Supporting RTI and the Common Core: How to Collect Data in the Classroom

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www.interventioncentral.org
Workshop PPTs and handout available at:

http://www.interventioncentral.org/swboces
Workshop Agenda: ‘Data Challenges’

What are classroom-friendly ways to collect data to assess student academic performance that can demonstrate mastery of Common Core State Standards?

How can teachers estimate ‘typical peer academic performance’ when attempting to set progress-monitoring goals for struggling students?

When skill ACQUISITION is the target, how does a teacher set a clear student intervention goal?

How does the teacher set academic FLUENCY goals for a student receiving ‘off-level’ supplemental interventions?

What simple organizing tool can teachers use to help them to structure their data collection—to include baseline, goal, and progress-monitoring?
Common Core State Standards Initiative
http://www.corestandards.org/

View the set of Common Core Standards for English Language Arts (including writing) and mathematics being adopted by states across America.
Common Core State Standards: Supporting Different Learners in Reading

“The Standards set grade-specific standards but do not define the intervention methods or materials necessary to support students who are well below or well above grade-level expectations. No set of grade-specific standards can fully reflect the great variety in abilities, needs, learning rates, and achievement levels of students in any given classroom. However, the Standards do provide clear signposts along the way to the goal of college and career readiness for all students.”

Common Core State Standards:
Supporting Different Learners in Reading

“It is also beyond the scope of the Standards to define the full range of supports appropriate for English language learners and for students with special needs. At the same time, all students must have the opportunity to learn and meet the same high standards if they are to access the knowledge and skills necessary in their post-high school lives.”

Educational Decisions and Corresponding Types of Assessment

- SCREENING/BENCHMARKING DECISIONS: Tier 1: Brief screenings to quickly indicate whether students in the general-education population are academically proficient or at risk.

- PROGRESS-MONITORING DECISIONS: At Tiers 1, 2, and 3, ongoing ‘formative’ assessments to judge whether students on intervention are making adequate progress.

- INSTRUCTIONAL/DIAGNOSTIC DECISIONS: At any Tier, detailed assessment to map out specific academic deficits, discover the root cause(s) of a student’s academic problem.

- OUTCOME DECISIONS: Summative assessment (e.g., state tests) to evaluate the effectiveness of a program.

Interventions: Potential ‘Fatal Flaws’

Any intervention must include 4 essential elements. The absence of any one of the elements would be considered a ‘fatal flaw’ (Witt, VanDerHeyden & Gilbertson, 2004):

1. **Clearly defined problem.** The student’s target concern is stated in specific, observable, measureable terms. This ‘problem identification statement’ is the most important step of the problem-solving model (Bergan, 1995), as a clearly defined problem allows the teacher or RTI Team to select a well-matched intervention to address it.

2. **Baseline data.** The teacher or RTI Team measures the student’s academic skills in the target concern (e.g., reading fluency, math computation) prior to beginning the intervention. Baseline data becomes the point of comparison throughout the intervention to help the school to determine whether the intervention is effective.

Interventions: Potential ‘Fatal Flaws’ (Cont.)

3. *Performance goal*. The teacher or RTI Team sets a specific, data-based goal for student improvement during the intervention and a checkpoint date by which the goal should be attained.

4. *Progress-monitoring plan*. The teacher or RTI Team collects student data regularly to determine whether the student is on-track to reach the performance goal.

Big Ideas: The Four Stages of Learning Can Be Summed Up in the ‘Instructional Hierarchy’

(Haring et al., 1978)

Student learning can be thought of as a multi-stage process. The universal stages of learning include:

- **Acquisition**: The student is just acquiring the skill.
- **Fluency**: The student can perform the skill but must make that skill ‘automatic’.
- **Generalization**: The student must perform the skill across situations or settings.
- **Adaptation**: The student confronts novel task demands that require that the student adapt a current skill to meet new requirements.

