A Quick Start Guide for Making Data-Based Academic Decisions to Support Students with Challenging Behaviors

MU Center for SW-PBS

This Quick Start Guide is adapted from:
Center for Adolescent Research in Schools (2014). The CARS Classroom-based interventions manual. Bethlehem, PA: Center for Adolescent Research in Schools, Lehigh University.

McMaster, K., & Lembke, E. (2015). Data-Based Instruction in Beginning Writing: A Manual. Minneapolis, MN: University of Minnesota. Retrieved from http://dbitlc.missouri.edu

Suggested Citation:
Poch, A. L. (2017). *A teacher's quick start guide for making data-based academic decisions to support students with challenging behaviors*. Columbia, MO: MU Center for SW-PBS, University of Missouri.

<center>**An Introduction**</center>

What is Schoolwide Positive Behavior Support?

Schoolwide Positive Behavior Support (SW-PBS) is a schoolwide system or process that includes strategies for identifying, defining, teaching, and supporting students' behavior and for establishing safe and positive school environments, including classroom and non-classroom settings (MU Center for SW-PBS, 2016; Positive Behavioral Interventions & Supports: OSEP Technical Assistance Center website). SW-PBS seeks to improve the connection between research-based practices and the environments in which teaching and learning occur within schools. Providing support across three tiers – Tier I (universal), Tier II (small group), and Tier III (individual) – helps to ensure that all children are provided with opportunities to be successful and safe, where appropriate behavior is the expected outcome. SW-PBS also provides a framework for integrating academic and behavioral supports. Unfortunately, in many school districts, academics and behavior continue to operate as separate, exclusive systems for supporting students, particularly at-risk students and students with identified disabilities.

What is Response to Intervention?

Response to Intervention (RTI) is a multi-tiered system of support for both supporting struggling learners and for identification of students with learning disabilities (RTI Action Network, n.d.). The RTI process begins by providing high-quality, research-based instruction in the general education classroom along with universal screening (Tier I). Struggling learners, those not responding to the high-quality, research-based instruction, are provided increasing levels of supplemental support. At Tier II, this is usually targeted intervention within small groups. Students who continue to demonstrate little to no progress are supported at Tier III with intensive, individualized interventions. Tier II and III support is always provided in addition to what students receive in the general education classroom. During Tiers II and III student progress is closely tracked through a validated progress monitoring system such as curriculum-based measurement (CBM). Students in Tier III who continue to show limited or no response may be referred for a comprehensive evaluation for eligibility for special education services in accordance with the Individuals with Disabilities Education Act (IDEA).

Going Academic: A Look at the Other Side of the Triangle

Though PBS is not currently authorized for identifying learners with emotional/behavioral disturbances, many students with challenging behaviors also experience deficits in academics. This can be difficult because it is not always known whether a student's behaviors are leading to a loss of academic skills, or whether a student's academic deficits are leading to a number of challenging behaviors.

In order to support students and teachers, it is important to look at the other side of the triangle (see Figure 1). Use of a comparable multi-tiered system of support (MTSS) can offer means by which to support students who are still struggling with academics even after behaviors have been addressed. Also, recall that Tier I supports are universal, meaning that they are provided to all students. Tier II is targeted instruction which is frequently provided in small groups. Tier III is

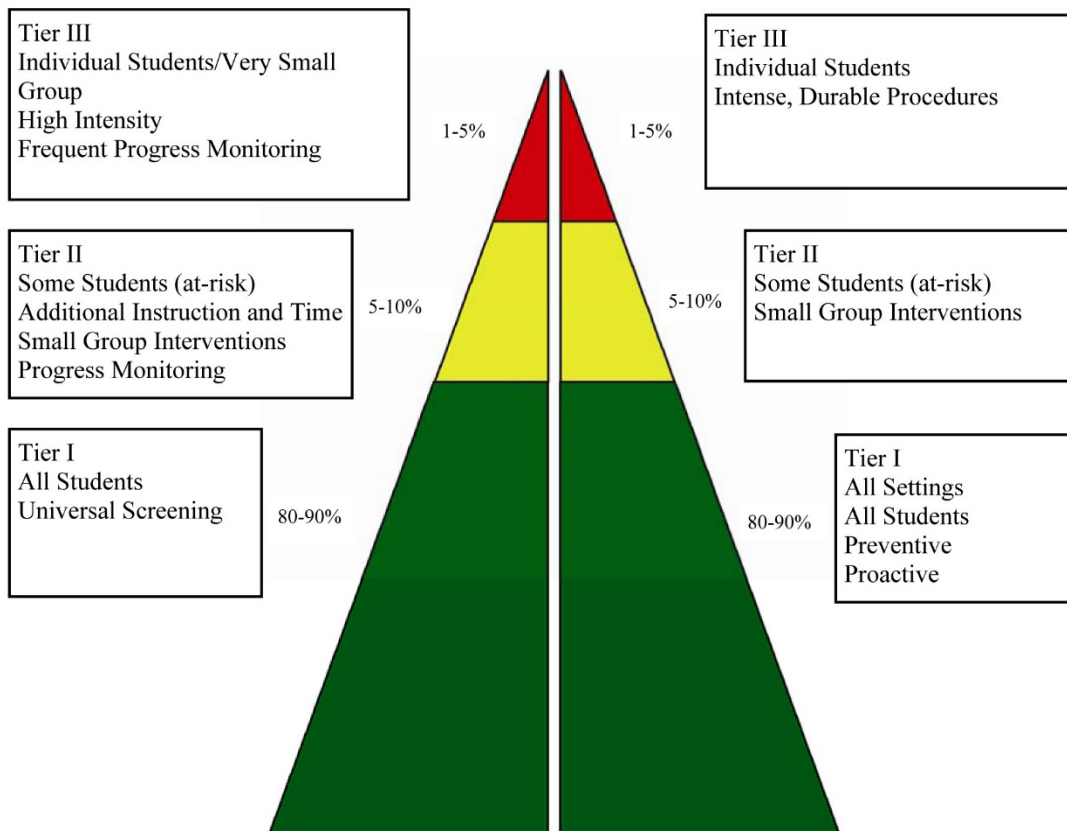individualized and intensive support for students with the greatest academic and behavioral needs.

This guide is intended to provide an overview of academic materials that may be helpful for supporting the reading, writing, and mathematical needs of students with challenging behaviors. Indeed, making data-based academic decisions is very similar to making data-based behavioral decisions.

After reading this guide, you will be able to:

1. Describe the Data-Based Instruction (DBI) framework.
2. Describe how to make data-based decisions in academics.
3. Select, administer, score, and graph student-level academic data.
4. Implement the eight steps of the DBI process with fidelity.

Academic Systems

Tier III
Individual Students/Very Small Group
High Intensity
Frequent Progress Monitoring

1-5%

Tier II
Some Students (at-risk)
Additional Instruction and Time
Small Group Interventions
Progress Monitoring

5-10%

Tier I
All Students
Universal Screening

80-90%

Behavioral Systems

Tier III
Individual Students
Intense, Durable Procedures

1-5%

Tier II
Some Students (at-risk)
Small Group Interventions

5-10%

Tier I
All Settings
All Students
Preventive
Proactive

80-90%

Figure 1. Tiered systems for supporting academics and behavior.

A Note to Teachers (and Administrators)

This guide is intended to provide you with a broad representation of how you might target students' academic difficulties, including corresponding accommodations and instructional and assessment practices. Please know that this guide should not be viewed as a representation of every school or every district. The intent was to help guide teachers in thinking about the academic struggles that some of their students might encounter, including students for whom corresponding behavioral interventions and data are currently being implemented and collected. That being said, you are encouraged to consult with other members of grade and/or building level teams as well as local administration on the resources that are available within your building or district and to have a conversation about what is a school/district priority. It may be that teams, schools, and/or districts may already have or may consider adopting a more concise toolbox of contained accommodations and/or instructional/intervention and assessment practices from which you might be required to select for supporting your students' needs.

Moreover, matching accommodations and evidence-based practices to curricula choices can be time consuming. Schools and districts are encouraged to find what works by accessing the What Works Clearinghouse (https://ies.ed.gov/ncee/wwc/). The What Works Clearinghouse reviews the available research on a variety of practices, programs, and products used in schools. The goal of the What Works Clearinghouse is to provide educators and administrators with useable information to guide the use of evidence-based-decisions when making instructional and curricular decisions.

For teachers and/or schools looking to implement data-based decision making practices across a grade level or school-wide, it is suggested that teams take time to carefully determine the structures that are currently in place when it comes to academic instruction and what structures will be required to make this successful. Teams might also find it necessary to examine the horizontal and vertical curricular plans in place to ensure that an accurate or feasible progression of skills has been established.

Change takes time and buy-in from all faculty and staff. And, students respond in different ways to different instructional practices. Data-based decision making is complex and some teachers may not have adequate training in these techniques. So, start small and build up over time.

