin, and Zachary, may need immediate intervention to ensure that they do not fall further behind during the initial PM period.

There are a couple possible explanations for the very low performance of these students. Here are some possibilities:

- These students are good decoders but very poor comprehenders. Students like this, sometimes called “word callers” because they can say the words but have little understanding of them, are relatively rare. Yasmin, for example, had no history of reading problems (she scored at the benchmark on Grade 3 passage reading fluency CBM, which measures decoding and fluency) but did very poorly on the CBM Maze, which measures comprehension and fluency. She may have this specific comprehension difficulty.
- They may not have received good instruction in the lower grades. How would this be possible if George Washington Carver Elementary had been doing RTI for three years? It would be unusual, but a student may have come from another district that is not using this approach to instruction. Zachary just moved to Jefferson County, and his parents already expressed concern to the Carver principal, Dr. O'Bannon. As a result of Zachary's low score and parental concern, it was decided that he would be placed immediately into secondary prevention instruction. Cedric similarly just moved to Jefferson County, but his score was higher and it was determined that he would just have PM initially.
- Finally, these students may already be identified as needing additional support and may already be receiving tertiary intervention services. This is the case with Xavier here. He struggled with decoding and fluency in Grade 3 and has already been receiving additional instruction outside of the classroom.

Question 10. Which, if any, of these three students do you think really require additional instruction now?

Think of your answer to this question before you read on.

Primary Prevention in Mr. Amante's Classroom

As we described above, Mr. Amante follows a district-provided pacing plan. He covers lessons in *Reading Adventures* according to the sequence and pace determined by the district.

This year, it is going well for him. He follows the pacing guide carefully and does all of the standard lessons included in the program. In addition, he supplements the curriculum with a few additional texts because he wants to provide exposure to other types of information about each unit topic. He knows that content knowledge is very important for strong reading comprehension, and he feels his additional texts deepen content learning. He is careful not to supplement too much, and he uses some of his science or social studies time to supplement the unit theme. For example, Mr. Amante's social studies instruction focuses on American heritage during the *Reading Adventures* "Your Heritage" unit, and he has planned his science instruction so that he covers the science unit on conservation while he and his class are on the *Reading Adventures* unit titled "Our Planet: Yesterday, Today, and Tomorrow."

In addition to a pacing guide, the district has required the Grade 4 teachers to check each other's fidelity to the program. Mr. Amante and his colleagues have been checking their program fidelity since the first year of RTI. They were initially concerned, but they understood that it was important to be sure that all students got similar instruction: "RTI doesn't work if we aren't sure everyone is getting good instruction," they said. All of the Grade 4 teachers at George Washington Carver initially felt uncomfortable giving critical feedback to each other. They did the checks anyhow, and they found that it was helpful to observe each other because they learned new tips and tricks when they did this. They realized the value in watching each other, and they found the constructive feedback helpful for improving their implementation.

They also found the fidelity checklist—a list of items that everyone must include in their implementation—was less daunting than they expected. The Special Education department had created the fidelity checklist to emphasize the *core elements* of the program. In other words, it was not necessary for teachers to do every element of every lesson. JCPS emphasized that the lessons on reading comprehension strategies, vocabulary, and reading fluency needed to be followed carefully, and the fidelity checklist focused mostly on those lessons.

Mr. Amante credits the fidelity checks with helping him strike a better balance between what he wants to teach and what the standards require. His interest in certain subjects (e.g., conservation) sometimes meant he spent too much time on them, at the expense of some skills. Now, the fidelity checks assure he teaches all the key lesson content, and he has developed creative ways to fit supplemental instruction into his day, as we saw above. The Grade 4 teachers met during their planning periods on the days they observed each other and discussed their implementation. This led to improvement in everyone's implementation. Mr. Amante has felt more confident in his instruction—and that of his colleagues—because of this.

In addition to providing instruction whole group, Mr. Amante does some instruction in small homogenous reading groups. *Reading Adventures* includes resources for these groups, including lessons designed to reteach abstract vocabulary and difficult comprehension skills (e.g., inferencing), to practice comprehension strategies, to support English Language Learners with language and vocabulary, and to cover advanced concepts. Mr. Amante meets with his small groups at least 3 times a week for about 10 minutes per group. These groups give him the opportunity to provide more carefully targeted instruction. The groups are not part of secondary prevention, however, because they are for all students and they are part of his reading program.

Progress Monitoring

Once a week, Mr. Amante administers CBM Maze probes to his 11 at-risk students, including Xavier and Zachary. These weekly administrations are called “probes.” He only administers one passage each time. The data Mr. Amante collects will allow him to see whether his students are progressing enough. After 7 weeks of progress monitoring, Mr. Amante can evaluate the effectiveness of his primary prevention instruction.

Remember that we are determining whether students respond based on their *trend*, that is, how much they are improving, not where they started. To determine the trend, we calculate a slope, the weekly increase in the number of words read correctly.

Mr. Amante follows this procedure:

1. He separates the probes into three roughly equal groups. It is important to have three data points in the first and last groups. The groups are shown in the table below.
2. He takes the median from the third group and subtracts the median for the first group.
3. He divides by the number of probes minus 1 to get the slope.

So, in the case of Quinn, the probes separate this way: (8, 7, 9) (12, 14) (14, 14, 16). The median of the third group is 14 and the median of the first group is 8. The number of probes minus 1 is 7 (we count the screening as a probe). So: $(14-8)/7 = 0.86$. This means that each week, Quinn was able to correctly replace a little less than one more item on the Maze than the previous week. The slope of improvement is 0.86.

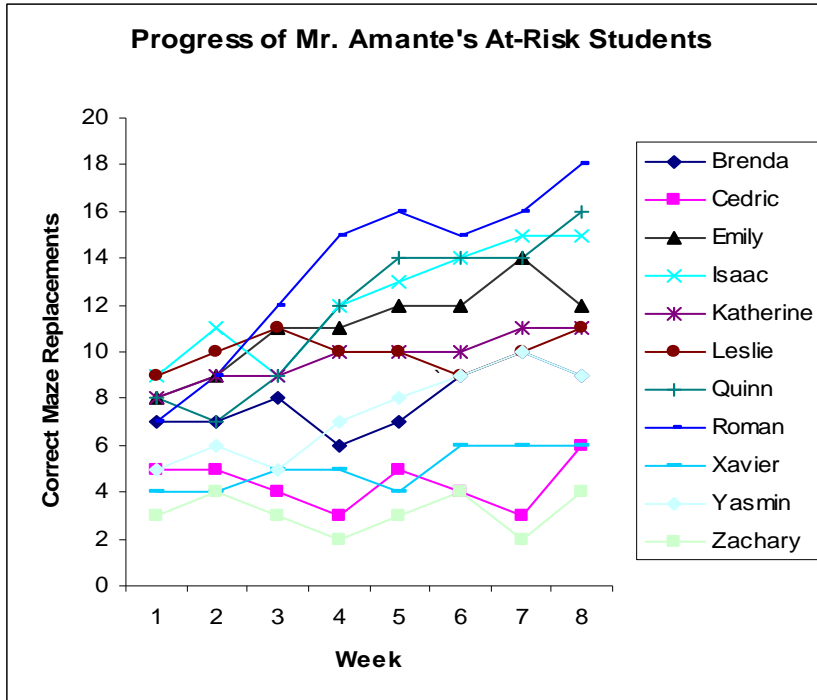
The following table shows the slopes for the at-risk students.

Student	Screening	PM Week 2	PM Week 3	PM Week 4	PM Week 5	PM Week 6	PM Week 7	PM Week 8	Slope
	1	2	3	4	5	6	7	8	
Brenda	7	7	8	6	7	9	10	9	0.29
Cedric	5	5	4	3	5	4	3	6	
Emily	8	9	11	11	12	12	14	12	0.43
Isaac	9	11	9	12	13	14	15	15	0.86
Katherine	8	9	9	10	10	10	11	11	0.29
Leslie	9	10	11	10	10	9	10	11	0.00
Quinn	8	7	9	12	14	14	14	16	0.86
Roman	7	9	12	15	16	15	16	18	
Xavier	4	4	5	5	4	6	6	6	0.29
Yasmin	5	6	5	7	8	9	10	9	0.57
Zachary	3	4	3	2	3	4	2	4	0.14
	Group 1			Group 2			Group 3		

Question 11. What are Cedric’s and Roman’s slopes?

