Assessment in a Multi-Tiered System of Support: Overview
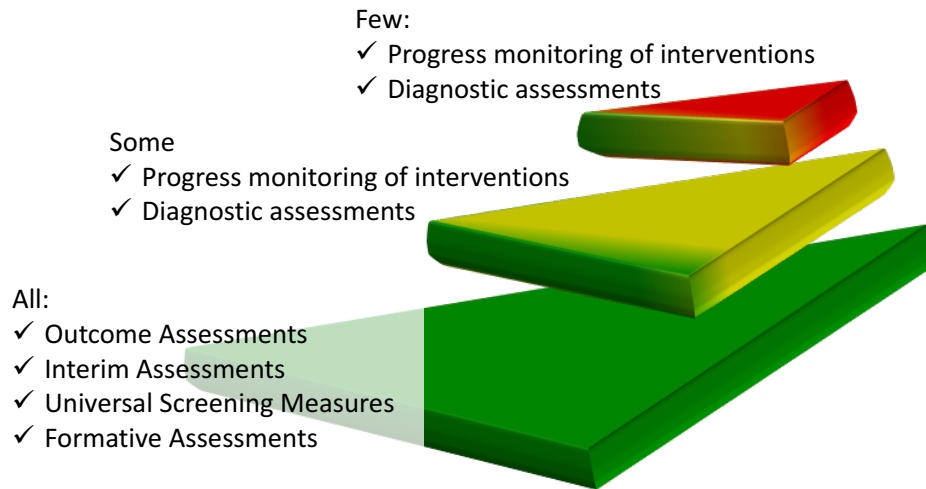
North Carolina's MTSS model includes a comprehensive and efficient assessment system that is balanced, uses multiple sources and is culturally appropriate. At full implementation, this system should measure critical areas within Literacy (Reading and Writing), Math and Behavior/Social-Emotional functioning in a manner that eliminates redundancy and achieves a degree of uniformity across a school district. The data gathered within this assessment system is designed to allow effective problem solving at all Tiers and also across all student groups (i.e., subgroups) in order to design responsive instruction for all students. Generally, in an MTSS, the assessment system serves the following purposes:

- Inform instruction
- Identify students who are at-risk
- Determine why students are at-risk
- Monitor student growth/progress
- Determine if we met outcomes

The following table is meant to serve as a preliminary guide for teams regarding types and purposes of assessment. Although assessment types and purposes can be categorized in a number of ways, the NC DPI MTSS team chooses to use the following nomenclature to ensure common language with regards to a comprehensive assessment system. When examining this table, please pay close attention to the <u>purpose</u> column. Assessments are designed for specific purposes and some assessments may serve more than one purpose. Therefore, each type of assessment represented may not be necessary. Teams should strive for a balance between gathering ample data to answer important questions but also avoiding its interference with instruction. An important function of a team analyzing assessment for a district and/or school should be to eliminate unnecessary assessments. In addition to measures of student achievement and outcomes, a comprehensive assessment system will include implementation measures, including measures of staff behavior and implementation.

Type	Primary Purpose	Characteristics
Outcome Assessments	To determine if we met outcomes	- After Instruction - Measures students against standards/expectations - One time per year/course
Interim Assessments	To predict performance on outcome assessments	- Administered throughout the year after sections of instruction - Administered 3-4 times per year/course
Universal Screening Assessments	To identify students at risk and evaluate program effectiveness and growth throughout a school year	- All students 2-3 x per year - Critical academic skills typically measured by curriculum-based measures or Computer Adaptive Testing (CAT) - Standardized administration - Quick administration - Predictive of larger outcomes - Valid and Reliable
Diagnostic Assessments/ Processes	Used to determine why students are at-risk	- Used for individual or small groups of students for problem analysis (*why is the problem occurring*) - Used to plan effective instruction/interventions that target specific skills
Continuum of Formative Assessments	To inform instruction and determine effectiveness of instruction	- Short cycle - Used for planning daily instruction - Useful in PLC planning - Useful in monitoring core instruction