However, the following recommendations are provided:

- Establish ground rules – focus on the outcomes; nothing is sacred but everything is important
- Start with data – data only show a snapshot of what is going on and must be contextualized
- Match practices to data – don't limit to what you currently know; tap outside resources
- Align resources to implement practices – new roles to reach outcomes will require training and technical assistance
- Data-based decision making is complex and will require attention to student performance, methods for identifying struggling learners, tools for progress monitoring, and a continuum of evidence based practices

Data-Based Decision Making in Academics

Data-Based Decision Making is a *problem solving process* used to identify the supports that students need at all tiers of instruction, but this guide is specifically focusing on students at Tiers II and III. This process is cyclical, often requires multiple rounds of changes before getting the instruction "just right" for any one student, and decisions are usually made by a team of qualified individuals who are familiar with the student and his/her needs.

You may have seen the *problem solving process* represented like the following image.
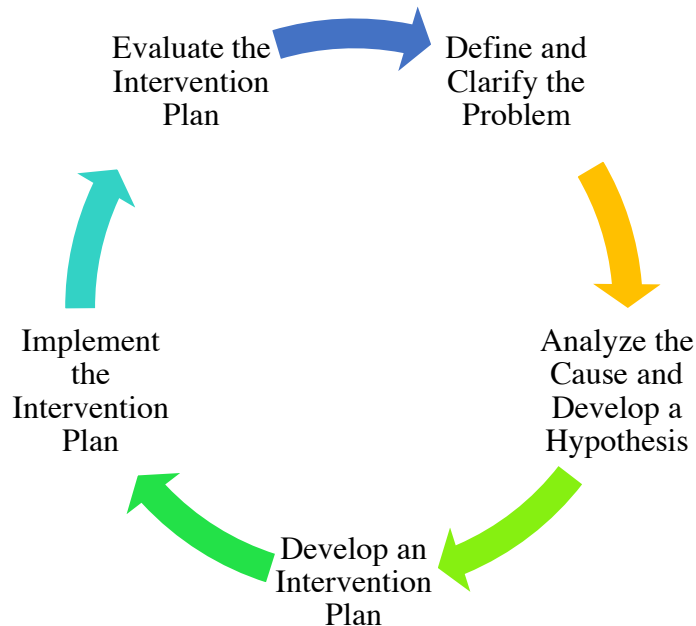
Figure 2. The Problem Solving Process. (adopted from Millard Public Schools, 2016)

Define and Clarify the Problem: At this phase, it is important to identify what difficulty the student is having.

Analyze the Cause and Develop a Hypothesis: Why is the student having this difficulty? What is causing the difficulty?

Develop an Intervention Plan: Using evidence-based practices and known instructional accommodations, develop a plan for supporting the student. What will you put in place to help the student in the area of difficulty? How will you know that the student is making progress? Be sure to identify an evaluation schedule for tracking student progress.

Implement the Intervention Plan: Now that you have a plan, implement it with fidelity – as scheduled and as intended.

Evaluate the Intervention Plan: Has the plan been effective for the student? Use data-based decision making processes to determine whether the student is making adequate progress. If adequate progress is not being made, continue the cycle.
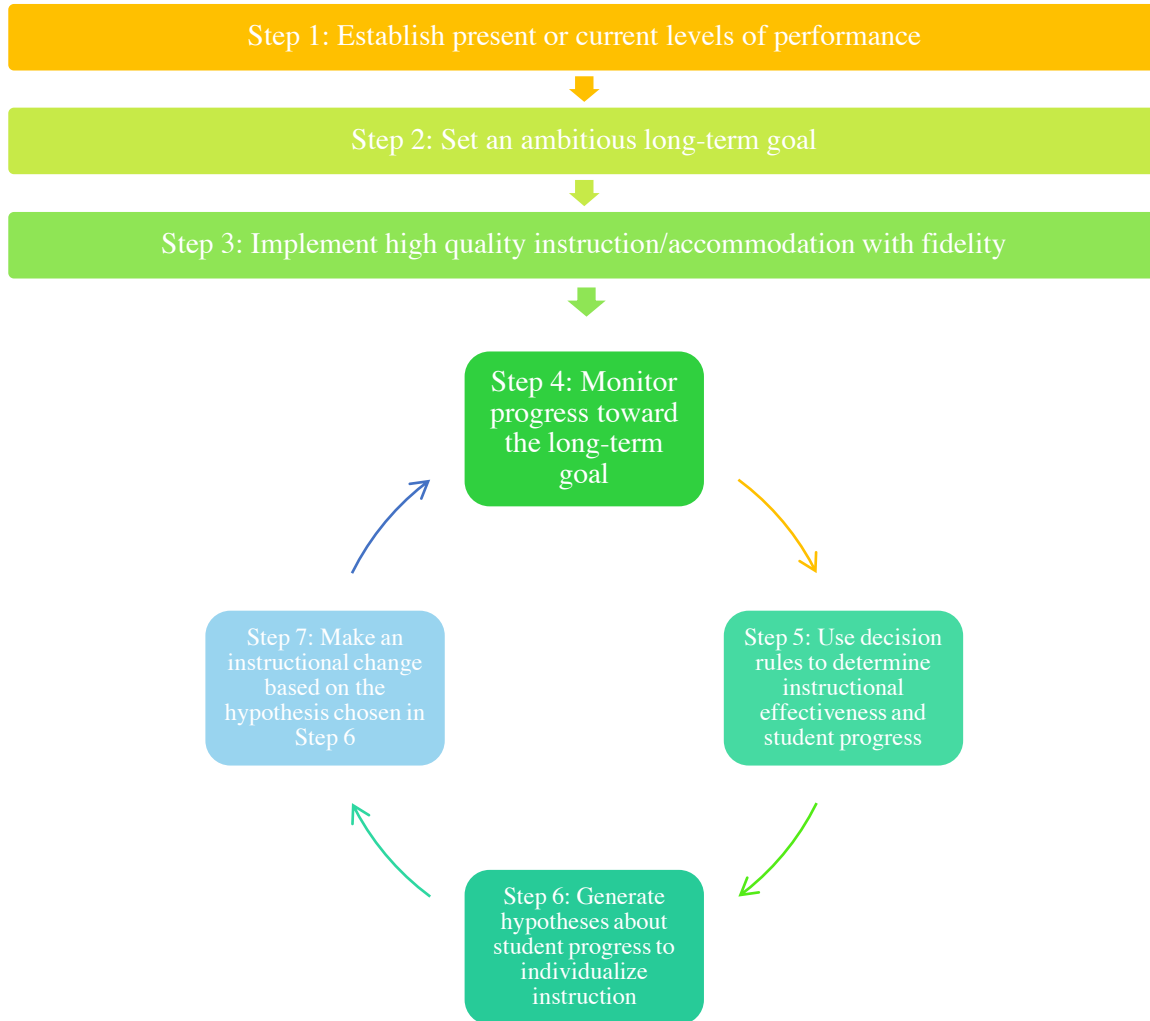
One way of conceptualizing and detailing the *problem solving process* is through Data-Based Instruction.

What is Data-Based Instruction?

Data-Based Instruction (DBI) is an iterative and multi-step process that involves the analysis of student-level performance data (e.g., progress monitoring, CBMs, etc.) which is followed by individualization and implementation of validated academic or behavioral instructional practices (see Figure 2) (National Center on Intensive Intervention [NCII], 2013). When collected data demonstrate inadequate progress, teacher judgment and clinical expertise are used to modify the delivery of said instructional and behavioral practices. DBI is frequently implemented within the context of multi-tiered systems of support (e.g., RTI, PBS). DBI is appropriate for learners with the most intensive learning and behavioral needs, and DBI improves teachers' decision-making skills and results in improved student outcomes (Stecker, Fuchs, & Fuchs, 2005). Students with the most intensive needs (e.g., students at Tier III) are likely to require multiple rounds of problem solving before identifying an effective treatment regimen, with consecutive rounds of problem solving becoming particularly more specialized and individualized as time goes on. For students requiring more targeted instructional techniques (e.g., students at Tier II), students are not likely to require as intensive and as individualized approach. The same type of problem solving process will be necessary, but the level of supports required will vary.

The process has been denoted as an 8-step process by McMaster and Lembke (2015) with the final step being the repetition of steps 4-7 as needed. A modified layout of the DBI steps is included on the next page.

What are the Steps of DBI?

Step 1: Establish present or current levels of performance

Step 2: Set an ambitious long-term goal

Step 3: Implement high quality instruction/accommodation with fidelity

Step 4: Monitor progress toward the long-term goal

Step 5: Use decision rules to determine instructional effectiveness and student progress

Step 6: Generate hypotheses about student progress to individualize instruction

Step 7: Make an instructional change based on the hypothesis chosen in Step 6

Figure 3. The Data-Based Instruction Cycle. (adapted from McMaster & Lembke, 2015)

How does the Problem Solving Process Align with the DBI Process?

Phase in the Problem Solving Process	Step(s) in the DBI Process
Define and Clarify the Problem	Establish present or current levels of performance (1)
Analyze the Cause and Develop a Hypothesis	Establish present or current levels of performance (1) Set an ambitious long-term goal (2)
Develop an Intervention Plan	Set an ambitious long-term goal (2)
Implement the Intervention Plan	Implement high quality instruction (3) Monitor progress toward the long-term goal (4)
Evaluate the Intervention Plan	Use decision rules to determine instructional effectiveness (5) Generate hypotheses about student progress (6) Make an instructional change based on the hypothesis (7)
Continue the cycle as needed	Repeat steps 4-7 as needed (8)

What is Curriculum-Based Measurement?