Think of your answer to this question before you read on.

Now Mr. Amante has enough information to determine which students are responding to intervention. The figure below should give you a rough sense of which students are responding.



The graph is good, but the slopes allow us to compare student progress to benchmarks. For Grade 4, the expectation is that students will correctly replace 0.40 more words each week on the Maze passages. Technically, this means that every time they do the Maze, they should replace four tenths of one more word. But, you can't replace four tenths of an item. So, it means that over 10 weeks, students should replace 4 more words correctly. The expectation of a slope of 0.40 means that students whose slopes fall below 0.40 have not made adequate progress, that is, they are not improving in their Maze replacements.

Question 12. Which students have demonstrated adequate progress? What do you think happens with them now?

Question 13. Which students have not? What should be done for them?

Think of your answer to these questions before you read on.

Secondary Prevention

Now that Mr. Amante knows which students are not responding to primary prevention, secondary prevention can begin. For Grade 4, there are two secondary prevention options, *Fantastic Fluency* and the district-designed comprehension program, Reading For Meaning. Unfortunately, the CBM Maze does not really tell Mr. Amante which program would be best for his students.

Question 14. How might Mr. Amante determine which program would be best for each student?

Think of your answer to this question before you read on.

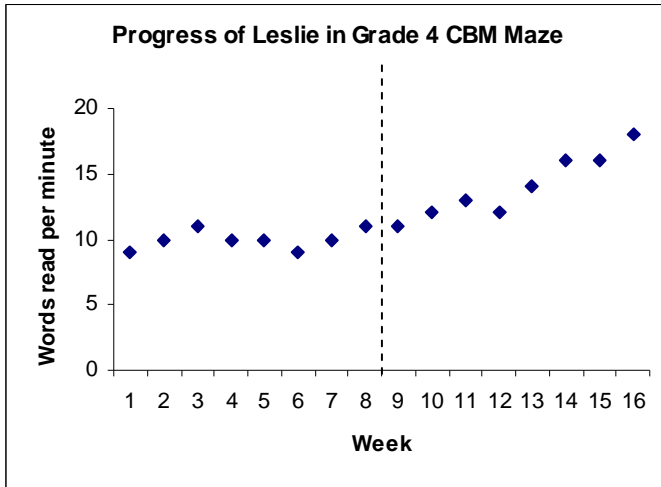
Fantastic Fluency is the secondary prevention program JCPS purchased for Grade 4 students who struggle with advanced decoding and fluency. Assessment suggested that Cedric and Leslie would benefit from this instruction. It will be delivered by a paraprofessional assistant trained by Ms. Morrison, the Reading Specialist. It is important to note that students will *still receive primary prevention* instruction because *Fantastic Fluency* is purely supplemental, including only phonics and fluency instruction. If they were pulled out during primary prevention, these students would receive no comprehension or vocabulary instruction, and this could inhibit their ability to keep up with Grade 4 demands (even if *Fantastic Fluency* brought their word reading skills up to grade level).

It may concern some readers that paraprofessionals delivered this instruction, and for good reason. Many paraprofessionals are capable, but they have not often received training on how to teach reading and may not deliver instruction as well as a fully certified teacher. On the other hand, it is often difficult for districts to hire many additional instructors, and, with good training from a qualified expert, paraprofessionals can be quite successful. Ms. O'Bannon and Ms. Morrison worked together to train the paraprofessionals and both of them regularly observed them to assure instruction was going well.

Meanwhile, Ms. Morrison taught the Reading For Meaning program, in which Brenda and Katherine were enrolled. The district decided that because Reading For Meaning was not a standard program, it was important to check fidelity to be sure the research-based elements of the program were being used as designed. As a result, Ms. Morrison agreed to be observed 3 times during the 8 week intervention by staff from the Special Education Department. They provided her with feedback on her implementation to help her improve fidelity to the core elements of the program.

Once a week, Ms. Morrison measures the progress of all *Fantastic Fluency* and Reading For Meaning students using the CBM Maze. She has also chosen to administer Grade 3 oral reading fluency (ORF) passages to the *Fantastic Fluency* students, even though these data were not included in her main reports. Because these students are working on fluency, she wanted a direct measure of their fluency improvement. She may see, in fact, that these students improve in fluency on ORF but remain weak on Maze. If this occurs, her students may transition out of her program but then begin Reading For Meaning instruction.

Here are data for Leslie, a student in *Fantastic Fluency*, on the CBM Maze:



The dotted line shows where secondary prevention started.

Question 15. Do you think Leslie responded to secondary prevention?

Question 16. What other data should we use to determine whether Leslie responded?

Think of your answer to these questions before you read on.

Now, here are the data for Leslie and the other students in Mr. Amante’s class who received secondary prevention (Note that because Xavier and Zachary are receiving instruction from other school personnel, their data are not shown here.):

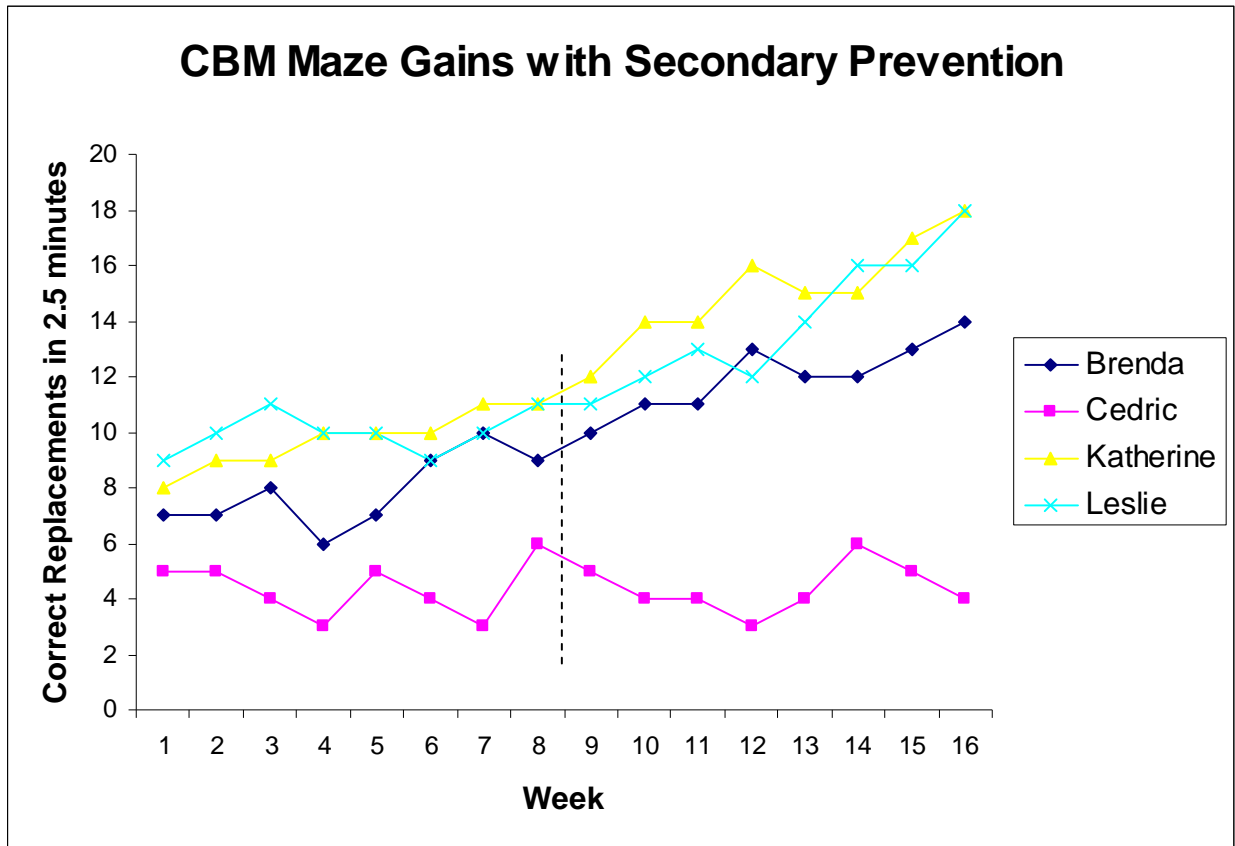
Student	PM Week 9	PM Week 10	PM Week 11	PM Week 12	PM Week 13	PM Week 14	PM Week 15	PM Week 16
Brenda	10	11	11	13	12	12	13	14
Cedric	5	4	4	3	4	6	5	4
Katherine	12	14	14	16	15	15	17	18
Leslie	11	12	13	12	14	16	16	18
	Group 1			Group 2		Group 3		

Question 17. What was Leslie’s slope?