Assessment by Tier

Few:
✓ Progress monitoring of interventions
✓ Diagnostic assessments

Some
✓ Progress monitoring of interventions
✓ Diagnostic assessments

All:
✓ Outcome Assessments
✓ Interim Assessments
✓ Universal Screening Measures
✓ Formative Assessments

The graphic above depicts a comprehensive assessment system by tiers within a healthy MTSS. As noted here, teams will use data from Outcome Assessments, Interim Assessments, Universal Screening and Progress-Monitoring of Core Instruction to make decisions about how all students are performing. From this data, teams will decide if changes need to occur in Core support for all students. They will also use this data to determine which students will need more than Core support. Those students requiring supplemental or intensive instruction/intervention may also require additional assessment or review of data in order to answer the question of "why" is this gap occurring through Diagnostic Assessments/Processes. Students that are receiving supplemental or intensive instruction/intervention (Tier Two or Tier Three) will need more frequent monitoring in order to monitor their response over time (Progress-Monitoring of Interventions).

Assessment in a Multi-Tiered System of Support: Core support

Universal screening system

In an MTSS, developing a data-evaluation system including a universal screening system is crucial to determine the effectiveness and health of core instruction. Developing a universal screening system requires synthesizing multiple sources of data. Typically a universal screening system includes outcome assessments, interim assessments, traditional universal screening measures, attendance data, and behavior/social emotional data.

A universal screening system is defined as administering measures and/or collecting existing data to allow broad generalizations to be made regarding the future performance and outcomes of all students at individual and group level (e.g., classroom, grade, school, district). As a screening practice, it is meant to give district and school teams a broad view of the overall health of instruction for all students. A universal screening system includes administering or gathering information on academic skills, behavior, and school attendance at all levels and is generally conducted three times a year (fall, winter and spring).

Districts and schools will consider the needs of the student population alongside the efficacy of direct academic skill screening of all students when developing their universal screening system. Current research indicates that historical data along with other risk factors associated with drop-out be analyzed for all students on an ongoing basis should be included in a universal screening system in middle and high schools. Once students are identified as "at-risk", then teams may wish to use additional assessments/processes to quickly match students to intervention.

A comprehensive universal screening system may include the following areas and measures:

Level	Literacy	Math	Behavior/Engagement
K-1 (all students)	▪ Discrete early literacy skills (including phonemic awareness, basic phonics, letter knowledge, reading connected text in first grade) ▪ Concepts about print ▪ High frequency words	▪ Early numeracy skills (including rote counting, number identification, quantity discrimination, strategic counting)	▪ Attendance ▪ Tardy/Early Dismissal ▪ Office Referrals ▪ Suspensions
2-3 (all students)	▪ Advanced phonics ▪ Accuracy and fluency with connected text ▪ Written Expression ▪ Spelling	▪ Mixed computation ▪ Concepts & Application	▪ Attendance ▪ Tardy/Early Dismissal ▪ Office Referrals ▪ Suspensions
4-5	▪ Accuracy and fluency with connected text ▪ Written Expression ▪ Spelling	▪ Mixed computation ▪ Concepts & Application	▪ Attendance ▪ Tardy/Early Dismissal ▪ Office Referrals ▪ Suspensions

6-8	▪ Historical reading data (including passing grade in ELA) ▪ Accuracy and fluency with connected text ▪ Written Expression ▪ Spelling	▪ Historical math data (including passing grade in math courses) ▪ Computation ▪ Concepts & Application	▪ Attendance ▪ Tardy/Early Dismissal ▪ Office Referrals ▪ Suspensions ▪ Overage for grade by more than 21 months ▪ GPA of less than 2.0
9-12	▪ Historical reading data (including passing grade in English I) ▪ Accuracy and fluency with connected text ▪ Written Expression ▪ Spelling	▪ Historical math data (including passing grade in Math I) ▪ Computation ▪ Concepts & Application	▪ Attendance ▪ Tardy/Early Dismissal ▪ Office Referrals ▪ Suspensions ▪ Overage for grade by more than 21 months ▪ Course failures ▪ On time promotion to 10th grade ▪ GPA of less than 2.0