Curriculum-based measurement (CBM) has been identified as a valid and reliable way of tracking student progress (Deno, 1985). Developed in the mid-1970s by Dr. Stan Deno and colleagues at the University of Minnesota's Institutes for Research on Learning Disabilities, CBM is a process where students complete multiple forms of the same measure over a series of time. These forms, of equivalent difficulty, are scored and then graphed. CBM is intended to be simple, inexpensive, unobtrusive, and a quick check of student performance (much like checking somebody's temperature when he/she is sick) (Deno, 1985; 2003). Given that CBMs have established reliability and validity, many schools have adopted the use of CBM, especially in reading and mathematics, though CBMs exist for many academic areas. CBM has also become associated with the implementation of DBI, though it is not a prerequisite for using DBI. Teachers may use a variety of means for tracking student progress, though CBM have garnered much attention in recent years. Weblinks to additional information about CBMs have been provided later in this guide.

Getting Started

Let's get started! For the purposes of this guide, we are going to focus on using the DBI process to facilitate delivery of appropriate instructional accommodations that might be appropriate for supporting your struggling learners.

What are Accommodations?

Accommodations are changes to **how** the content is taught and made accessible for learners with disabilities. Though we are most interested in instructional accommodations, accommodations can also be administered during testing. Accommodations do not change the construct of what is being measured and/or taught (i.e., the content that students are expected to master), but rather seek to even the playing field so that struggling students can learn the same materials as their peers, thus providing students with a means of demonstrating their learning of the content. The

term accommodation can be used to describe an alteration of the (a) environment or setting, (b) curriculum format or presentation, or (c) equipment that allows the student to gain access to content and/or complete assigned tasks. Accommodations are one way to provide differentiated instruction within the general education curriculum, though some students will also need these accommodations in a variety of settings. (For a listing of common accommodations, see https://www.understood.org/en/learning-attention-issues/treatments-approaches/educational-strategies/common-modifications-and-accommodations)

Throughout the remainder of this guide, you will be able to follow the steps of the DBI process to evaluate your use of instructional accommodations for supporting a target student(s). First, though, let's begin by exploring two applied examples.

Applied Example #1: Student with a Disability

Damien is a seventh grade student who receives special education services for an emotional disturbance (and a history of intermittent explosive disorder). He participates in all general education classes independently, but attends Mr. Hadley's resource room where he receives support in reading and writing. Though his teachers have been working together to support his behavioral needs, the team also believes it is time to begin focusing on how they can also support Damien's academic needs, especially in writing. The teachers have noticed how effective it has been to coordinate on how they support student behavior and they want to continue to work together on academics. Mr. Hadley also knows that he will need to track Damien's progress on a frequent basis in order to determine whether Damien is responding appropriately to instruction. Mr. Hadley offers that they might begin by considering the classroom accommodations that are listed on Damien's Individualized Education Plan (IEP). To begin, the team decides it will be important to establish Damien's present levels of performance in writing. The team follows the eight steps of the DBI process to determine what they believe will be effective educational planning/instruction for Damien.

Step 1: Establish present or current levels of performance – In reviewing recent writing samples, Mr. Hadley and the seventh grade team consistently remark how Damien's writing lacks development and organization. When asked to write a paragraph response in class, Damien only writes one or two sentences. They have also observed that Damien lacks knowledge of effective writing strategies.

Step 2: Set an ambitious long-term goal – Reviewing Damien's IEP, the team notes that he currently has a writing goal that says that he will write an organized paragraph with two examples and one explain sentence for each example by the end of his IEP cycle on four out of five trials. The team decides that this is an appropriate goal to continue aiming for as his next IEP meeting is in 7 months.

Step 3: Implement high-quality instruction with fidelity – Damien currently has access to a graphic organizer for all writing assignments as per his IEP, but in discussion, the team realizes that they are not always consistent in providing this accommodation and when they do provide

him with a graphic organizer, they do not always provide him with the same graphic organizer. They decide that using the same graphic organizer will provide Damien with consistency. They also believe that such an accommodation is appropriate for helping Damien organize and develop his paragraph writing skills.

Step 4: Monitor progress toward the long-term goal – Mr. Hadley decides to be the central contact for monitoring Damien's progress, but together they will collect and reflect on data at their weekly team meetings. Damien can earn one point for each part of his graphic organizer (introductory sentence, example 1, explain 1, example 2, explain 2, conclusion) for a total of six points. Using what they know from the literature, they decide to re-evaluate Damien's progress after eight weeks.

Step 5: Use decision rules to determine instructional effectiveness and student progress – The team uses a decision rule that if the trend line is lower than the goal line they will change instruction. The team establishes that Damien's progress is lower than the goal line so they decide to make an instructional change.

Step 6: Generate hypotheses about student progress to individualize instruction – After reviewing Damien's data and the Decision Making Rubric, the team establishes a few possible hypotheses, but ultimately decides that Damien requires access to additional strong models when presented with a writing assignment. They decide to use this accommodation in addition to continuing to provide Damien with a graphic organizer.

Step 7: Make an instructional change based on the hypothesis made in Step 6 – All teachers now show a strong sample paragraph to Damien before writing assignments and provide him with the same graphic organizer from the first intervention. This is also reflected on Damien's graph and on the Decision Log.

Step 8: Repeat Steps 4-7 as necessary – After collecting data for several additional weeks, the team notes that Damien continues to make limited progress so they decide another change is necessary. Using the Decision Making Rubric and the Decision Log, the team decides to add self- monitoring which will be followed by an additional period of tracking Damien's progress.
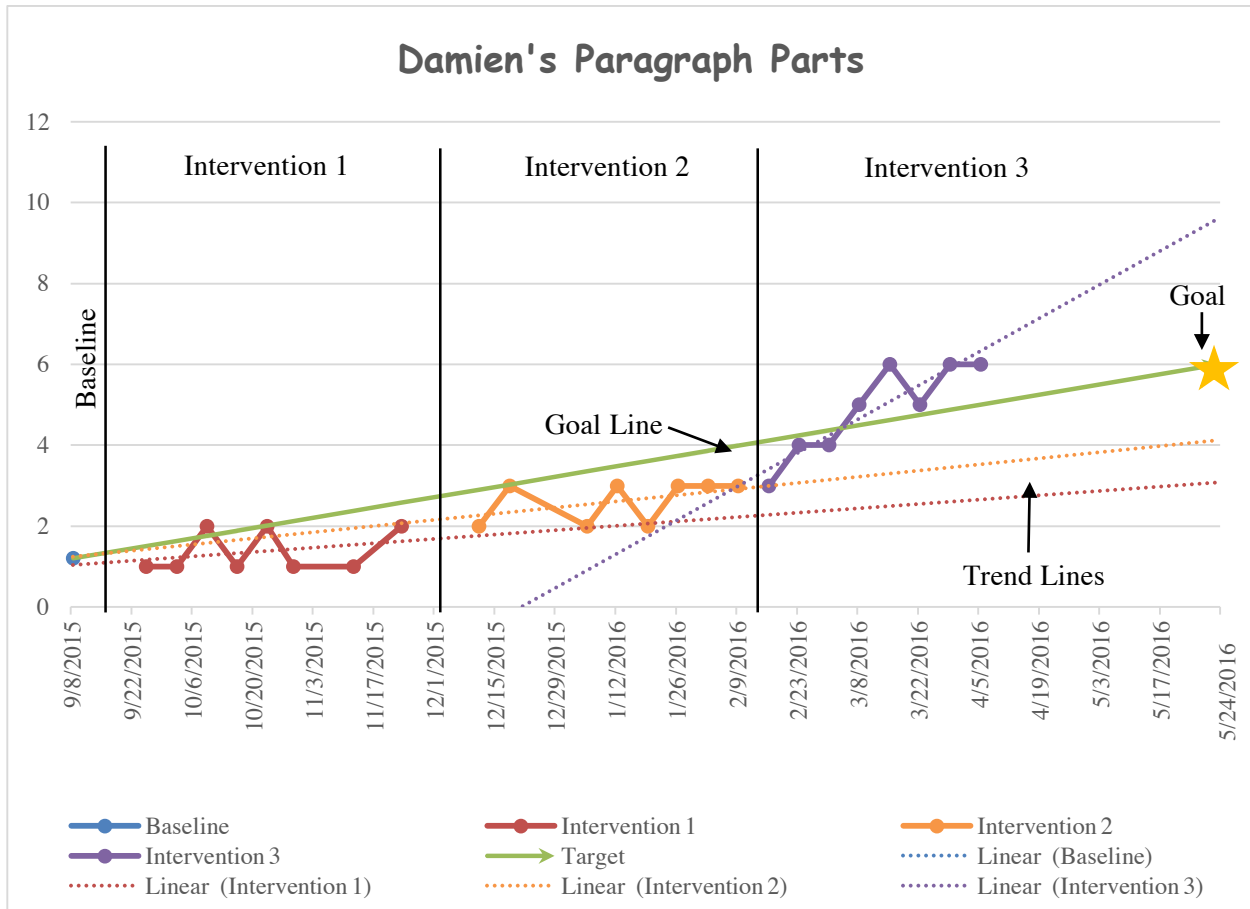
Figure 4. Damien's Progress Monitoring Graph.