Question 18. Which students demonstrated adequate response to secondary prevention?

Think of your answer to these questions before you read on.

The following figure shows the differences in slope before and after intervention (marked by the dotted line).



We can tell that Cedric’s progress is still very slow. He will need tertiary intervention in order to make adequate gains. We will discuss that below, but before that, the mid-year screening is important to describe.

Mid-Year Screening

Now that Mr. Amante’s students are more than half-way through Grade 4, it is important to do a second screening.

Question 19. Why is a second screening important?
Think of your answer to this question before you read on.

The screening procedure is identical to the screening procedure at the beginning of the year. Students read two passages (Readers: Why is this?), and Mr. Amante averages them to get a screening score.

Now, Mr. Amante needs to know the at-risk cut-off score for his students at this point in the year. There are two ways to calculate this. Dr. O'Bannon and Ms. Morrison, helped the first grade team choose between them:

1. They could work forward from the point he tested his students originally, as follows:
 - a. The original risk cut-off was 10 correct replacements in 2 ½ minutes.
 - b. Students should increase 0.4 correct replacements per week. It has been 16 weeks since Mr. Amante tested his students. So, $0.4 \times 16 = 6.4$, rounded to 6.
 - c. Add the original cut-off to the growth: $10 + 6 = 16$. Students who are not correctly replacing 16 words on the CBM Maze in 2 ½ minutes on the screening should be considered at-risk.
2. They could work backward from the benchmark.
 - a. It is the last week in January, and the final benchmark test will be in late May. By that time, students must reach 20 correct words in one minute.
 - b. The first grade teachers have about 15 weeks until benchmark testing. So, $0.4 \times 15 = 6.0$.
 - c. Subtract this from the benchmark: $20 - 6 = 14$. Students who are not getting 14 correct replacements in 2 ½ minutes on the screening should be considered at-risk.

The difference here is minimal (although the same formula creates larger differences in other grades). This isn't a problem, and both approaches are ok. Dr. O'Bannon suggested they split the difference, and make 15 the at-risk cutoff. Whether the cutoff is higher or lower depends on the capacity of the school to serve secondary prevention students. If the school has many resources and can support more students in secondary prevention, the cutoff would be higher. If resources are tight, the cutoff would have to be lower.

Below are Mr. Amante's students' scores for the midyear screening (scores for the at-risk students on Screening 1 are highlighted):

Student	Screening 1 List 1	Screening 1 List 2	Screening 1 Average	Screening 2 List 1	Screening 2 List 2	Screening 2 Average	Screening 3 List 1	Screening 3 List 2	Screening 3 Average
Aaron	11	9	10	16	17	17			
Brenda	6	8	7	13	14	14			
Cedric	4	5	5	3	6	5			
Daniela	16	17	17	22	21	22			
Emily	7	9	8	14	13	14			
Francisco	18	16	17	20	20	20			
Gracie	13	12	13	14	17	16			
Hugo	8	11	10	15	16	16			
Isaac	8	10	9	21	20	21			
Jacqueline	16	16	16	22	20	21			
Katherine	6	10	8	16	18	17			
Leslie	9	9	9	17	19	18			
Michael	15	14	15	16	17	17			
Natasha	15	18	17	19	19	19			
Oscar	15	17	16	23	26	25			
Paige	11	13	12	14	14	14			
Quinn	7	8	8	17	17	17			
Roman	5	8	7	20	21	21			
Savannah	15	15	15	17	18	18			
Terrence	13	11	12	14	17	16			
Ulises	11	12	12	14	13	14			
Victoria	9	12	11	19	18	19			
Wendy	15	14	15	23	24	24			
Xavier	4	3	4	3	6	5			
Yasmin	7	3	5	14	13	14			
Zachary	3	3	3	6	8	7			

Question 20. Which students should now be considered at-risk?

Think of your answer to this question before you read on.

These data are very interesting because there are some of differences from the beginning of the year.

Let's examine the at-risk students from Screening 1.

- Of those 11 students, 6 continue to be at-risk:
 - Zachary and Xavier: They received additional instruction from the beginning of the year. These were obviously good decisions because they are still struggling with grade-level skills at the midpoint of the year.
 - Cedric went through 7 weeks of progress monitoring and *Fantastic Fluency* for 8 weeks, but his scores are still very low. He will need to be referred for tertiary prevention.
 - Brenda is a tricky case. She appears to be missing targets by slim margins in many cases (her slopes are just not good enough, and on the mid-year screening her score is only one correct replacement away from the cutoff). So, some would say she is a candidate for tertiary prevention. On the other hand, she may benefit from simply one more round of Reading For Meaning instruction in secondary prevention. JCPS has decided that students like Brenda should get a second opportunity to respond to intervention. These students, termed “nearly responsive,” are defined as students who

- nearly missed slope or screening targets after secondary prevention. These students always get a second chance to respond before tertiary prevention is considered.
- Yasmin and Emily appeared to be making adequate progress based on their slopes during the 7 weeks of progress monitoring. They are both just below the cutoff now. So, secondary prevention is the obvious next step for them. More progress monitoring is not needed to realize that they probably need additional support to meet grade-level standards.
 - The remaining 5 students who were initially at-risk are above the benchmark now:
 - Isaac, Quinn, and Roman were doing fine after the PM period, and continue to do fine.
 - Katherine and Leslie both benefitted from secondary prevention and are doing better now.
 - Finally, two new at-risk students, Paige and Ulises, have appeared. They are also candidates for secondary prevention. Although we have not engaged in extensive progress monitoring, we have a sense of their slopes based on their initial scores and their present scores. They are not making adequate progress, and additional support can begin immediately.

Question 21. Do you think Brenda should receive more secondary prevention? As we know, JCPS requires it, but is this the right decision for her, in your judgment?

Think of your answer to this question before you read on.

Secondary Prevention, Round 2

Ms. Morrison and her paraprofessional work with multiple groups of Grade 4 students, providing additional support. As stated above, they do not wait for additional progress monitoring data before they intervene. Students below the cutoff at the mid-year screening all get secondary prevention (except the candidates for tertiary prevention). Ms. Morrison is still administering ORF passages to determine placement for secondary prevention, and some students (in other classes) actually transitioned from *Fantastic Fluency* to Reading For Meaning. In other words, the cause of their difficulty was determined to be primarily comprehension once they improved their word reading ability.

As before, Ms. Morrison tracks the progress of all the secondary prevention students on a weekly basis. Instruction once again lasts eight weeks.

Tertiary Prevention

Cedric did not respond to primary or secondary prevention, so he will receive tertiary prevention. In JCPS, tertiary prevention begins with a comprehensive evaluation of student needs. This evaluation includes examination of a student's academic work, some cognitive assessment, and standardized academic assessments. The cognitive assessment is designed to rule out mental retardation as the cause of academic difficulty. Mental retardation (MR) is its own disability classification, but it is different from learning disability (LD), the disability we are examining

here. LD is an isolated cognitive deficit in students with otherwise normal-range cognitive function. In an RTI framework, the student's failure to respond to intervention indicates the presence of a cognitive deficit. Cognitive assessment assures this cognitive deficit is isolated to reading. The academic assessments measure different areas of ability in the area of concern. For reading, these tests examine phonological awareness, word reading, word decoding, listening comprehension, and reading comprehension.

If the comprehensive assessment shows the same difficulty observed in primary and secondary prevention, it is determined that the student has a disability. A team including school personnel and parents works to create an Individual Education Plan (IEP). The IEP team considers the student's academic results to determine exactly what type of instruction the student needs.

Once the IEP has been written, the student begins to receive special education services. In tertiary intervention, progress monitoring continues. In some cases, the progress monitoring instrument will not be the same as that used in secondary prevention. For example, a 4th grade struggling reader may need to work on phonics, so a Grade 2 oral reading fluency CBM is better than the Maze, the recommended Grade 4 assessment.