Types of assessments often included in a universal screening system:

Outcome Assessments

Outcome assessments reflect the end result of curriculum design (materials and mapping), instructional practices and/or program implementation over the course of a school year or course. Although these assessments are designed to yield results that can be useful for planning for the next year or course, they are not designed to provide in-depth information regarding student performance. In other words, although they may tell teams there is a problem, they will provide little information regarding why there is a problem. They can evaluate student performance after instruction is complete. Outcome assessments are designed (within an MTSS) to answer the following questions:

Are students meeting standards?
Are instructional programs effective?
Have we met our goals for a student, class, grade, school or district?
What should we change?
What things should we continue?

Outcome Assessment Examples *(not exhaustive)*		
Academic	**Behavior/Social Emotional**	**Other**
End of Grade Testing (3-8) End of Course testing NC Final Exams District/School Final Exams	Office Discipline Referral (end of year/course) Suspensions Expulsions	Attendance data (end of year/course) Course Failures Tardy/Early Release data

Interim Assessments

Interim (benchmark) assessments give educators and teams tools to gauge student performance towards the larger standard. According to NC Department of Public Instruction, interim assessments "are given at regular and specified intervals throughout the school year, are designed to evaluate students' knowledge and skills relative to a specific set of academic standards, and produce results that can be aggregated (e.g., by course, grade level, school, or LEA) in order to inform teachers and administrators at the student, classroom, school, and

LEA levels." (NC DPI- Homebase- http://www.dpi.state.nc.us/homebase/faq/iis/). Within a healthy MTSS, teams should use interim assessment data to evaluate overall health of instruction across all students and also to assist in determining next steps. These tools' power is amplified when teams of educators come together to problem-solve the data gained from interim assessments in order to plan future instruction.

Universal Screening Measures

Several measures create a universal screening system, including universal screening assessments. These are most often conducted using Curriculum-Based Measures or Computer Adaptive Testing. Although the measures and skills assessed will change between grade levels and across content areas, the design features will remain the same:

1. Administered to all students
2. Identify students who are at risk of future academic, behavioral or emotional difficulties and may be considered for more intensive services
3. Provide data regarding how well current instruction is meeting the needs of students
4. Provide information to educators about individual student and system needs

For the purposes of screening, measures should also have a certain level of technical adequacy. For screening academic skills, the measures should have adequate reliability (0.80 or higher) and concurrent or predictive validity (0.60 or above). In addition, they should have adequate sensitivity or classification accuracy. This means that students who are having academic difficulties will be identified by the screener while students who are not having difficulty will not be identified by the screener. Although false positives (identifying students as having difficulty that are truly not having difficulty) are troublesome, the nature of a screener is such that this will inevitably occur. For this reason, best practice is to always look at multiple sources of data to confirm identification of students as requiring additional instruction or intervention. Finally, universal screening measures for academic skills provide the most robust interpretation when they have large scale norm groups (local, state, and/or national) and/or research-based criterion for success. This allows teams to interpret student scores against a sound comparison group.

For screening of behavior/social-emotional skills, the same levels of technical adequacy may not be achieved. Student discipline data is a good first step in a universal screening for behavior/social-emotional skills. However, this examination of data alone will not reliably identify students requiring interventions for behavior. It will most likely identify mostly outward behavior problems. Teams may also wish to look at students' compliance with behavioral expectations over time through the Behavioral Assessment Tracking Guide (BATG) provided through the NC Department of Public Instruction.