Applied Example #2: Group of Struggling Learners NOT Identified with a Disability

Note . . .

I have a group of struggling learners. Can I apply the DBI process for the group?

Yes. The purpose of the DBI process is to individualize instruction for a student with intensive learning needs. However, after considering each individual learner's present or current levels of performance, you might decide that the same accommodation or instructional practice is applicable for a group of learners. To the extent possible based on the intensity of students' needs, consider delivering the accommodation or instruction to the group, but track each student based on his/her own individualized goal (e.g., each student's end goal might vary based on baseline performance, etc.). Moreover, ALL instructional/accommodation decisions *must* be made on an **individual** basis.

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Mrs. Shay teaches third grade. There are 22 students in her class. As the class has begun working on reading comprehension with fictional texts, she has found that Isabella, Micha, and Jayvon are needing additional support. These three students do not receive special education services, but past school records and conversations with their earlier teachers have confirmed the

deficits that she is seeing in class. Specifically, they are struggling with paraphrasing big ideas and the supporting ideas of texts (MO Learning Standard 2A(d) for Grade 3). Mrs. Shay has spoken briefly with the reading teacher in her school to think through some suggested effective practices that she might be able to use to support these three students. She decides that it will be important for her to set up a short reading plan to help her with her instruction so that she can both provide more targeted support to Isabella, Micha, and Jayvon, and track their performance.

Step 1: Establish present or current levels of performance – Standardized school-level exams have consistently demonstrated weaknesses in reading comprehension for these three students. Anecdotally, Mrs. Shay has noted that Isabella, Micha, and Jayvon do not regularly volunteer in class and struggle to complete work related to comprehension independently. Despite her attempts, they still struggle. She thinks that they would benefit from some additional direct instruction in a small group given the similarity of their needs.

Step 2: Set an ambitious long-term goal – Mrs. Shay knows that comprehension and paraphrasing main ideas of text is a state learning standard for students in Grade 3. When she has students write the main idea of a story in class, Isabella, Micha, and Jayvon typically write nothing or re-copy a sentence from the story. Mrs. Shay would like them to independently be able to complete this without prompting. She decides to monitor their progress using class exercises every other week. If her students can complete the task with 100% accuracy on four consecutive monitoring exercises, they will have met this goal that she has set for them.

- Isabella, Micha, and Jayvon will independently paraphrase the main idea of a fictional text by writing a main idea statement in response to class exercises on 4 out of 4 consecutive trials with 100% accuracy.

Step 3: Implement high-quality instruction with fidelity – Mrs. Shay already has a concise sentence strip that students use to paraphrase main ideas in their reading journals. Mrs. Shay decides that she will continue to use this support with some slight modifications. During reading time, she will pull the students to a table to provide addition direct instruction three days a week for about 15 minutes each (or about 45 minutes per week). Verbally she will ask them literal comprehension questions to help them identify the most important who/what is the story and two key words, which students will then use in combination with their sentence strip to write a main idea statement. Student's work areas in their journals will be revised to reflect this new set-up. Mrs. Shay will also use the I do – We do – You do teaching structure.

Step 4: Monitor progress toward the long-term goal – Mrs. Shay creates a simple bar graph for each student. They can earn up to four points – one point each for identifying the who/what, two key words, and writing a sentence.

Step 5: Use decision rules to determine instructional effectiveness and student progress – After about 8 weeks, Mrs. Shay notices that the students are making sufficient progress toward meeting their goals.

Step 6: Generate hypotheses about student progress to individualize instruction – Mrs. Shay

decides the students need a few more weeks to continue practicing their skills.

Step 7: Make an instructional change based on the hypothesis made in Step 6 – Mrs. Shay decides to continue the practice and review student data again in about 8 weeks. The students have also joined her in helping to track their own progress.

Step 8: Repeat Steps 4-7 as necessary – After these 8 additional weeks, all three students have met the goal. At this point, Mrs. Shay may choose a new goal to monitor the students on or to increase the goal for additional practice and weeks of monitoring to sustain the progress that Isabella, Micha, and Jayvon have made. If Mrs. Shay discontinues this goal and does not choose a replacement goal, she should periodically continue to monitor these three students (e.g., once a month rather than twice a month) to ensure continued fluency and maintenance. Alternatively, she could keep the goal but switch to using expository rather than fictional (e.g., narrative) text.
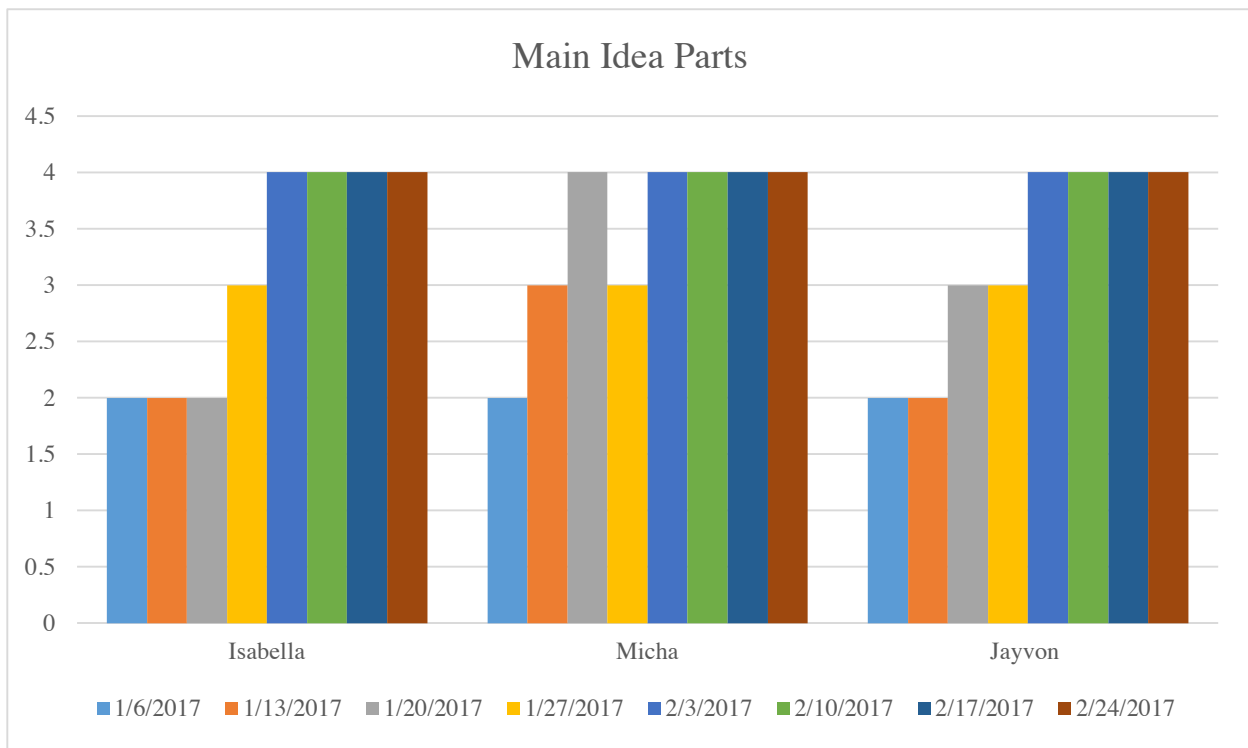
Figure 5. Third Grade Progress Monitoring Graphs.

Missouri Data Based Decision Making Model for Academics

1. **Identify a student who is struggling (or a group of students):**

   ▪ Name(s): _____

2. **Identify present or current levels of performance:**
   ▪ Place a check next to the box to indicate the area(s) in which the student/group is struggling.

Reading	Writing	Mathematics
EARLY READING	TRANSCRIPTION	Counting
Phonemic Awareness	Handwriting	Number Identification
Phonics/Alphabetic	Spelling	Quantity Discrimination
Principle	Mechanics	Computation Skills
Fluency		(math facts)
Vocabulary	TEXT GENERATION	Concepts (time,
Comprehension	Idea Generation	fractions, etc.)
	Development of Writing	Expressions and
ADOLESCENT READING	Organization of Writing	Equations
Advanced Word	Sentence Construction	Algebra
Study/Phonics	Passage Construction	Word Problems
Fluency	Revising	
Vocabulary	Editing	
Comprehension		
Motivation	OTHER (writing types)	
	Narrative	
OTHER	Expository	
Genre Knowledge	Argumentative/ Persuasive	

3. **Which of the above areas is <u>most</u> problematic for the student/group?** Also consider what the goal is for the student/group by the end of the academic term or school year.