Tertiary Intervention for Cedric

Assessment

Now that Cedric has not responded to primary and secondary prevention, the school psychologist, Ms. Hardy, administers tests of his cognitive ability and various reading skills. The Wechsler Abbreviated Scale of Intelligence is used to calculate a full-scale IQ score. For the reading assessments, Ms. Hardy administers the Comprehensive Test of Phonological Processing (CTOPP), which tests many phonological awareness skills including syllable blending, phoneme deletion, phoneme blending, and rapid naming. The Woodcock Reading Mastery Test-Revised Word Identification and Word Attack subtests measure word reading and nonsense word decoding, respectively. Ms. Drew also gives Cedric the reading comprehension and listening comprehension subtests of the Wechsler Individual Achievement Test, Version II. On the cognitive assessment, Cedric's score is in the normal range, so MR is ruled out as a cause of disability. On the reading assessments, Cedric scored below the 10th percentile on all tests except the listening comprehension test.

In addition, Ms. Hardy, Mr. Amante, and Ms. Morrison work together to collect information about Cedric's academic performance. Mr. Amante provides results on the weekly reading tests his students take, in addition to writing samples, comprehension test results, and a spelling inventory test (it tests what letter patterns students know). Ms. Morrison provides a list of all the lessons Cedric completed in *Fantastic Phonics*, as well as his sound-spelling practice journal, in which Cedric daily wrote words using phonics patterns Ms. Morrison had taught him and his classmates.

The academic data shows the same pattern across the board: Cedric struggles with the phonological processes involved in reading: His very low scores on the simplest subtests of the

CTOPP indicate this clearly. His work in Mr. Amante's and Ms. Morrison's class shows the same thing. He had difficulty spelling words with very simple spelling patterns. Even though Cedric has only been in JCPS for this academic year, it appears clear that his prior difficulties were not caused merely by an absence of instruction. Cedric's difficulties run deeper than that.

IEP Goals

Armed with lots of academic data, the IEP team determines that Cedric needs to focus on phonics. Cedric's difficulty with phonological processing, however, suggests that his individualized tertiary phonics program needs more emphasis on phonological and phonemic awareness skills. There are three options for setting goals for the IEP.

1. Benchmarking. The first option is end-of-year benchmarking. For typically developing students at the grade level where the student is being monitored, identify the end-of-year CBM benchmark. This is the end-of-year performance goal. The benchmark is represented on the graph by an X at the date marking the end of the year. A goal-line is then drawn between the median of at least the first three CBM graphed scores and the end-of-year performance goal.

Typical End-of-Year Benchmarks in Reading

Grade	Measure	Benchmark
1 st Grade	WIF Fluency Passage Reading Fluency	60 words correct/minute 50 words correct/minute
2 nd Grade	Passage Reading Fluency	75 words correct/minute
3 rd Grade	Passage Reading Fluency	100 words correct/minute
4 th Grade	CBM Maze	20 replacements/2 ½ min
5 th Grade	CBM Maze	25 replacements/2 ½ min
6 th Grade	CBM Maze	30 replacements/2 ½ min

2. Intra-Individual Goals. The second option for setting IEP goals is by an intra-individual framework. In other words, goals are set based on the individual child's needs. To use this option, identify the weekly rate of improvement (slope) for the target student under baseline conditions, using at least 8 CBM data points. Multiply this slope by 1.5. Take this product and multiply it by the number of weeks until the end of the year. Add this product to the student's baseline score. This sum is the end-of-year goal.

For example, Cedric's 8 CBM Maze scores during secondary prevention were 5, 4, 4, 3, 4, 6, 5, and 4.

Question 22. How should you calculate Cedric's slope, using the formula we learned earlier?

Think of your answer to this question before you read on.

We multiply this slope times 1.5 because we think that, with individualized tertiary instruction, we can improve this slope by 50%. So, for Cedric, $0.14 \times 1.5 = 0.21$. Then, we multiply this number by the number of weeks until final benchmark testing. After Cedric has been tested and the IEP written, there are about 12 weeks of school left. So, $0.21 \times 12 = 2.52$. We add this to the average for Cedric's last 8 WIF scores (43.4), so: $4.34 + 2.52 = 6.86$. Our goal for Cedric would be 6.86 correct Maze replacements in 2 ½ minutes, under the intra-individual approach.

3. *Base goal on national improvement norms.* The third option for setting IEP goals is by using national norms of improvement. For typically developing students at the grade level where the student is being monitored, identify the average rate of weekly increase from a national norm chart. Multiply this weekly increase norm by the number of weeks left in the school year, and add that product to the student's current median score. This sum is the student's end of year goal score.

CBM Reading Norms for Student Growth (Slope)

Grade	Measure	Norm Slope
1st Grade	WIF Fluency	1.8
2nd Grade	Passage Reading Fluency	1.5
3rd Grade	Passage Reading Fluency	1.0
4th Grade	CBM Maze	0.40
5th Grade	CBM Maze	0.40
6th Grade	CBM Maze	0.40

Question 23. What would Cedric's goal be if we use the national norms (assuming 13 weeks until final testing and given an average Maze score of 4.34 in the prior 8 weeks)?

Think of your answer to this question before you read on.

Additional Data Collection

Carver Elementary and JCPS really want to emphasize meeting ambitious goals, so they are committed to using grade-appropriate PM measures for students at all levels of support. That means that Cedric will always be tested using the Maze. However, Ms. Zhang, the resource teacher, has also requested that other measures be used to track progress.

Question 24. Why would Ms. Zhang advocate using another type of PM for her tertiary intervention students?

Think of your answer to this question before you read on.

To keep track of Cedric's progress, Ms. Zhang uses the Grade 2 ORF passages on a weekly basis and, as described in the above box, only gives the Maze every three weeks. She will give the Maze more often if Cedric starts to show improvement on it.

In terms of goal setting, Cedric should probably have goals for comprehension, based on the Maze, and goals for reading fluency, based on the Grade 2 ORF. The IEP team decides to set Cedric's Maze goal relatively low, using the intra-individual approach.

To set goals for fluency, it was fortunate that Ms. Morrison had tracked ORF during secondary prevention. The IEP team used that data to set goals for Cedric. There was no official guidance for appropriate ORF increases for Cedric because he is in Grade 4. However, the team decided to use the national improvement norms for fluency growth for Grade 2, 1.5 words/minute per week, to set Cedric's goal for ORF.

Important Note: We should emphasize here that this use of PM is somewhat “off the books” in that ORF is not typically used to measure Grade 4 progress. But, it is completely appropriate. The school continues to use grade-appropriate CBM and has set goals using these data, so they remain on the books in some sense. But, the school also wants to see meaningful change in Cedric this year, and they feel it will probably come first in reading fluency before it shows up on the Maze. This is a very reasonable assumption, so using the Grade 2 passages and norms as a guideline is a fine idea. Has this approach been thoroughly tested? No.

Understand that our purpose in this case study is to present a realistic example of how to use PM in an RTI context. This will always involve “off the books” situations like this. What we're showing you is how to (a) remain true to the aims of PM by continuing to measure grade-appropriate progress and (b) use PM in creative ways to support and track the progress of students who are far below grade level expectations.

Developing and Monitoring Individualized Instructional Programs

Once IEP goals are set and individualized programs are implemented, it is important to monitor student progress frequently (e.g., weekly). CBM can judge the adequacy of student progress and the need to change instructional programs. Standard decision rules guide decisions about the adequacy of student progress and the need to revise goals and instructional programs. It is possible to utilize these decision rules to inform decision making at the secondary prevention level. JCPS, however, uses slope data to guide decision making during secondary prevention. The district uses the following decision rules for instructional decision making at tertiary prevention.

Decision rules based on the most recent 4 consecutive scores:

- If the most recent 4 consecutive CBM scores are above the goal-line, the student's end-of-year performance goal needs to be increased.
- If the most recent 4 consecutive CBM scores are below the goal-line, the teacher needs to revise the instructional program.
- If the most recent 4 consecutive CBM scores approximate the goal-line, no changes are necessary.

Decision rules based on the trend-line:

- If the student's trend-line is steeper than the goal-line, the student's end-of-year performance goal needs to be increased.