Research is currently emerging regarding universal screening of social-emotional learning competencies. It is currently recommended that schools and districts examine the intentional instruction of key social-emotional learning competencies. As measures of these skills become refined, this document will be updated with recommendations for universal screening in this area.

Monitoring Core Support

Tier One in a Multi-Tiered System of Support (MTSS) is high quality, core instruction for all students. The overarching goal of Tier One is that the majority of students (at least 80%) are successful with Tier One instruction alone. In other words, students meet targets and are growing towards proficiency on end of year standards with only high quality core instruction and do not require intervention. If a district, school, grade level or class is not demonstrating an effective Tier One, then teams would use data to conduct systematic problem-solving in order to increase the effectiveness of Tier One for all students. When changes are put in place within Tier One, districts and schools must measure to insure that any instructional changes put in place are working.

Progress monitoring core instruction has benefits at the district, school, grade, and teacher levels. Setting goals and determining growth at the district and school level assists with program selection, program implementation, and resource allocation. Progress monitoring core instruction at the grade and teacher level can help teachers know if students have learned the concepts taught and helps adjust daily instruction.

Monitoring Core Support	
Tied to content standards or building expectations	• To help teachers know if students have learned concepts taught • To adjust instruction, reteach concepts or provide additional practice
Academic Examples: Common Formative Assessments; Informal Formative Assessments; Classroom tests; monthly universal CBM's	Behavior Examples: ODR's per month; suspensions (OSS/ISS); attendance rates;

Assessment in a Multi-Tiered System of Support: Supplemental and Intensive Support

When we have determined students may be at risk based on universal screening and put appropriate core changes in place, the next step is to confirm risk and match students to intervention. Although intervention matching should be quick in a standard treatment protocol, there may be a need for further diagnostic processes to confirm appropriate match to pre-designed interventions. Once students begin receiving interventions, their progress should be monitored to ensure intervention effectiveness. If it is determined that students are not responding to a supplemental intervention, than the student's support may need more customization. When refining interventions at this point, diagnostic processes are an integral component. The following section will describe the diagnostic and progress monitoring components within a comprehensive balanced assessment system.

Diagnostic Processes

In education, diagnostic processes are used to determine the instructional focus of and to assist in developing hypotheses about why a problem is occurring. They allow interventions to be focused on a specific target skill or skills that will increase overall academic or behavioral competency. In short, diagnostic processes allow educators to teach precisely in order to achieve the greatest student learning gains.

The term diagnostic process is used intentionally within this document in order to convey the fact that these are not always one specific test. In order to design an appropriate intervention for a student or group of students, many different assessments or sources of data may be examined within a diagnostic process. This may include a direct skill assessment, examination of previous testing results, interviews, or an analysis of student work. It is also important to note that diagnostic processes are not confined to use with only students that are struggling to meet standards. They may also be appropriate for use with advanced learners in order to plan instruction that will maximize their growth.

The table below illustrates possible areas to examine for select academic and behavioral areas of concern. Many times, this information is already available at the younger grade levels due to the discrete nature of many screening assessments. At the upper grade levels, when a student is struggling with grade level content, schools may wish to examine the areas below through administration of additional assessments that are typically used for students at lower grade levels. However information is gathered for a diagnostic process, the team should keep in mind that multiple pieces of data should be used to accurately identify why a problem is occurring. Diagnostic can include formal or informal assessments.

Reading	Writing	Mathematics	Behavior/Social Emotional Skills
▪ Phonemic Awareness ▪ Alphabetic Principle ▪ Basic & Advanced Phonics ▪ Fluency ▪ Vocabulary ▪ Comprehension	▪ Organization ▪ Cohesion ▪ Mechanics ▪ Conventions	▪ Number Knowledge ▪ Base Ten ▪ Number line visualization ▪ Quantity and Magnitude ▪ Numeration ▪ Form of a number ▪ Equality ▪ Proportional Reasoning ▪ Algebraic Reasoning ▪ Geometry	▪ Turn taking ▪ Empathy ▪ Managing emotions ▪ Self monitoring ▪ Work completion ▪ On-task behavior ▪ Following directions

Progress-Monitoring of Interventions

(These guidelines around progress-monitoring practices are based on a thorough review of the research. They are outlined here as best practice. If these are a departure from your current practice, please take time to learn about these before changing the practices educators are using in your site(s). They are meant to be used in a well-functioning and established MTSS framework.)