   ▪ Target Area: _____

4. **Establish a Support Plan for the Target Area:**
   ▪ Does the student/group have an IEP? **[sub-step a]**
     > YES – *Follow with sub-step b*
     > NO – *Skip to step 5*

   ▪ Does the student/group have current accommodations specified on his/her/their IEP? **[sub-step b]**

YES – *Ask Yourself*: Are they being implemented with fidelity?
1. Yes, and student/group is still struggling
   a. *Identify a new accommodation (see the Accommodation Guide) to support the student/group and proceed to step 5.*
2. No
   a. *Review the accommodation(s) listed on the IEP and implement with fidelity; establish a plan for tracking progress (proceed to step 6).*

NO – *Identify a new accommodation (see the Accommodation Guide) to support the student/group and proceed to step 5.*

5. **Establish a Schedule for the Selected Accommodation(s)**
   - Identify the selected accommodation(s). It would be preferable to only change one accommodation at a time in order to determine which is most effective. Any testing accommodations should also be practiced during instruction. Schedule refers to the schedule for use of the selected accommodation (e.g., during reading class, when writing more than individual words, as requested by student, etc.). When and where possible, refer to guidelines from research regarding schedule.

Selected Accommodation	Schedule	Instruction or Testing
		Instruction Testing
		Instruction Testing
		Instruction Testing
		Instruction Testing

Step 2: Set an ambitious long-term goal.

6. **Establish a Plan for Tracking Progress**
   - Determine an implementation schedule – current practice would recommend a minimum of 6–8 weeks to evaluate effectiveness.
     _____ Weeks
     One Month
     One Marking Period
     Other: _____
   - Determine an assessment that can be used to help you evaluate student performance.

Curriculum-Based Measure
Class Assignment
Homework
Rating Scale or Scoring Rubric
Other: _____

- Determine an assessment schedule – how frequently will you collect assessment data to evaluate the effectiveness of the accommodation? Weekly evaluation is preferred.
    Daily
    Weekly
    Twice a Week
    Every Other Week
    Other: _____

- Establish student's baseline performance. If you are planning for a group of learners (rather than an individual learner), you MUST have *each* student complete the baseline assessment. Record the last three grades the student earned prior to the implementation of the accommodation from smallest to largest. Or, provide the student with three (3) different forms of the same task (that is, the assessment you identified above) within one week <u>before</u> you begin implementing the accommodation. Take the median score to establish baseline. Plot this median score on your student's graph

    _____   _____   _____

                                    ↑

- Establish a SMART long-term goal. Again, if you are planning for a group of learners (rather than an individual learner), you MUST write an individualized goal for *each* student based on his/her baseline performance. Each student will also have a separate chart/graph for tracking progress.
    SMART goals are **S**pecific, **M**easureable, **A**greed upon, **R**ealistic, and **T**ime bound

    Does the student already have a relevant IEP goal or classroom goal in the area that you're hoping to track?
    1. YES – *Keep the goal and Ask Yourself:* Is the goal SMART?
        a. Yes – *Keep the goal and proceed to the next DBI step.*
        b. No – *Revise the goal to make it SMART.*

    2. NO – *Write a SMART goal*

- Write a SMART goal
    Plot the student's **baseline** score on the graph on the first date of the instructional period in which you plan to monitor progress, and then insert

a phase line.

Determine the **end-date** of the instructional period in which you will monitor progress. The instructional period is often the end of the semester, school year, or IEP cycle.

Determine the level at which you expect the student to perform at the end of this instructional period. This level is the student's **long-term goal**.

1. Using CBMs to monitor progress? Identify the end-of-year benchmark for typically developing students at the grade level at which the student will be progress monitored.
2. Using an alternative assessment to monitor progress? You may need to use your best judgment. Or, if you're using a strategy like Mr. Hadley, choose the expected outcome (e.g., 6 paragraph parts).

Plot the **long-term goal** on the graph on the last date of the instructional period in which you plan to monitor progress.

Draw a goal line from **baseline** to **end-of-year benchmark**.

To determine the student's expected weekly rate of progress . . .

1. Subtract the baseline score from the long-term goal score. This is what the student needs to gain to meet the long-term goal.
2. Divide this number by the number of weeks remaining in the instructional period to get a desired growth rate.
3. The goal line is created by increasing each expected weekly score by the desired growth rate.

Fill in this template for a completed goal statement: <Time frame – e.g., by the end of the IEP cycle, etc.), <Student> will <directionality – e.g., increase, decrease, improve, etc.> his/her <academic behavior as measured by> from <start number> to <target number – i.e., the goal>.

EXAMPLES:

1. By the end of the IEP cycle, [Student] will improve [his/her] reading comprehension as demonstrated by correctly selecting [#] words in three minutes on a MAZE (multiple choice cloze) reading passage at the [progress monitoring grade level] – grade level.
2. By the end of the IEP cycle, [Student] will improve [his/her] writing performance from 5 CWS [correct word sequences] to 10 CWS on a 4th grade story prompt curriculum-based measure of writing.
3. By the end of the academic year, [Student] will write a paragraph containing all 6 paragraph parts on 4 out of 5 consecutive trials as measured by classroom writing assignments.

Step 3: Implement high-quality instruction with fidelity

- Now that you have determined the student's/group's present or current level of performance, identified a target area of focus, established a long-term goal with a plan for tracking progress, along with an appropriate accommodation, follow through on your plan! Implementing with fidelity is necessary for determining effectiveness of the instruction/accommodation. When instruction/accommodations is/are not implemented with fidelity, it is not possible to know whether a student's lack of response is because the instruction/accommodation is not appropriate to the student's needs or because the instruction/accommodation was not implemented appropriately (e.g., with fidelity).
- You might create a little plan within your lesson plans or your plan book to ensure that you are delivering the stated instruction/accommodation as scheduled.
- Moreover, you can create a self-checklist in order to track your own reliability.

Step 4: Monitor progress toward the long-term goal.

- Continue to monitor student performance by collecting data using the schedule you have been outlining. Immediately after administering and scoring each assessment, plot the student's score to create a graph of student performance (for example, using Excel or another building/district level program used for graphing student data). Be sure to insert a trend line.
- Typically approximately 8 data points are needed to establish a reliable trend line. The trend line reflects the student's actual rate of progress, which can easily be used to help determine whether the student is making the anticipated progress.
- Managing data can be tricky, especially when you're working with and monitoring the progress of many students. It is recommended that you spend a little bit of time upfront determining an effective and efficient data system that works for you and your class. Many teachers have found it beneficial to collect all monitoring probes in advance of beginning and keeping a folder or a binder for each student. Remember to keep materials in a place where they can be easily located and accessed. Scoring students' probes immediately following administration and entering student data onto the respective graphs will help ensure that data is not misplaced. Efficient use of data will also allow you to be more effective with monitoring student progress.

Step 5: Use decision rules

- To determine the effectiveness of accommodations, review students' graphed data. This will allow you to evaluate student progress and determine whether your instructional decisions were well matched to the needs of the student/group. But, how will you know what the graph is telling you? You'll have to evaluate three key components of students' performance that are already visible on each graph.

- First, examine the **level** of the data points in relation to the goal line. Are most points above the goal line, on the goal line, or below the goal line?

(a)   **(b)**
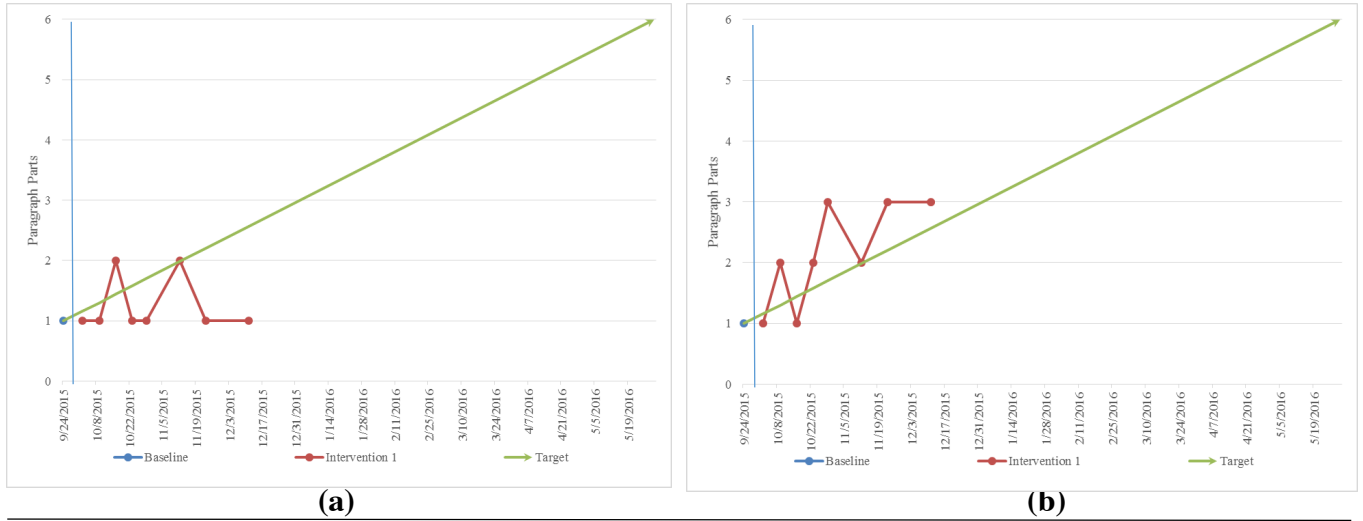
Figure 6. Level – most data points below goal line (a), and above goal line (b).