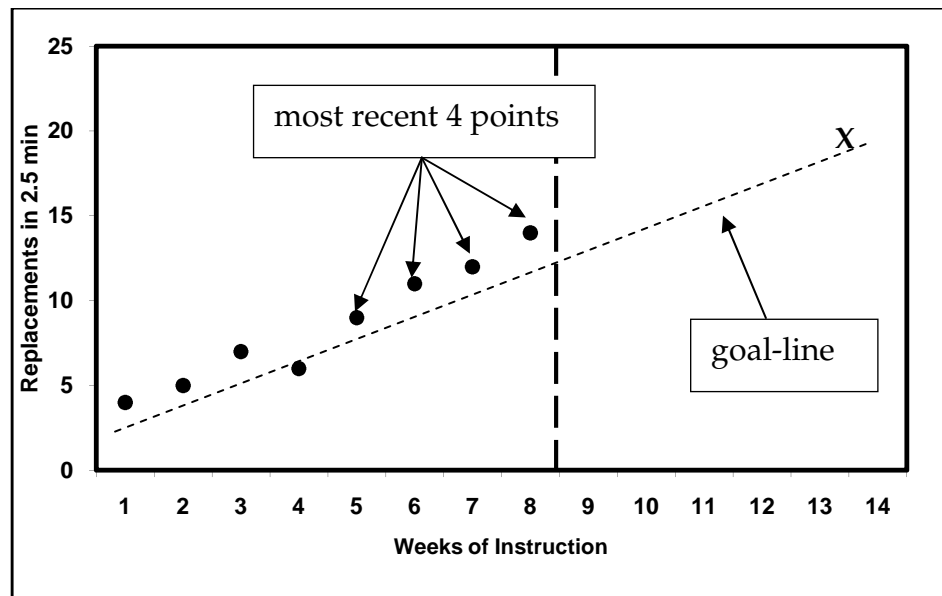
- If the student's trend-line is flatter than the goal-line, the teacher needs to revise the instructional program.
- If the student's trend-line and goal-line are the same, no changes are necessary.

The following graphs show examples of how each decision rule can be used to make decisions about student goals and instructional programs.

4 Consecutive Scores above Goal-Line

Here, the most recent 4 scores are above the goal-line. Therefore, the student's end-of-year performance goal needs to be adjusted. The teacher increases the desired rate (or goal) to boost the actual rate of student progress.

The point of the goal increase is notated on the graph as a dotted vertical line. This allows teachers to visually note when the student's goal was changed. The teacher re-evaluates the student's graph in another 7-8 data points.

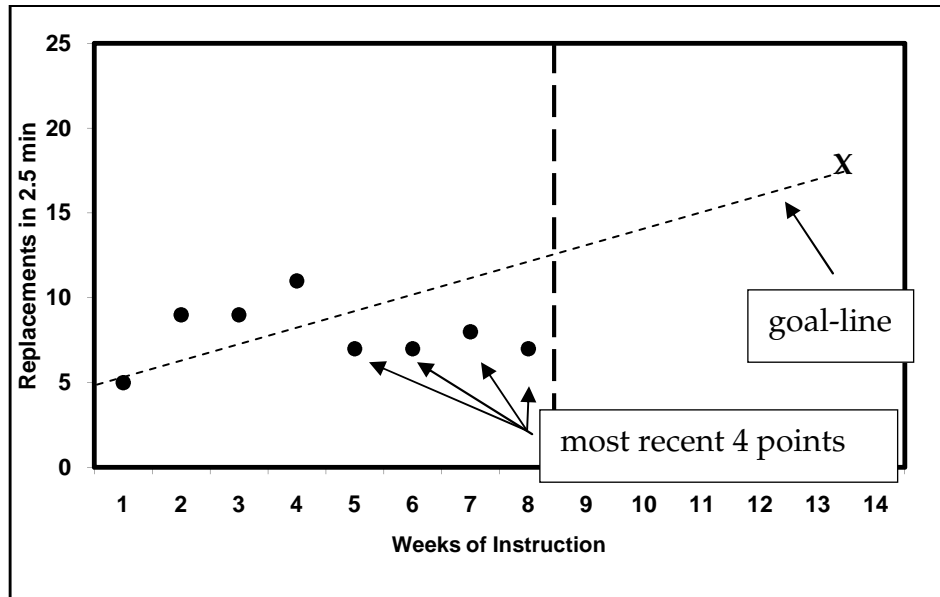


4 Consecutive Scores below Goal-Line

Below, the most recent 4 scores are below the goal-line. Therefore, the teacher needs to change the student's instructional program. The end-of-year performance-goal and goal-line never decrease; they can only increase. The instructional program should be tailored to bring a student's scores up so they match or surpass the goal-line.

The teacher draws a dotted vertical line when making an instructional change. This allows teachers to visually note when changes to the student's instructional program were made.

The teacher re-evaluates the student's graph in another 7-8 data points to determine whether the change was effective.

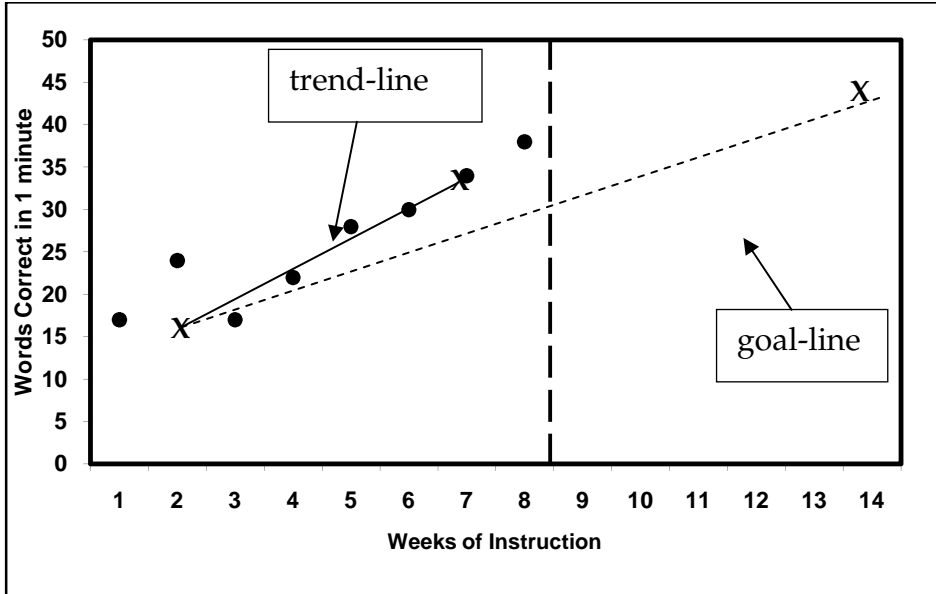


Trend-line Above Goal-Line

Below, the trend-line is steeper than the goal-line. Therefore, the student's end-of-year performance goal needs to be adjusted. The teacher increases the desired rate (or goal) to boost the actual rate of student progress. The new goal-line can be an extension of the trend-line.

The point of the goal increase is notated on the graph as a dotted vertical line. This allows teachers to visually note when the student's goal was changed. The teacher re-evaluates the student's graph in another 7-8 data points.

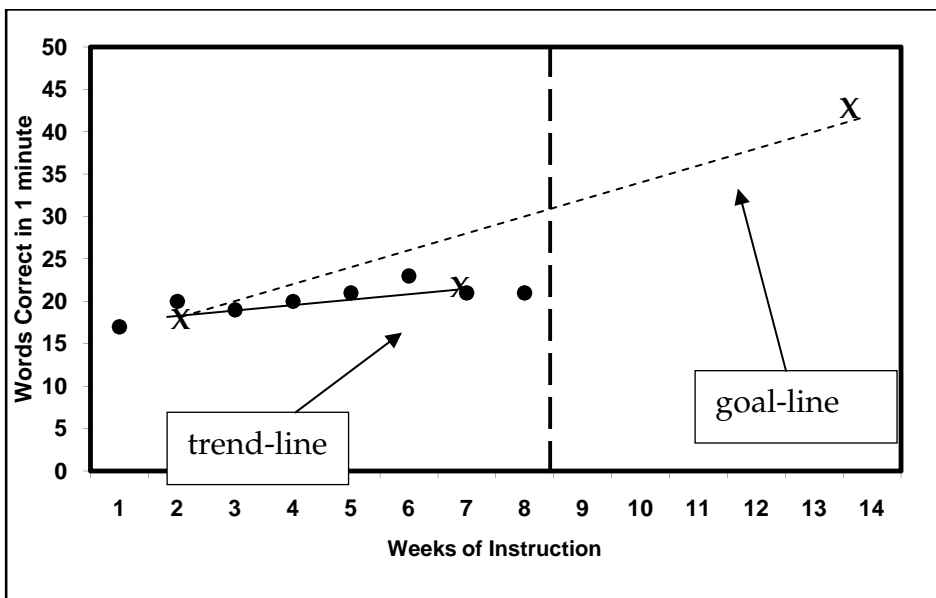
The data presented in the following sections are for oral reading fluency (ORF) rather than Maze. These represent Cedric's possible improvements on the Grade 2 ORF passages.