In education, we measure all students' progress frequently in order to insure that they are on track for success. Students receiving supplemental or intensive instruction should be progress-monitored more frequently in order to insure that the interventions implemented are moving a student toward a pre-determined goal. Additionally, monitoring progress allows districts and schools to ensure the effectiveness of specific intervention programs or intervention protocol. Some key reasons for progress-monitoring of interventions are the following:
- ✓ To ensure effectiveness of interventions
- ✓ Measure student growth over time
- ✓ Inform instructional decisions
- ✓ Measure a student and/or a group response to intervention and instruction

To progress-monitor a student or students receiving supplemental or intensive intervention multiple measures are recommended. Measures used in progress-monitoring of students receiving interventions can include Curriculum-Based Measures (CBM) which includes general outcome measures, Computer Adaptive Testing (CAT), intervention-embedded assessments, and informal assessments/anecdotal data. All of these together provide a complete picture of a student or group of student's progress with intervention and instruction.

Use of Curriculum-Based Measures in Progress-Monitoring

For most academic areas, Curriculum-Based Measures (CBM) provide the most technically sound and efficient method to progress-monitor a student or group of students receiving an intervention. Curriculum-Based Measures are tools for measuring student competency and progress in the basic skill areas of reading, spelling, mathematics, and written language (RtI Action Network). These measures are "curriculum independent" in that they are general measures of skill acquisition that are not reliant on one particular curriculum or instructional practice. They measure skills that once attained, predict performance on larger standards. Characteristics of CBM identified in the literature that differentiate this type of assessment from others typically used in education include:
- ✓ Brief
- ✓ Repeatable
- ✓ Sensitive to improvement over time
- ✓ Have alternate equivalent forms
- ✓ Reliable
- ✓ Valid
- ✓ Measure accuracy and fluency with skills

They also differ from other classroom assessments teachers may utilize in that they sample a broad range of skills based on the annual curriculum. This sampling of broad skills allows CBM to use repeated measures of alternate forms with equivalent difficulty. This allows measurement of the same construct over time. This is in stark contrast to a traditional classroom test that measures a unit of instruction and then the next test measures the next unit of instruction. Classroom tests of this nature will not give the information about growth on a specific skill since each one is measuring something different.

It is also important to note that CBM typically measure both *accuracy* and *fluency* with basic skills. Therefore, they are administered under timed conditions in order to assess both the student's accurate application of the skill and their level of automaticity in the use of that skill. Common CBM for each academic skill area and the

most common grade level with which they are used are summarized in the table below. Please note that the grade level guidance is only the most common levels for which these measures are used. There are many times when students should be progress-monitored on "off grade level skills" and this process will be summarized in the pages that follow.

Grade Level	Reading	Mathematics	Writing
Kindergarten and First Grades	▪ Measures of early literacy	▪ Measures of early numeracy	
Second – Eighth Grades*	▪ Oral Reading Fluency ▪ MAZE/DAZE- Test of silent reading	▪ Math Concepts and Applications ▪ Math Computation	▪ Correct Writing Sequences ▪ Spelling

* Although each of these measures are typically designed for students up through eight grade, for individual skill progress-monitoring, they may be administered through twelfth grade for students with basic skill deficits.