- Then, examine the **trend**. Does the student's rate of growth, as reflected by the trend line that you inserted in Step 4, appear to demonstrate that the student is making sufficient progress to meet the long-term goal? Is the trend line above the goal line? Below the goal line? Even with the goal line?

(a)   **(b)**
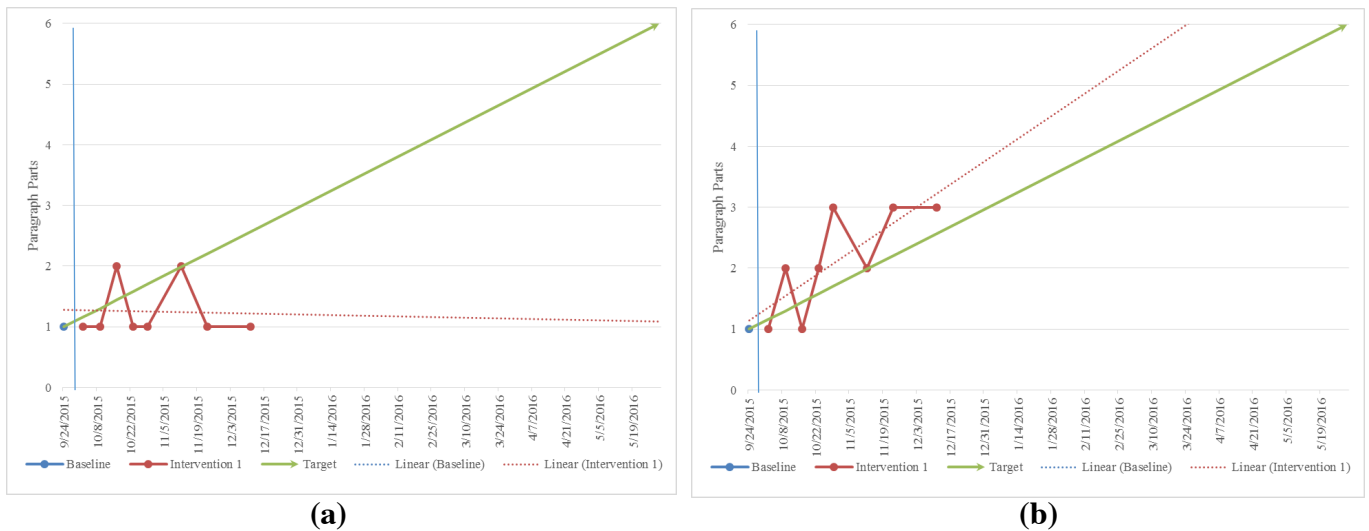
Figure 7. Trend – trend line below goal line (a), and above goal line (b).

- Finally, look for **variability**, or bounce, in students' scores. Are there any scores that seem to be much higher or lower when compared to the student's other scores? Even one extreme score can impact a student's performance. If you notice an extreme score, consider dropping the score or collecting more data in

order to establish a stable trend line.
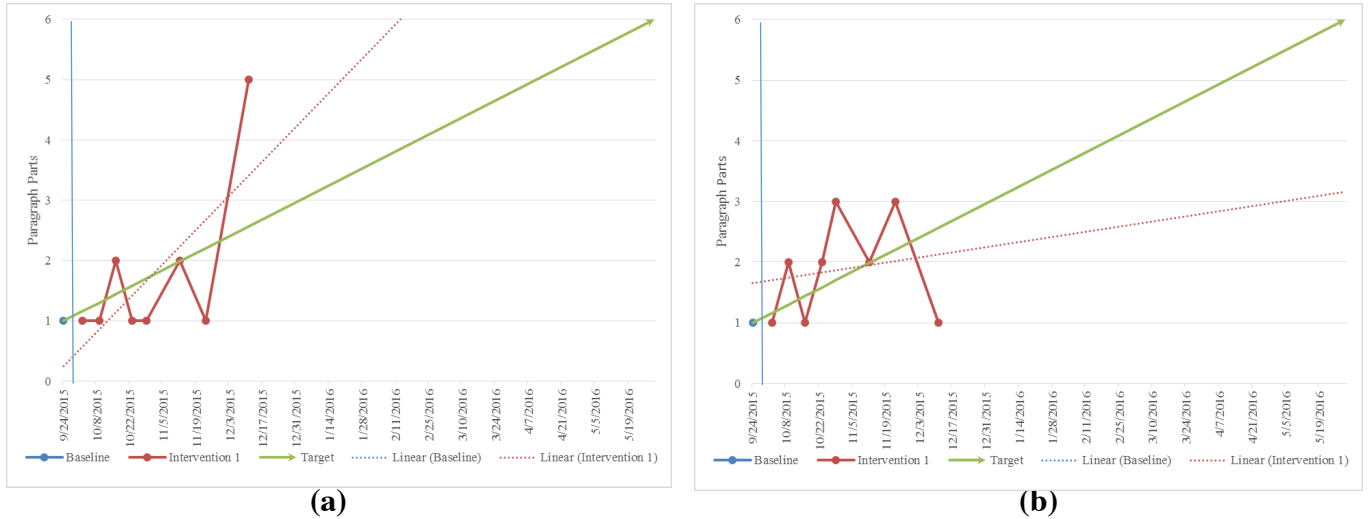
Figure 8. Variability – one extremely high data point in (a) increases the trend line, and another low data point in (b) decreases the trend line.

- Providing sufficient data has been collected and the data is relatively stable (e.g., meaning little to no variability), an instructional decision can be made. Examine the trend of the data to make one of three decisions: change instruction, keep as is, or increase the goal. Because students' goals should have been written at an appropriate instructional level, goals should not be decreased; instead, instruction should be changed.

- **Decision 1: Change instruction.** If the student's trend line is below the goal line (less steep), instruction should be changed because the indication is that the instructional program is not sufficiently meeting the student's needs (as in Figure 9).
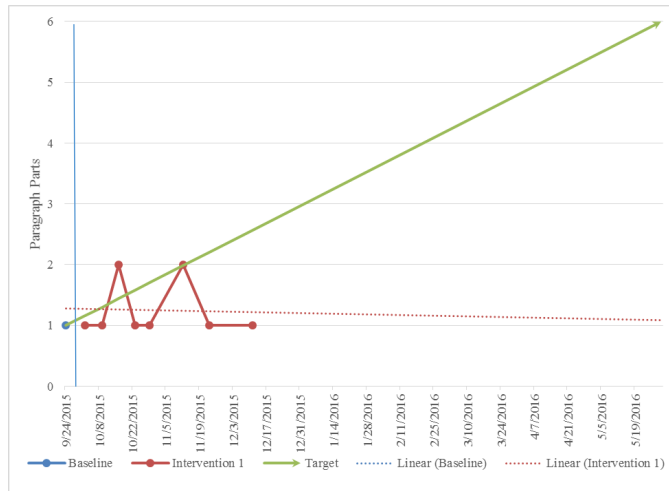
Figure 9. Trend line below the goal line.

- **Decision 2: Keep as is.** If the student's trend line is even with the goal line, instruction should be kept as is until greater information is available. At the moment, instruction is sufficiently meeting the student's needs, but an additional 4-8 data points will provide greater information (as in Figure 10).
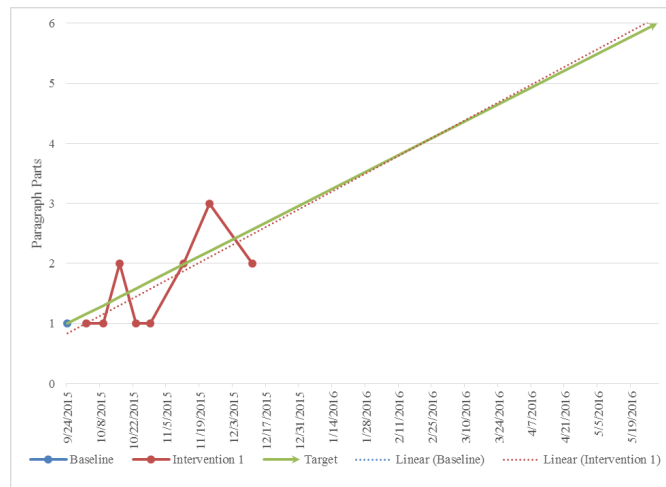
Figure 10. Trend line is even with the goal line.