Trend-line Below Goal-Line

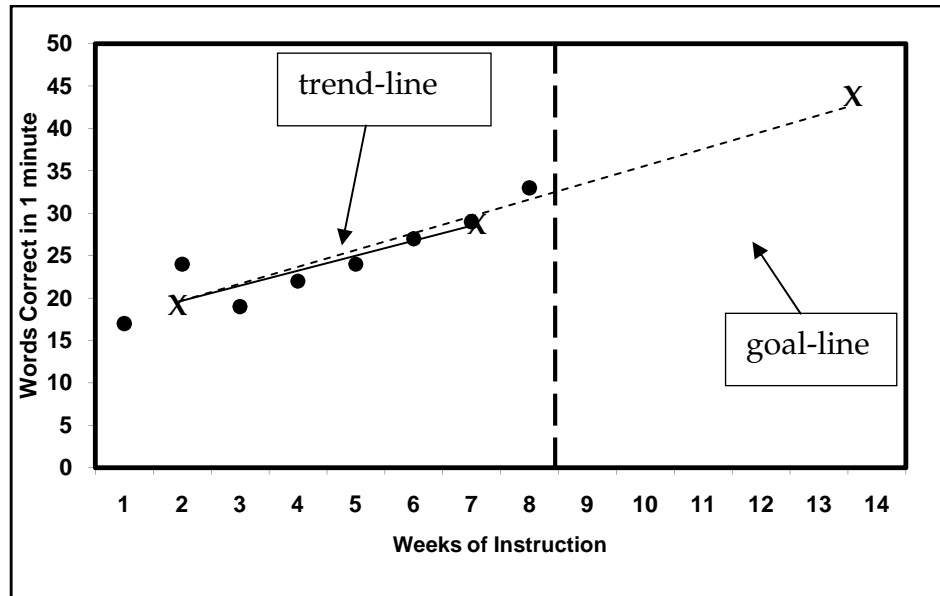
Below, the trend-line is flatter than the performance goal-line. The teacher needs to change the student’s instructional program. Again, the end-of-year performance goal and goal-line are never decreased! A trend-line below the goal-line indicates that student progress is inadequate to reach the end-of-year performance goal. The instructional program should be tailored to bring a student’s scores up.

The point of the instructional change is represented on the graph as a dotted vertical line. This allows teachers to visually note when the student’s instructional program was changed. The teacher re-evaluates the student’s graph in another 7-8 data points.



Trend-line Matches Goal-Line

Below, the trend-line matches the goal-line, so no change is currently needed for the student. The teacher re-evaluates the student's graph in another 7-8 data points to determine whether an end-of-year performance goal or instructional change needs to take place.



So, What Happens in Tertiary Prevention?

We have established Cedric's needs and the IEP goals he will work on, using national improvement norms. Now, Dr. O'Bannon begins to work with him. It is important to note that special education services, as they occur at tertiary prevention, are not automatically delivered on a one-to-one basis. Depending on the needs of the student, some services may be provided on an individual basis, some through small-group instruction, and some may occur through consultation with, and even provided by, the regular education teacher. It is important to note the distinction between these services and one-on-one tutoring that can occur in secondary prevention. Individual tutoring in secondary prevention does not mean that the student is receiving "special education" services.

In Cedric's case, there are three other students with very similar needs who have IEPs. Ms. Morrison, the reading specialist, schedules a special time of day to work with this group of students together. In addition, Dr. O'Bannon works with Cedric one-to-one on phonological awareness tasks because this is such a serious need for him. Dr. O'Bannon also takes responsibility for tracking Cedric's progress on the WIF CBM.

Determining Responsiveness in Tertiary Prevention

Dr. O’Bannon keeps track of Cedric’s CBM data, and uses it to calculate Cedric’s responsiveness to tertiary instruction. There are two ways to measure this. One is by examining the student’s slope. The other is by examining end level. Cedric’s reading fluency goal calls for him to read 53 correct words per minute on the Grade 2 ORF passages. So, it makes little sense to measure his response based on end level because his goal calls for him to end up below the cutoff of 60 words per minute! So, they will measure his response based on his slope of improvement. If Cedric is above the risk cutoff, they will continue the existing plan. If he falls below this cutoff, Dr. O’Bannon will work with Ms. Morrison and Mr. Amante to come up with better ways to meet Cedric’s needs. This may mean he receives more individual instruction from Dr. O’Bannon.

Quantifying Response to Tertiary Intervention in Reading

Grade	Measure	Measurements	
		> Slope	> End level
1 st Grade	WIF Fluency	> 1.8	> 50 words per minute
2 nd Grade	Passage Reading Fluency	> 1	> 60 words per minute
3 rd Grade	Passage Reading Fluency	> .75	> 70 words per minute
4 th Grade	CBM Maze	> .25	> 25 replacements per 2 ½ min
5 th Grade	CBM Maze	> .25	> 25 replacements per 2 ½ min
6 th Grade	CBM Maze	> .25	> 20 replacements per 2 ½ min

Discussion Questions

How well did RTI appear to work in Mr. Amante's class?

What additional responsibilities did Mr. Amante have to handle during the school year that he didn't have to handle when George Washington Carver Elementary was not implementing RTI?

What changes would you make (if any) for the subsequent year?

Traditional special education referrals have been based on an achievement/IQ discrepancy. What are the pros and cons of this traditional way?

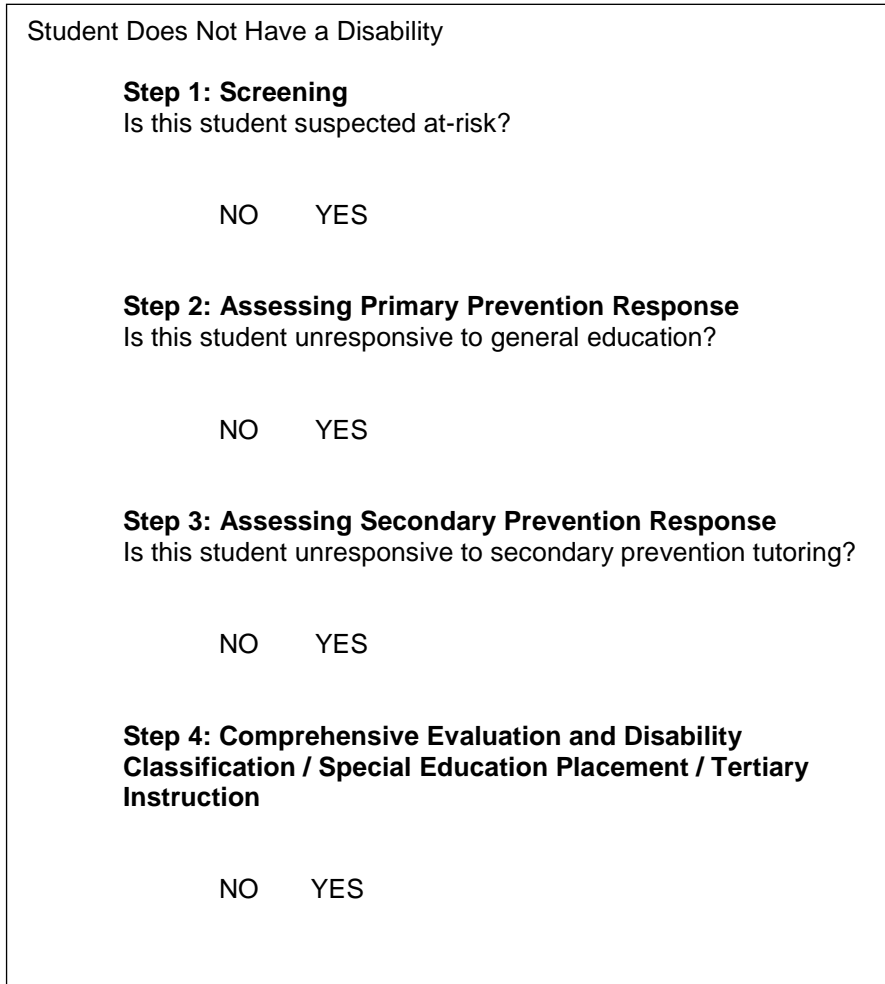
How is RTI different from the achievement/IQ discrepancy method for special education referral and placement?