Response to Intervention

Avg Classroom Academic Performance Level

Discrepancy 1: Skill Gap (Current Performance Level)

Discrepancy 2: Gap in Rate of Learning ('Slope of Improvement')

Target Student

‘Dual-Discrepancy’: RTI Model of Learning Disability (Fuchs 2003)
Classroom Data Collection: RTI and CCSS

At your table:

• Discuss the challenges that you face in your classroom, school, or district with data collection to support RTI and the Common Core...
Data Collection Challenge:

What are classroom-friendly ways to collect data to assess student academic performance that can demonstrate mastery of Common Core State Standards? pp. 14-17
Activity: Classroom Methods of Data Collection

1. Curriculum-Based Measurement
2. Global Skills Checklists
3. Rating Scales (Including Behavior Report Cards)
4. Academic Skills:
   - Cumulative Mastery Log
5. Work Products
Classroom Data Collection

Curriculum-Based Measurement. Curriculum-Based Measurement (CBM) is a family of brief, timed measures that assess basic academic skills. CBMs have been developed to assess phonemic awareness, oral reading fluency, number sense, math computation, spelling, written expression and other skills. Among advantages of using CBM for classroom assessment are that these measures are quick and efficient to administer; align with the curriculum of most schools; have good ‘technical adequacy’ as academic assessments; and use standard procedures to prepare materials, administer, and score (Hosp, Hosp & Howell, 2007).
Response to Intervention

Description:
Worksheet contains either single-skill or multiple-skill problems.

CBM Math Computation

Administration:
Can be administered to groups (e.g., whole class).
Students have 2 minutes to complete worksheet.

Curriculum-Based Assessment Mathematics
Multiple-Skills Computation Probe: Student Copy

Date: ________________________

50
+20
---
677
-151

31
\times 21
---
71
+26

Scoring: Students get credit for each correct digit—a method that is more sensitive to short-term student gain.
Response to Intervention

Curriculum-Based Measurement: Advantages as a Set of Tools to Monitor RTI/Academic Cases

- **Aligns** with curriculum-goals and materials
- **Is reliable and valid** (has ‘technical adequacy’)
- **Is criterion-referenced**: sets specific performance levels for specific tasks
- **Uses standard procedures** to prepare materials, administer, and score
- **Samples student performance to give objective, observable ‘low-inference’ information** about student performance
- **Has decision rules** to help educators to interpret student data and make appropriate instructional decisions
- **Is efficient** to implement in schools (e.g., training can be done quickly; the measures are brief and feasible for classrooms, etc.)
- **Provides data that can be converted into visual displays** for ease of communication

Among other areas, CBM Techniques have been developed to assess:

- Reading fluency
- Reading comprehension
- Math computation
- Writing
- Spelling
- Phonemic awareness skills
- Early math skills
Curriculum-Based Measurement: Example

Example: Mr. Jackson, a 3rd-grade teacher, decided to use explicit time drills to help his student, Andy, become more fluent in his multiplication math facts. Prior to starting the intervention, Mr. Jackson administered a CBM math computation probe (single-skill probe; multiplication facts from 0 to 12) on three consecutive days. Mr. Jackson used the median, or middle, score from these three assessments as baseline—finding that the student was able to compute an average of 20 correct digits in two minutes. He also set a goal that Andy would increase his computation fluency on multiplication facts by 3 digits per week across the 5-week intervention, resulting in an intervention goal of 35 correct digits.
Curriculum-based measures are well-suited for measuring:

- Standards tied to basic academic skills include both an accuracy and fluency component.
- Whether students have the basic skills to succeed on grade-level work and grade-level Standards. (That is, CBM screening tools tied to benchmark norms can quickly identify those students who—without timely academic intervention—will probably not attain the Standards.)
**CCSS: Grade 4 ELA Fluency**

4. Read with sufficient accuracy and fluency to support comprehension.
   a. Read grade-level text with purpose and understanding.
   b. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings.
   c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

**CCSS: Grade 4 Math Fluency**

4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.
5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.


“...One way I have used the Maze in the past at the secondary level, is as a targeted screener to determine an instructional match between the student and the text materials. By screening all students on one to three Maze samples from the text and/or books that were planned for the course, we could find the students who could not handle the materials without support (study guides, highlighted texts, alternative reading material). ...This assessment is efficient and it seems quite reliable in identifying the potential underachievers, achievers, and overachievers. The real pay back is that success can be built into the courses from the beginning, by providing learning materials and supports at the students' instructional levels.”