- **Decision 3: Increase the goal.** If the student's trend line is above the goal line (steeper) as in Figure 9, the goal should be increased. A number of options are available for increasing the goal: (a) use the trend line as the new goal, (b) re-calculate a goal (GOAL = *median of last 3 data points + (desired growth rate* x *number of weeks))*, (c) monitor at a new benchmark level if currently measuring the student's progress at a lower grade level, or (d) if the current goal was the benchmark for the student's grade level then continue the current goal by

decreasing the intensity of instruction (e.g., increasing group size, reducing frequency/duration, etc.).
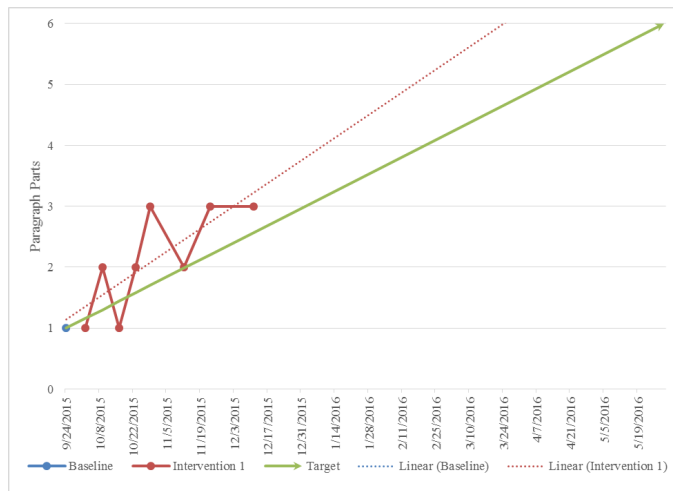
Figure 11. Trend line is above the goal line.

- When sufficient data has been collected and it appears that a change in instruction is necessary, a hypothesis must be generated surrounding *why* the student/group has not been making sufficient progress and *what* the student/group requires instructionally to be successful. However, if the accommodation/instruction has not been implemented with fidelity, it is difficult to know whether a student's/group's lack of response is because the instruction/accommodation is not appropriate to the student's/group's needs or because the instruction/accommodation was not implemented appropriately or as planned (e.g., with fidelity).
- Determine whether the accommodation/instruction was delivered with fidelity.

	Goal Not Met	**Goal Met**
Not Implemented with Fidelity	Are there obstacles to implementation? ☐ Yes: Modify plan to eliminate obstacles ☐ No: Implement the plan	Look at data to determine why goal was achieved
Implemented with Fidelity	Re-analyze data; develop an alternate hypothesis; modify the plan to address the alternative hypothesis	Plan for sustained implementation Go back to your data; Data cycle around your most frequent academic behavior

- Generate a hypothesis about *why* the student/group has not been making progress. Then determine *what* the student/group needs instructionally to be successful (refer to the column on the left in the table below). Match the student's/group's need with an instructional consideration (refer to the right column in the table below). The following list has been generated to provide possibilities regarding what a student/group may need, but is not intended to be a comprehensive list nor will these recommendations apply to all students/groups.

If the student/group needs . . .	Then consider . . .
More time	Increasing frequency and/or duration; re-teaching the skill, accommodation, etc.
More individualized support	Decreasing group size, providing peer support, creating opportunities for one-on-one support
More opportunities for practice	Increasing opportunities to respond, providing more frequent checks for understanding, creating additional independent opportunities for practice
More explicit instruction	Increasing modeling and guided practice with more specific feedback

Step 7: Make an instructional change

- Now that you have generated a hypothesis about *why* the student/group has not been making progress and *what* the student/group requires to be successful, implement the instructional change. However, before proceeding you need to make sure you have inserted a phase line on your graph to distinguish the changes that you have made to better meet the student's/group's needs. This change should also be recorded on the Change in Instruction Plan; this serves as a running record of the steps that you have been taking.

Step 8: Repeat steps 4-7 as necessary.

- DBI is a cyclical process. Although a few of your students will be successful with just one accommodation/instructional change, many students will require a number of changes in accommodations/instruction before they are successful. Be patient and continue to use your data to help you decide how to help your students meet with the greatest success.
- Continue to . . .
    o Monitor student progress (Step 4)
    o Use decision rules (Step 5)
    o Generate hypotheses (Step 6)
    o Make an instructional change (Step 7)

Other Considerations

When considering instructional supports for students, the use of effective instructional practices and curriculum design considerations are important, as are the use of evidence based practices. Sometimes, some of the same behavioral strategies may also be needed to meet students' instructional needs, and might be more of a teacher practice that can be easily adapted to meet class as well and individual student needs. Consider the following:

- *Opportunities to Respond* – Does the student have sufficient opportunities to actively respond to the academic materials? Consider how additional opportunities can be added to instruction.
- *Precorrection* – Is the student consistently making a certain error? Provide a precorrect to help target the student's response (e.g.., where to locate a reference material, a rule that needs to be followed – *i before e except after c*, etc.).
- *Positive Specific Feedback* – Does the student keep asking for confirmation of his/her responses, or does the student often wonder whether he/she is completing a task as expected? Provide a positive gesture or statement immediately after the expected academic behavior occurs so that the student knows that he/she responded correctly and should continue working independently.
- *Explicit Instruction* – Does the student require step-by-step directions/procedures? Make sure your instructional process is (a) step-by-step, that is, highly structured and task-analyzed; (b) is specific to the task expected of the student rather than general; and (c) that the student is being asked to follow the same steps the teacher just modeled. One way to model/scaffold more hidden/cognitive procedures is via a think-aloud.
- *Strategies* – Does the student struggle with steps or procedures for reading expository text, or writing a persuasive essay, for example? Teach students a variety of ways to address a problem; these are consistent across a number of settings.
- *Visual Representation* – Does the student require a visual organizer for reading/writing or visuals for solving mathematics problems? Teach students how to use and create graphic organizers or how to effectively use diagrams or other visuals when solving mathematical word problems.
- *Range and Sequence of Models/Examples* – Does the student often need to see multiple replications or examples before proceeding? Teach students to recognize patterns, provide additional modeling items that the student can access when working independently, or provide multiple models when explicitly providing instruction.
- *Clear Procedures, Instructions, and Instructional Routines* – Do students frequently ask questions about standard classroom practices? Teach students the various procedures, instructions, and/or instructional routines that they are expected to engage in daily or weekly. Teaching these expectations upfront can save instructional time later. They will also provide the structure that many students require for maintaining attention and engagement.
- *Activity Sequencing* – Do students struggle with the order of tasks? Be sure that the sequence in which students are expected to complete tasks is logical and that each task gradually builds upon a previous task.
- *Monitoring Task Difficulty* – Are students indicating that tasks/assignments are too difficult or too easy? Ensure that instructional materials are being provided at *just the right level*. This may require differentiating for some students in your class (e.g., asking

modified questions, providing visual and print directions, providing modified texts, etc.).

- *Identify and Prioritize Long- and Short-Term Learning Goals* – Are students learning the most essential curricula components? Prioritize what is most important for students to learn by providing meaningful access to appropriate curricula materials. Use grade level standards, IEP goals (as available), assessments, etc. for determining the most critical components to teach and set long- and short-term goals for ensuring delivery of the identified content.
- *Use Strategies to Promote Active Engagement* – Do students feel disconnected? Build positive student-student and student-teacher relationships and connect learning to students' lives. Embedding opportunities for student choice can also increase student motivation and engagement.
- *Use Flexible Grouping* – Are students always working in the same groups or do students always choose to work with the same partner? Use homogeneous and heterogeneous groups, ensure classroom activities are appropriately situated for groups, and provide positive and corrective feedback to groups to support productive learning.

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Positive Behavioral Interventions & Supports: OSEP Technical Assistance Center. Website accessible at https://www.pbis.org/school

RTI Action Network. (n.d.). "What is RTI?" Retrieved from http://www.rtinetwork.org/learn/what/whatisrti

Stecker, P. M., Fuchs, L.S., & Fuchs, D. (2005). Using curriculum-based measurement to improve student achievement: Review of research. *Psychology in the Schools*, *42(8)*, 795-819.

Additional Resources

Web Resources

PBIS Website (OSEP) - https://www.pbis.org/school
Missouri SW-PBS Website – http://pbismissouri.org/

AIR Center on RTI – http://www.rti4success.org/
RTI Action Network - http://www.rtinetwork.org/
National Center for Intensive Intervention – http://www.intensiveintervention.org/

DBI-TLC – http://dbitlc.missouri.edu/
RTI Guidance App – available for free download at https://itunes.apple.com/us/app/rti-guidance-app/id1008355900?mt=8

Florida Center for Reading Research – http://www.fcrr.org
        FCRR and RTI - http://www.fcrr.org/interventions/RTI.shtm

IRIS Center - http://iris.peabody.vanderbilt.edu/

Michigan Center for PBIS plus academics - https://miblsi.org/

CEC and the Ceedar Center's High Leverage Practices Guidance Document – Forthcoming

Print Resources

Foegen, A., Stecker, P. M., Genareo, V. R., Lyons, R., Olson, J. R., Simpson, A., ... & Jones, R. (2016). Using an Online Tool For Learning About and Implementing Algebra Progress Monitoring. *TEACHING Exceptional Children*, *49*(2), 106-114.