Use of Computer Adaptive Testing in Progress-Monitoring

Computer adaptive tests (CAT) have a growing body of evidence to support technical adequacy for screening and progress monitoring purposes. These tests are completed individually by students and the test continually refines the items administered on the basis of the student's response. For use in progress-monitoring of interventions, districts or schools using CAT should still ensure that the essential purposes discussed above are met (brief, repeatable, sensitive, reliable, valid and using equivalent forms). In addition, due to the nature of administration of these measures (individually on the computer), teams should also insure that students' performance during assessment is indicative of students' true skill levels and not due to difficulties with the platform. Teams should use caution in using CAT with younger students since teacher-student interaction is a very important component of assessment with students at the early grades.

Use of intervention embedded assessments and mastery measures in progress-monitoring

Many intervention programs will include a progress-monitoring component. These can yield important information regarding student skill development over time. This is especially important for students that are working at a level that is far below a grade level standard. Whereas CBM described above are "curriculum independent", these measures are typically aligned very closely with their corresponding intervention program. Because of this, they can show incremental growth more quickly at times. Some students that are performing very far below expected levels may be progress-monitored the most frequently with these types of measures but should also receive periodic progress-monitoring using a general outcome measure (CBM) in order to insure that skills are transferring to content that is closer to grade level expectations.

Mastery measures can also be another way to measure intervention progress over time. These may be associated with a particular curriculum or be independent of this. Mastery measures are designed to measure mastery of a series of short-term instructional objectives. For this reason, they do show student progress over time but do not lend themselves to the same type of trend analysis as a traditional CBM due to the changing of the skills being measured with each administration.

Use of informal assessments and anecdotal data to monitor progress

In order to gain a complete picture of a student or group of students' progress with instruction and intervention over time, teams cannot discount the use of informal assessments and anecdotal data. Although these are typically less valid and reliable than the more formal measures we have described thus far, too often we exclude these in our decision-making to the detriment of our students. Classroom tests, informal formative assessment, observations and impressions should all be used to gain the most complete picture of students' progress.

Progress-Monitoring of Behavioral and Social-Emotional Skills

For students receiving interventions for behavioral and/or social-emotional skills, progress on acquiring the skills taught should be monitored in a systematic way. The measures utilized depend on the focus of the intervention. Some examples of ways to progress-monitor behavioral and social-emotional skills include daily behavior report cards (http://www.interventioncentral.org/teacher-resources/behavior-rating-scales-report-card-maker), structured observations, rating scales and office discipline referral data. As with progress-monitoring academic skills, monitoring of behavioral and social-emotional skills should utilize repeated measures of performance over time represented graphically.

Best Practices in Progress-Monitoring of Academic Interventions

Research has guided the development of the following procedural guidelines for monitoring the progress of students receiving intervention. First some general points about progress-monitoring will be presented. Then the process for monitoring students who are close to grade level and far below grade level will be presented. This includes setting goals, determining level of materials to use, and making decisions about progress and response.

Students that receive intervention should have their progress represented by a graph that reflects their baseline (start), their goal, their discrete performance over time, their trend (trendline) over time and the growth they are expected to make in order to meet their goal. In addition, if the student is in an intervention group, individual performance should be compared in some way with the other students within that group. This is to ensure the efficacy of the intervention as a whole. In order to say that the intervention was effective, the majority of the students in a group should be responding to the intervention. If the majority of students are not responding, then the team should consider variables outside of the learner before considering one particular learner a "non-responder".

In order to make sound decisions about a student's response to an intervention, certain conditions should be met. First, the student should receive the intervention as designed. Second, the assessments conducted to monitor progress should be of high quality (reliable and valid). Third, there must be enough data points and enough instruction delivered in order to make a reliable decision about student performance.

Due to the nature of progress-monitoring, measures are designed to be highly sensitive to changes in performance; it is also susceptible to lower levels of reliability. For this reason, several data points, across multiple measures, must be analyzed over time, to make good decisions. The following guidelines to determine progress are recommended based on the types of measures utilized as described above.