Lynn Pennington, Executive Director, SSTAGE

(Student Support Team Association for Georgia Educators)
Response to Intervention

Classroom Data Collection

Global skills checklist. The teacher selects a global skill (e.g., homework completion; independent seatwork). The teacher then breaks the global skill down into a checklist of component sub-skills—a process known as ‘discrete categorization’ (Kazdin, 1989). An observer (e.g., teacher, another adult, or even the student) can then use the checklist to note whether a student successfully displays each of the sub-skills on a given day. Classroom teachers can use these checklists as convenient tools to assess whether a student has the minimum required range of academic enabling skills for classroom success.
Global Skills Checklist: Example

- Example: A middle school math instructor, Mr. Haverneck, was concerned that a student, Rodney, appears to have poor ‘organization skills’. Mr. Haverneck created a checklist of observable subskills that, in his opinion, were part of the global term ‘organization skills’:
  - arriving to class on time;
  - bringing work materials to class;
  - following teacher directions in a timely manner;
  - knowing how to request teacher assistance when needed;
  - having an uncluttered desk with only essential work materials.

Mr. Haverneck monitored the student’s compliance with elements of this organization -skills checklist across three days of math class. On average, Rodney successfully carried out only 2 of the 5 possible subskills (baseline). Mr. Haverneck set the goal that by the last week of a 5-week intervention, the student would be found to use all five of the subskills on at least 4 out of 5 days.
Academic Survival Skills: Why Are They Important?

Student academic success requires more than content knowledge or mastery of a collection of cognitive strategies. Academic accomplishment depends also on a set of ancillary skills and attributes—also known as academic survival skills (DiPerna, 2006). Examples of academic survival skills include:

- Study skills
- Homework completion
- Cooperative learning skills
- Organization
- Independent seatwork

Academic Survival Skills Checklists: A Tool to Help Students to Manage Their Own Learning

Students who would achieve success on the ambitious Common Core State Standards must first cultivate a set of general 'academic survival skills' that they can apply to any coursework (DiPerna, 2006).

Examples of academic survival skills include the ability to study effectively, be organized, and manage time well.

When academic survival skills are described in global terms, though, it can be difficult to define them. For example, two teachers may have different understandings about what the term 'study skills' means.

A solution is to complete a 'task analysis' of a given global academic-survival skill, dividing that larger skill into a checklist of component sub-skills (Kazdin, 1989).

With a checklist that breaks a global academic survival skill into components, a teacher can judge whether a student possesses the essential building-block strategies that make up a larger global 'survival skills' term. Teachers have access to good sources of information to verify what academic survival skills a student possesses, including direct observation; interviews (of the student, past teacher, or parent); and student work products.

### Academic Survival Skills Checklist: Study Skills Example

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<thead>
<tr>
<th>STUDY SKILLS CHECKLIST</th>
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<tbody>
<tr>
<td>1. MAINTAIN A STUDY SCHEDULE. Maintain a regular (e.g., daily) study schedule with sufficient time set aside to review course content and information.</td>
</tr>
<tr>
<td>2. AVOID DISTRACTERS. When studying, avoid distracters (e.g., cell phone, television, Internet) that can erode study time and divert attention.</td>
</tr>
<tr>
<td>3. CREATE AN ORGANIZED STUDY SPACE. Prepare the study environment by organizing a space and setting out all necessary work materials before beginning study.</td>
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</table>

**Academic Survival Skills Checklist: Study Skills Example**

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<tbody>
<tr>
<td>4. SET STUDY GOALS. Prior to a study session, define one or more specific study goals to accomplish (e.g., to review information for an upcoming quiz; to locate key information to include in an essay).</td>
</tr>
<tr>
<td>5. MAKE A STUDY AGENDA. If studying multiple subjects in one session, create a study agenda for that session with a listing of the key information to be reviewed for each subject and the time allocated for that review.</td>
</tr>
<tr>
<td>6. DO THE TOUGH STUDY WORK FIRST. Tackle the most difficult or challenging study objectives first during study sessions, when energy levels and ability to concentrate are at their peak.</td>
</tr>
</tbody>
</table>

### STUDY SKILLS CHECKLIST

7. **VARY ACTIVITIES.** Mix up study activities during a study session (e.g., alternating between reading and writing) to maintain engagement and interest.