What are the pros and cons of RTI?

Why might school districts want to implement RTI for special education placement decisions instead of the traditional method?

Which method for identifying special education students would you choose? Why?

Look at this flow chart. First, draw Quinn's path under the RTI model. Next, draw Katherine's path. Finally, draw Cedric's path.



Draw your own flow chart, diagram, or picture depicting a three-level RTI model.

How were progress monitoring and specific interventions used in each of the three levels?

Primary Prevention:

Progress Monitoring:

Interventions:

Secondary Prevention:

Progress Monitoring:

Interventions:

Tertiary Prevention:

Progress Monitoring:

Interventions:



Appendix A: Benchmark Data for Reading CBM

Appendix B: Answers to Questions

Appendix A: Benchmark Data for Reading CBM

Reading At-Risk Cutoffs with Fall CBM Screening

Grade	Measure	Benchmark
Kinder	Letter Sound Fluency	< 10 letters/minute
1 st Grade	WIF Fluency	< 15 words on list/minute
2 nd Grade	Passage Reading Fluency	< 15 words in text//minute
3 rd Grade	Passage Reading Fluency	< 50 words correct/minute
4 th Grade	CBM Maze	< 10 replacements/2 ½ min
5 th Grade	CBM Maze	< 15 replacements/2 ½ min
6 th Grade	CBM Maze	< 20 replacements/2 ½ min

Quantifying Inadequate Response to Primary Prevention in Reading

Grade	Measure	Slope
Kindergarten	Letter Sound Fluency	< 1
1 st Grade	WIF Fluency	< 1.8
2 nd Grade	Passage Reading Fluency	< 1
3 rd Grade	Passage Reading Fluency	< .75
4 th Grade	CBM Maze	< .25
5 th Grade	CBM Maze	< .25
6 th Grade	CBM Maze	< .25

Typical End-of-Year Benchmarks in Reading

Grade	Measure	Benchmark
1 st Grade	WIF Fluency	60 words correct/minute
	Passage Reading Fluency	50 words correct/minute
2 nd Grade	Passage Reading Fluency	75 words correct/minute
3 rd Grade	Passage Reading Fluency	100 words correct/minute
4 th Grade	CBM Maze	20 replacements/2 ½ min
5 th Grade	CBM Maze	25 replacements/2 ½ min
6 th Grade	CBM Maze	30 replacements/2 ½ min

Risk Cutoffs for Secondary Prevention (Students should score above these levels)

Grade	Measure	Measurements	
		< Slope	< End level
Kindergarten	Letter Sound Fluency	< 1	< 30
1 st Grade	WIF Fluency	< 1.8	< 30
2 nd Grade	Passage Reading Fluency	< 1	< 60
3 rd Grade	Passage Reading Fluency	< 0.75	< 70
4 th Grade	CBM Maze	< 0.25	< 25
5 th Grade	CBM Maze	< 0.25	< 25
6 th Grade	CBM Maze	< 0.25	< 25

Goals for Students in Tertiary Intervention in Reading (Students goals should be at these levels)

Grade	Measure	Measurements	
		> Slope	> End level
Kindergarten	Letter Sound Fluency	> 1	40 sound/minute
1 st Grade	WIF Fluency	> 1.8	60 words/minute
2 nd Grade	Passage Reading Fluency	> 1	75 words/minute
3 rd Grade	Passage Reading Fluency	> 0.75	100 words/minute
4 th Grade	CBM Maze	> 0.25	20 replacements/2 ½ min
5 th Grade	CBM Maze	> 0.25	25 replacements/2 ½ min
6 th Grade	CBM Maze	> 0.25	30 replacements/2 ½ min

CBM Reading Norms for Student Growth (Slope)

Grade	Measure	Norm Slope
1st Grade	WIF Fluency	1.8
2 nd Grade	Passage Reading Fluency	1.5
3 rd Grade	Passage Reading Fluency	1.0
4 th Grade	CBM Maze	0.40
5 th Grade	CBM Maze	0.40
6 th Grade	CBM Maze	0.40

Appendix B: Answers to Questions

Question 1 Answer: CBM is designed to measure key grade-level skills, but it also needs to be short and simple. The Maze meets these criteria. Comprehension is a critical Grade 4 skill, and students need comprehension skills to select the correct replacement. The Maze is also short and simple, since it takes only 2 ½ minutes and can be administered to whole groups of students at one time.

Reading experts associated with the National Center on Student Progress Monitoring have examined the Maze and measures like it. They have found these measures to be moderately strongly related to widely-used reading comprehension results. So, if students are making good progress according to the Maze, it is likely this would be observed on major reading comprehension assessments as well.

Question 2 Answer: Universal screening only tests one thing: *Level*. Earlier, we stated that students are considered for special education only if they exhibit a dual discrepancy. The same thing is true for secondary prevention. If students begin below grade level but are making strong progress with primary prevention alone, secondary prevention is not necessary. Secondary prevention is used when students start below grade level *and* do not make strong progress (have a positive *trend*).

In this case study, we are dealing with Grade 4 students. In JCPS, a large percentage of students stay in the district, so they have Grade 3 data on these students. In cases where students do poorly on Grade 4 universal screening but made adequate progress in Grade 3, we might suspect the students had a bad day. We wouldn't want to give them a lot of additional support just because they weren't feeling well when they did the Maze!

Question 2 Follow-up: When might it be appropriate to provide immediate support to an older reader who does poorly on the universal screening?

If students are new to the district and do very poorly on the CBM (they fall very far below the benchmark), the district had no way of catching students' problems earlier. It makes little sense to withhold clearly-needed support for students who are in great need. The kind of support provided for these types of students will need to be very intensive.

Question 3 Answer: All students were screened at the beginning of the year and the progress of those with low scores was monitored. By the middle of the year, some students who had scores above the at-risk cutoff—particularly those right above the cutoff—may not have made good progress. These students now need secondary prevention, even though they did not need it at the beginning of the year. So, it is important to screen again to see if any students have become “at risk.”

Question 4 Answer: Mr. Amante's goal is to get a fair picture of his students' ability, so he doesn't want to rely on one assessment alone. The CBM Maze passages were designed to contain words Grade 4 students would know, but sometimes students do better on one passage than another. So, let's say Passage A has more words Mr. Amante's students know and Passage B has fewer words his students know. If Mr. Amante only gave Passage B, he would *underestimate* the ability of his students. If he only gave Passage A, he would *overestimate* their ability. Both cases are not good. So, Mr. Amante administers both passages and calculates the average of the two

Question 5 Answer: Mr. Amante waits about one week before testing his students at the beginning of the year. There are two reasons for this.

- First, Mr. Amante wants to make sure that his students are adjusted to school before he administers the Maze. If he did it on the first day of school, students' results might be negatively affected by general anxiety about starting the year. But, he doesn't need to wait too long before testing them. Unlike students in the lower grades, 4th graders know the routines of school and adjust more quickly.
- Second, Mr. Amante may have to do it all over again if he starts too early because students tend to change classes often during the first few weeks. Sometimes, class rosters are not solid until the third or fourth week of school! But, Mr. Amante isn't very worried because it is very easy to administer the Maze to a few additional students once they filter into his class.

Note that this is different than what may be recommended for younger students, who need more time to adjust and where administering the screening is more time-consuming.

Question 6 Answer: The purpose of CBM is to track student progress over time, so Mr. Amante has to be careful that differences in student scores are due to their improvement, not to the way he administers the test. Imagine that the first time Mr. Amante administers the test, he gives very unclear directions. The second time, he explains the test in much more detail and much more carefully. Students may do better the second time, but not because they became better readers. Their improvement may be due mostly to Mr. Amante's better explanation of the task. The test isn't designed to measure how well students understand the directions, so it is important Mr. Amante administers it the same way each time.