Step 1: Determine the student's current level

After universal screening, students are identified to receive intervention based on the level of risk they display from the screening. For students whose data suggest they are significantly below grade level expectations (generally defined as 2 or more years), the team will wish to consider conducting survey level assessment (SLA) to determine their instructional level. Survey Level Assessment involves administering progressively lower levels of testing material to a student until they reach a level at which they are close to or at their instructional level. This is typically conceived as anywhere between the 10th and 25th percentile level of success when compared to a larger norm group. Their instructional level will guide the decision making regarding material to monitor and set goals in the next steps.

Additionally, users are advised to use the survey level processes recommended by the assessments chosen. For example, DIBELS outlines survey level assessment recommendations here: https://dibels.org/papers/ProgressMonitoringGuidelines.pdf.

Step 2: Determine measures to use and if the student will be monitored on or off grade level

When selecting measures to monitor the effectiveness of an intervention, it will be important to select multiple measures to not only indicate the effectiveness of the intervention but also the generalization of skills back to the classroom. Generally measures should include:
- Discrete skills of intervention focus (*mastery measures and/or intervention-embedded assessments*)
- Curriculum-based measures at the grade and instructional level
- Informal classroom assessments, anecdotal data and other assessments to ensure generalization of skills

From the survey level assessment, the level of monitoring will be determined. Generally, if the student is only slightly below grade level, they will be monitored on grade level. If they are significantly below grade level (2 or more years), they will be monitored at their instructional level.

Step 3: Set a realistic but ambitious goal

Setting a goal for a student or group of students receiving intervention should be focused on closing the gap in their performance within a reasonable amount of time. When setting goals for students, it is important to consider the recommendations of the assessment chosen. Based on the assessment, either norm referenced or criterion referenced goals can be utilized. Below is general guidance around setting criterion-referenced and norm-referenced based goals.

Criterion referenced

When utilizing criterion referenced measures, set the goal based on end of year benchmark expectations in the level of material you are assessing. For students being assessed in off grade level material, modify time to meet this goal in order to accelerate progress to close the gap between student's current level and grade level expectations (i.e., a fourth grade student monitored on second grade material would have a goal at the benchmark level for end of year second grade but be expected to meet that goal in three months time rather than six months). If monitoring in off grade level material, once the student attains the off grade level goal, move progress material up to the next appropriate level and modify the goal to reflect this grade level's criterion. (Good)

Additionally, DIBELS Next Pathways of Progress and other assessments using Growth Norms are available as a method to set goals for students who are monitored on grade level material and have participated in the Beginning of Year (BOY) assessment. When utilizing DIBELS Next Pathways to Progress or other Growth Norms, users should set a goal for the student to achieve Above Typical to Well Above Typical progress. The intensity of the intervention should then match the ambitiousness of goal. (Good)

Norm-referenced

When utilizing norm reference measures, use either national or local norms. Set a goal to elevate the student's performance to the average range (25th-75th percentile on national or local norms) in the material you are assessing. For students assessed in off grade level material modify time to meet this goal in order to accelerate progress to close the gap between student's current level and grade level expectations (i.e., if monitoring a fourth grade student in second grade material, set a goal to get the student to the 25th percentile on end of year norms in the second grade material by the middle of the year). If monitoring in off grade level material, once student attains this level, move pm material up to the next appropriate level and modify goal to reflect this grade level's norm. (Shinn)

Rate of Improvement

A third method to setting goals is using a Rate of Improvement. Research has shown over time that this can also reliably be used to accelerate growth for students receiving intervention. In order to close the gap for students, the rate of improvement should be at least 1.5 to 2 times of how most students are performing. Since the end goal for rate of improvement goal setting is most often very similar to that of the other methods, it will not be explained in detail here. However, after a norm-referenced or criterion-referenced goal is set for a student, the expected rate of improvement should be checked to ensure that the goal set is appropriate to close the gap and also is realistic for the student. Generally rate of improvement is calculated using the following formula: Goal score-Baseline score/# weeks.