Lembke, E. S., Carlisle, A., & Poch, A. (2016). Using Curriculum–based measurement fluency data for initial screening decisions. In K. D. Cummings and Y. Petscher (Eds.). *The fluency construct: Curriculum-based measurement concepts and applications* (pp. 91–122). New York, NY: Springer.

Academic Planning Sheet

1. **Identify a student who is struggling:**

   a. Student Name: _____

2. **Identify present or current levels of performance:**
   a. Place a check next to the box to indicate the area(s) in which the student is struggling.

Reading	Writing	Mathematics
EARLY READING	TRANSCRIPTION	Counting
Phonemic Awareness	Handwriting	Number Identification
Phonics/Alphabetic	Spelling	Quantity Discrimination
Principle	Mechanics	Computation Skills
Fluency		(math facts)
Vocabulary	TEXT GENERATION	Concepts (time,
Comprehension	Idea Generation	fractions, etc.)
	Development of Writing	Expressions and
ADOLESCENT READING	Organization of Writing	Equations
Advanced Word	Sentence Construction	Algebra
Study/Phonics	Passage Construction	Word Problems
Fluency	Revising	
Vocabulary	Editing	

Comprehension
Motivation
 	
OTHER
   Genre Knowledge
	OTHER (writing types)
	   Narrative
	   Expository
	   Argumentative/ Persuasive	

3. **Which of the above areas is <u>most</u> problematic for the student?** Also consider what the goal is for the student by the end of the academic term or school year.

    a. Target Area: _____

4. **Selected accommodation/instructional practice to support the student.** Consult the student's IEP first. If other suggestions are needed, see the Accommodation and Assessment Guide.

    a. Accommodation/Practice: _____

5. **Schedule for Tracking Student Progress**

Implementation Schedule	Assessment	Assessment Schedule	Baseline Performance
_____ Weeks One Month One Marking Period Other: _____	CBM Class Assignment Homework Rating Scale or Scoring Rubric Other: _____	Daily Weekly Twice a Week Every Other Week Other: _____	Lowest _____ Median _____ _____ Highest

6. **SMART Goal**

<Time frame – e.g., by the end of the IEP cycle, etc.), <Student> will <directionality – e.g., increase, decrease, improve, etc.> his/her <academic behavior as measured by> from <start number> to <target number – i.e., the goal>.

7. **Implement as per the schedule above, monitor student response, and use decision rules to continue the process. Document any changes on the Change in Instruction Plan.**

Change in Instruction Plan (use in conjunction with student's graph)

Academic/Instructional Area: _____

Student: _____   Teacher: _____   Grade: _____

SMART Goal:

Date	Reason for Change	Instructional Procedures	Arrangement		Time		Materials	New Goal
	Current instruction & data to support change	*Type of change to be made (hypothesis)*	*Who*	*Ratio*	*Freq.*	*Duration*	*Description of what's needed*	*Set new goal (as needed) and indicate review date*

(Adapted from McMaster & Lembke, 2015)

Accommodation and Assessment Guide

READING		
Academic Difficulty	*Suggested Accommodation*	*Suggested Assessment*
Elem. Phonemic Awareness	- Read materials aloud - Repeat directions - Provide multiple examples	Phoneme Segmentation CBM
Elem. Phonics/Alphabetic Principle	- Alphabet strip on desk - Read materials aloud - Books on tape - Provide multiple examples	- Letter Sound Naming CBM - Nonsense Word Fluency CBM
Elem. Fluency	- Read materials aloud - Extended time	Oral Reading Fluency CBM
Elem. Vocabulary	- Provide a word bank - Access to a dictionary	Vocabulary Matching CBM
Elem. Comprehension	- Break down directions - Repeat directions - Alternative response format	Maze CBM
Sec. Advanced Word Study/ Phonics	- Read materials aloud - Books on tape - Define unknown words	Word Identification CBM
Sec. Fluency	- Read materials aloud - Extended time	Oral Reading Fluency CBM
Sec. Vocabulary	- Provide a word bank - Access to a dictionary	Vocabulary Matching CBM
Sec. Comprehension	- Break down directions - Repeat directions - Alternative response format	Maze CBM
Sec. Motivation	- Student choice (e.g., what to read, how to respond) - Access to technology - Provide access to high interest texts - Provide peer buddy	Self-Regulation Checklist
Genre Knowledge	- Teach patterns - Strategy instruction	- Worksheet - Homework
WRITING		
Academic Difficulty	*Suggested Accommodation*	*Suggested Assessment*
Handwriting	- Provide pen/pencil grip - Access to word processor - Paper with dotted middle line	- Individual letter writing - Worksheet - Copy best or copy fast tasks (e.g., The quick

	- Graph paper - Audio record responses - Speech-to-Text software - Extended time - Scribe - Slant board - Seat positioning - Taped markings on desk	brown fox . . .) - Teacher observation - Evaluation checklist
Spelling	- Access to spelling/grammar check device (e.g., spell checker) - Teacher or peer proofreading - Access to word processor - Allow for resubmission after feedback - Exempt from penalizing except where spelling is being assessed - Word bank	- Word dictation CBM – words spelled correctly and/or correct letter sequences - Spelling test - Written response – number of words spelled correctly - Error analysis
Mechanics	- Access to spelling/grammar check device (e.g., spell checker) - Teacher or peer proofreading - Access to word processor - Allow for resubmission after feedback - Self-check checklist - Strategy instruction (e.g., COPS)	- Picture word or story prompt CBM – words spelled correctly and/or correct word sequences - Spelling test - Written response – number of words spelled correctly, number of errors, - Error analysis - Completion of a self-check form
Idea Generation	Access to graphic organizer	- Identify number of written ideas in a written response - Ask student to brainstorm a list on a particular topic appropriate to student's academic level
Development of Writing	Access to graphic organizer	Words written
Organization of Writing	- Graphic organizer - Outline - Chunk large assignments	Rubric

	▪ into smaller tasks ▪ Provide model	
Sentence Construction	▪ Graphic organizer	▪ Number of sentences written ▪ Number of complete sentences ▪ Number of appropriately combined sentences
Passage Construction	▪ Model ▪ Graphic organizer ▪ Outline ▪ Checklist	▪ Rubric ▪ Number of Parts
Revising	▪ Checklist ▪ Mnemonic instruction/ organizer ▪ Teacher or peer proofreading ▪ Strategy instruction (e.g., SCAN, CDO, REVISE)	▪ Rubric ▪ Number of Parts
Editing	▪ Checklist ▪ Mnemonic instruction/ organizer ▪ Teacher or peer proofreading	▪ Rubric
Narrative Writing	▪ Strategy instruction (e.g., POW+WWW	▪ Number of parts ▪ Story prompt CBM ▪ Rubric
Expository Writing	▪ Strategy instruction (e.g., POW+TREE, PLANS)	▪ Number of parts ▪ Rubric
Argumentative Writing	▪ Strategy instruction (e.g., POW+TREE, STOP, DARE)	▪ Number of parts ▪ Rubric
MATHEMATICS		
Academic Difficulty	*Suggested Accommodation*	*Suggested Assessment*
Counting	▪ Access to manipulatives ▪ Access to number line	▪ Oral counting CBM ▪ Missing number CBM
Number Identification	▪ Extended time ▪ Access to number line	▪ Number identification CBM
Quantity Discrimination	▪ Extended time ▪ Access to number line	▪ Quantity discrimination CBM
Computation Skills (math facts)	▪ Access to a calculator ▪ Access to fact table ▪ Extended time	▪ Computation CBM
Concepts (time, fractions, etc.)	▪ Access to manipulatives ▪ Extended time	▪ Concepts and application CBM
Expressions and Equations	▪ Graphic organizer	▪ Concepts and

	▪ Graph paper ▪ Provide math expressions and formula	applications CBM
Algebra	▪ Extended time ▪ Graphic organizer ▪ Graph paper ▪ Access to a calculator ▪ Directions explained and broken down ▪ Directions repeated	▪ Algebra Basic skills CBM ▪ Algebra foundations CBM ▪ Algebra content analysis CBM ▪ Algebra translations CBM
Word Problems	▪ Graphic organizer ▪ Graph paper ▪ Minimize distracting information ▪ Word problems read aloud ▪ Extended time ▪ Strategy instruction	▪ Worksheet ▪ Homework

Where Can I Find Information About CBMs?
Note: There may be associated costs with some of these materials.

DIBELS (Early Reading) – https://dibels.uoregon.edu/
IDEL (Spanish DIBELS) – https://dibels.uoregon.edu/assessment/idel
AIMSweb – http://www.aimsweb.com/
Easy CBM – https://easycbm.com/
Algebra – http://www.education.iastate.edu/pdapm/index.html
Writing – http://dbitlc.missouri.edu/

To generate your own progress monitoring measures:
Intervention Central – http://www.interventioncentral.org/

For information regarding the technical adequacy of many CBMs see the Progress Monitoring and Screening Tools Charts assembled by the National Center on Intensive Intervention (http://www.intensiveintervention.org/chart/progress-monitoring) and the National Center on RTI (http://www.rti4success.org/resources/tools-charts/screening-tools-chart).

For a table detailing a summary of common CBMs, see Lembke, Carlisle, & Poch (2016).