Question 7 Answer: He should definitely give them on different days. There are a couple of reasons for this. The primary reason is that the CBM Maze takes very little time, and it is better to get student data from two different days. It is far less likely in this case that students will do poorly because of one bad day. As long as they do well at least once, their results should be ok. The second reason is that students have never done the Maze before (the progress monitoring tool for Grade 3 was passage reading fluency). So, getting two totally separate opportunities to do this will make it less likely that both scores will be reduced because students are not familiar with the test format (as may be likely if they are both given on the same day). Finally, Mr. Amante starts Maze assessment very early, so he can take an extra week and not get behind in his progress monitoring effort.

Question 8 Answer: Brenda, Cedric, Emily, Isaac, Katherine, Leslie, Quinn, Roman, Xavier, Yasmin, and Zachary are considered at-risk because their scores fall below the “at risk” cutoff of 10 correct Maze replacements in 2 ½ minutes.

Question 9 Answer: If you thought we should begin secondary intervention for the students who are below the cut-off, you had the right idea, but we’re not going to do that yet.

Why not? This is the first time students have taken the Maze assessment. In addition, Grade 4 is the first grade where students are spending almost all of their time working on reading comprehension (with a very minor focus on fluency). As a result, students may grow well in the first few weeks of Grade 4 as they adjust to this new focus on comprehension. We will give them some time to adjust.

Question 10 Answer: Zachary is a very strong candidate for immediate, very intensive intervention. It is not clear why Zachary has struggled so much, but he clearly needs a lot of additional help. It would not make sense to merely monitor his progress without intervening in addition. The Reading Specialist, Ms. Morrison, will work with him, but she will need to do additional academic assessments to understand the nature of his problem. It is not at all clear from the CBM whether he needs comprehension, fluency, or decoding support.

Xavier should begin receiving tertiary support immediately. In most cases (as we will see), an IEP goes along with tertiary intervention. Accordingly, Xavier has an IEP, which means he is legally entitled to tertiary instruction, and it makes sense given his prior difficulty. So, he will continue to receive support from the resource teacher, Ms. Zhang.

Because Yasmin has not demonstrated prior difficulty in reading, it is probably reasonable to stick with the progress monitoring for now. She might benefit from additional instruction, but she may also catch on to the grade level demands. It is best to wait.

Cedric is probably the toughest case, and it is probably a toss-up. If he and Zachary turn out to have similar types of problems (e.g., they both have weak fluency), it would be a good idea to have Ms. Morrison work with both of them at the same time. On the other hand, if Ms. Morrison’s additional assessments show that he only struggles with comprehension, it would be worthwhile to monitor his progress in Mr. Amante’s class and wait before providing additional instruction. In this case, Mr. Amante and the Reading Specialist judged his problems were mostly with comprehension and did not provide additional support immediately.

Question 11 Answer: To calculate Cedric’s slope, take the median for the last three points (4) and subtract the median for the first three points (5): $4-5 = -1$. Then, divide by number of probes minus 1 (7): $-1/7 = -0.14$. Cedric’s slope is negative, that is, he is replacing fewer Maze items correctly each time.

For Roman, the last three median is 16 and the first three median is 9. The difference is 7. The number of probes minus 1 is 7. $7/7 = 1$. So, Roman is replacing—on average—about 1 more word correctly in each CBM Maze that he completes.

Question 12 Answer: Emily, Isaac, Quinn, Roman, and Yasmin have demonstrated adequate progress because their slopes exceeded 0.40. So, they are not at-risk any longer. What happens now is that they continue with primary prevention in Mr. Amante's class. Mr. Amante will discontinue monitoring their progress for now. (He will screen them again at midyear to be sure they are still making adequate progress.)

Question 13 Answer: Brenda, Cedric, Katherine, Leslie, Xavier, and Zachary have not made adequate progress. All of their slopes are below 0.40.

Secondary prevention instruction is the next step for these students. If they continue in the primary prevention program alone, they will probably continue to fail. We know that the problem is not due to problems with Mr. Amante's instruction. He uses a research-based program, he follows the pacing guide, his colleagues have checked his fidelity and found it high, and other at-risk students are responding to his instruction. The non-responsive students need something more than Mr. Amante can provide through the primary prevention program.

Note that Xavier and Zachary are already receiving additional support, Xavier by the requirements of his IEP and Zachary because Mr. Amante and Ms. Morrison, and Zachary's parents suspected he might need additional support after transferring from another school system. The CBM data suggest that they continue to need this additional support.

It also important to point out that we decided not to provide Cedric with additional support from the beginning of the school year, but he has the lowest growth of all the students. Because he, like Zachary, was from another school district, immediate intervention would have been appropriate (and appears to have been necessary).

Question 14 Answer: For those students who have been in JCPS for several years (all except Cedric and Zachary), Mr. Amante has lots of progress monitoring data. In Grade 3, students completed timed passage readings (called oral reading fluency, ORF), and their ORF scores will serve as an indicator of their prior fluency. If their ORF scores were borderline at the midyear or weak on the end-of-year screening, *Fantastic Fluency* would be the better program. If they appeared to have decent fluency earlier (i.e., cleared the Grade 3 benchmarks handily), Reading For Meaning would be the better choice.

The principal, Dr. O'Bannon, provided the teachers with a roving substitute for one day to allow them to actually administer one of the Grade 3 ORF passages to their students who need secondary prevention. Dr. O'Bannon wanted the teachers to be able to make good program choices based on recent ORF data. If students' ORF scores were low, they would get *Fantastic Fluency*. If not, they would get Reading For Meaning.

Note that there is no perfect system for choosing programs, particularly in the upper grades. Your idea may be very different but still perfectly acceptable. As long as it indicates that the choice of program is being made with strong logic that this is what students need, it's fine.

Question 15 Answer: It appears so. If you cover $\frac{1}{2}$ the data at a time, such that the data for the pre- and post-secondary prevention appear on their own, you can see that the trends are very different. Leslie's slope is much steeper during secondary prevention.

Question 16 Answer: We should use her slope too. Although the graph is pretty convincing, visual examination of data can be deceptive. Calculating the slope will make us confident that Leslie really did respond.

Question 17 Answer: Median of Group 3 (16) minus median of Group 1 (12), divided by number of probes minus 1 (7): $(16-12)/7 = 0.57$.

Question 18 Answer: Leslie and Katherine responded to secondary intervention, with slopes of 0.43 and 0.57 respectively. Brenda and Cedric did not respond adequately, with slopes of 0.29 and 0.14 respectively.

Question 19 Answer: The second screening will check to see if any students who were at the appropriate level at the beginning of the year are now at-risk. If any other students are at-risk they can participate in secondary prevention now.

Question 20 Answer: Brenda, Cedric, Emily, Paige, Ulises, Xavier, Yasmin, and Zachary should be considered at-risk.

Question 21 Answer: Brenda is probably a good candidate for additional secondary prevention. She's very close to the cutoff, and she may benefit from just a little more secondary prevention. Tertiary support is intensive and expensive, and if it is not truly necessary, it is best to reserve those resources for students who demonstrate a very clear need. Brenda has not reached that point.

Question 22 Answer: You take the median of the first three data points (here, 4) and the median of the last three data points (here, 5). Then, subtract the first from the last: $5-4=1$.

Question 23 Answer: We multiply the slope by the number of weeks, so, for , $0.40 \times 12 = 4.8$. Then, we add this to his 8 week average ($4.34 + 4.8 = 9.14$ correct Maze replacements in 2 ½ minutes). This will be his goal for tertiary instruction.

Question 24 Answer: Cedric may not make the desired gains on the CBM Maze because his immediate instructional needs are so different than the skills tested by the Maze. Cedric will be participating in a curriculum focused on basic reading skills, so a test of his comprehension may show some growth, but it may be somewhat slow. By using a measure like ORF, Ms. Zhang will get a clearer sense of how well Cedric is responding to tertiary instruction.

Question Follow-Up: If Cedric's needs are so different than the skills tested by the Maze, why give the Maze at all?

It is still important to see whether the basic reading skills Cedric is building are having any impact on grade-level skills. For example, if Ms. Zhang measures progress with the Grade 2 ORF passages, and Cedric improves, this is great news. However, Cedric is ultimately trying to reach Grade 4 expectations and we want to see whether he is making progress toward this end.

It would, however, be appropriate to do Maze testing somewhat less often with Cedric. Giving him the assessment every three weeks or so would allow Ms. Zhang to see if he's starting to make any progress on the Grade 4 material. If she begins to see he is doing better on Maze, she would eventually return to giving it weekly.