Step 4: Monitor progress frequently according to the following recommendations

Frequency of progress-monitoring is affected by the level of student performance, the skill being measured, and the measures being utilized as well as the balancing of time demands. A general rule is that more discrete skills typically acquired at the younger grades will show growth more quickly and therefore can be monitored more frequently. Measures that encompass the integration of skills (i.e., reading comprehension, writing, math problem-solving) will show growth more slowly and therefore can be monitored less frequently. Generally speaking, progress-monitoring frequency should mimic the level of intensity of the intervention. The more intense the intervention (and hence typically the more intense the student needs), the more frequent a student's progress should be monitored.

The guidance below outlines the integration of recommended measures and frequency for students monitoring on and off grade level:

Students monitored on-grade level	
Measure	**Frequency**
CBM/CAT on grade level material associated with area of need, **graphed with goal and trendline**	▪ Supplemental- 1-2 x per month ▪ Intensive- 1-2 x per week
Measure of discrete skill being intervened upon (mastery measure or intervention-embedded assessment) to demonstrate acquisition of skills	Determined by intervention protocol, intensity, and student response
Informal classroom assessments and anecdotal data	Determined by student progress and need to inform instruction

Students monitored off-grade level	
Measure	**Frequency**
CBM/CAT on grade level material to insure generalization to content	▪ 1x a month
CBM on instructional level material determined by survey level assessment, **graphed with goal and trendline**	▪ Supplemental- 1-2 x per month ▪ Intensive- 1-2 x per week
Measure of discrete skill being intervened upon (mastery measure or intervention-embedded assessment) to demonstrate acquisition of skills	Determined by intervention protocol, intensity, and student response
Informal classroom assessments and anecdotal data	Determined by student progress and need to inform instruction

Step 5: Make decisions regarding student progress

Some of the above data can be graphically represented while other pieces cannot. Typically, only CBM or CAT data is graphed because this meets the characteristics that allow this type of representation to take place. CBM and CAT data is repeatable due to its ability to measure the same set of skills over time. This allows the data to be represented in a time-series format. If new skills are assessed at each administration of a measure (as with mastery measures, many intervention embedded assessments and classroom assessments), then this cannot typically be represented on a time-series graph because administration at one point in time cannot be compared to another point in time. It is important to note, however, that all data gathered regarding student progress should be given equal weight in decision-making regardless of whether or not that data is in graphical form. Finally, current research indicates that **length of time of intervention** rather than number of data points be the primary method of determining when to assess a student's response. Data point rules are used to see if they made progress or not but these **decisions cannot be made if the student has not been given enough time in the instruction to make progress**. The following table summarizes how to begin interpretation of data based on the measure used:

Measure	Decision Rules with data points and time	Notes
CBM/CAT associated with area of need used for most frequent monitoring – grade or instructional level	• Monitor for minimum of **10 weeks** (12-14 is optimal) • Calculate trend line using OLS (ordinary least squares) with at least 7-10 data points • Does trend line indicate positive, negative or questionable response	When making decisions: • Consider the quality of data set • Reduce variability by ensuring standardized testing conditions • If questions about quality of data, use the median of 3 data collection points
CBM/CAT associated with area of need and grade level (if being monitored off grade level)	• Is the gap between where they were and where you need them to be shrinking?	• This measure is to ensure that progress is not only skill-based but being generalized to grade level content
Measure of discrete skill being intervened upon (mastery measure or intervention-embedded assessment) to demonstrate acquisition of skills	• Follow program guidance (if available) for evidence of mastery • Analyze for accuracy and automaticity of completed items • Is the gap between student performance and expected performance decreasing?	• If student is mastering discrete skills but not generalizing, team will want to problem solve to ensure intervention intensity matches student need
Informal classroom assessments and anecdotal data	• Is gap between student performance and expected performance decreasing over time? • Is student making accelerated progress toward grade level standards?	• If student is far below grade level, this may be the data source that shows the slowest progress

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