8. **CHUNK A LARGE STUDY TASK INTO SMALLER UNITS.** If studying a large amount of material in a single session, 'chunk' the material into smaller units and take short breaks between each unit to maintain focus.

9. **TEACH CHALLENGING CONTENT.** When studying complex or challenging material, assume the role of instructor and attempt to explain or describe the material to a real or imagined listener. Teaching study material is an efficient way to verify understanding.

# Academic Survival Skills Checklist: Study Skills Example

## STUDY SKILLS CHECKLIST

10. HIGHLIGHT QUESTIONS. When reviewing notes or completing course readings, use highlighters, margin notes, sticky notes, or other notation methods to flag questions, unknown vocabulary terms, or areas of confusion for later review with teacher or tutor.

11. SEEK HELP WHEN NEEDED. Approach the teacher or tutor for help as needed to answer questions or clear up areas of confusion identified during study sessions.

### STUDY SKILLS CHECKLIST

12. **AVOID CRAM SESSIONS.** Stay away from all-night cram sessions before major tests. Cram sessions are ineffective because they are inefficient and often leave students exhausted and unable to perform their best on exams. Instead, distribute study and test-review time across multiple days and consider allocating an upward limit of about 1 hour per study session to maintain focus and energy.

Academic Survival Skills Checklists: 5 Uses

Consistent expectations among teachers. Teachers at a grade level, on an instructional team, or within an instructional department can work together to develop checklists for essential global academic-survival skills. As teachers collaborate to create these checklists, they reach agreement on the essential skills that students need for academic success and can then consistently promote those skills across their classrooms.
Academic Survival Skills Checklists: 5 Uses

Proactive student skills training. One excellent use of these checklists is as a classwide student training tool. At the start of the school year, teachers can create checklists for those academic survival skills in which students are weak (e.g., study skills, time management) and use them as tools to train students in specific strategies to remediate these deficiencies. Several instructors working with the same group of students can even pool their efforts so that each teacher might be required to teach a checklist in only a single survival-skill area.
Response to Intervention

Academic Survival Skills Checklists: 5 Uses

Student skills self-check. Teachers can use academic survival-skills checklists to promote student responsibility. Students are provided with master copies of checklists and encouraged to develop their own customized checklists by selecting and editing those strategies likely to work best for them. Instructors can then hold students accountable to consult and use these individualized checklists to expand their repertoire of strategies for managing their own learning.
Response to Intervention

Academic Survival Skills Checklists: 5 Uses

Monitoring progress of academic survival-skills interventions.

Often, intervention plans developed for middle and high school students include strategies to address academic survival-skill targets such as homework completion or organization. Checklists are a good way for teachers to measure the student's baseline use of academic survival skills in a targeted area prior to the start of the intervention. Checklists can also be used to calculate a student outcome goal that will signify a successful intervention and to measure (e.g., weekly) the student's progress in using an expanded range of academic survival-skills during the intervention period.
Parent conferences. When teachers meet with parents to discuss student academic concerns, academic survival-skills checklists can serve as a vehicle to define expected student competencies and also to decide what specific school and home supports will most benefit the student. In addition, parents often appreciate receiving copies of these checklists to review with their child at home.
Academic Survival Skills Checklist Maker

http://www.interventioncentral.org/tools/academic-survival-skills-checklist-maker

The Academic Survival Skills Checklist Maker provides a starter set of strategies to address:

• homework
• note-taking
• organization
• study skills
• time management.

Teachers can use the application to create and print customized checklists and can also save their checklists online.
Global Skills Checklists and the Standards

Checklists are well-suited for:

• evaluating whether a student has the essential foundation skills necessary to attain success on a given Standard.

• breaking a complex Standard down into component skills that can be verified through direct observation, review of work products, student interview, or other means.
Global Skills Checklists and the Standards

- breaking a complex Standard down into component skills that can be verified through direct observation, review of work products, student interview, or other means.

Language Standards: K-5: Production & Distribution of Writing


Grade 4 students:

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.
   a. Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase.
   b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph).
   c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.
Reading Comprehension ‘Fix-Up’ Skills: A Toolkit

- **Student Strategy**] **Apply Vocabulary ‘Fix-Up’ Skills for Unknown Words** (Klingner & Vaughn, 1999). When confronting an unknown word in a reading selection, the student applies the following vocabulary ‘fix-up’ skills:

  1. Read the sentence again.
  2. Read the sentences before and after the problem sentence for clues to the word’s meaning.
  3. See if there are prefixes or suffixes in the word that can give clues to meaning.
  4. Break the word up by syllables and look for ‘smaller words’ within.
Activity: Academic Survival Skills Checklists

At your tables:

• Discuss how your school might make use of Academic Survival Skills Checklists:
  - To measure whether students have necessary classroom ‘survival skills’ for high-level academic work.
  - As a teaching tool for students.
Rating Scales: Monitoring
Student Academic or General Behaviors:
Daily Behavior Report Cards
Behavior Report Cards (BRCs) Are . . .

brief forms containing student behavior-rating items. The teacher typically rates the student daily (or even more frequently) on the BRC. The results can be graphed to document student response to an intervention.
Behavior Report Cards Can Monitor Many Behaviors, Including…

- Hyperactivity
- On-Task Behavior (Attention)
- Work Completion
- Organization Skills
- Compliance With Adult Requests
- Ability to Interact Appropriately With Peers
Behavior Report Card Maker

- Helps teachers to define student problem(s) more clearly.
- Reframes student concern(s) as replacement behaviors, to increase the likelihood for success with the academic or behavioral intervention.
- Provides a fixed response format each day to increase the consistency of feedback about the teacher’s concern(s).
- Can serve as a vehicle to engage other important players (student and parent) in defining the problem(s), monitoring progress, and implementing interventions.
Jim's Report Card

Student Name: Brian  Date: 

Rater: Mr. Wright  Classroom: Classroom 245

Directions: Review each of the Behavior Report Card items below. For each item, rate the degree to which the student showed the behavior or met the behavior goal.

Brian spoke respectfully and complied within 1 minute with adult requests without argument or complaint.

The degree to which Brian met this behavior goal

1 2 3

Brian went to the nurse only when needed.

How well Brian did in meeting the behavior goal

1 2 3

Poor  Fair  Good

Brian spoke respectfully and complied within 1 minute with adult requests without argument or complaint.

How well Brian did in meeting the behavior goal

1 2 3

Poor  Fair  Good

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Behavior Report Card: Example

Example: All of the teachers on a 7th-grade instructional team decided to use a Behavior Report to monitor classroom interventions for Brian, a student who presented challenges of inattention, incomplete work, and occasional non-compliance. They created a BRC with the following items:

- **Brian focused his attention on teacher instructions, classroom lessons and assigned work.**
- **Brian completed and turned in his assigned class work on time.**
- **Brian spoke respectfully and complied with adult requests without argument or complaint.**

Each rating items was rated using a 1-9 scale:

On average, Brian scored no higher than 3 (‘Never/Seldom’ range) on all rating items in all classrooms (**baseline**). The team set as an **intervention goal** that, by the end of a 6-week intervention to be used in all classrooms, Brian would be rated in the 7-9 range (‘Most/All of the Time’) in all classrooms.
Behaviors Report Card Maker

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Rating Scales (Behavior Report Cards) and the Standards

Behavior Report Cards and similar rating scales are ideal for:

• monitoring observable student behaviors and interactions that support or are directly cited as part of Common Core Standards.
Rating Scales (Behavior Report Cards) and the Standards

Speaking & Listening Standards: 6-12: Comprehension & Collaboration

Grade 7 students:

1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others’ ideas and expressing their own clearly.
   a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
   b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.
   c. Pose questions that elicit elaboration and respond to others’ questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.
   d. Acknowledge new information expressed by others and, when warranted, modify their own views.
   e. Seek to understand other perspectives and cultures and communicate effectively with audiences or individuals from varied backgrounds.

Classroom Data Collection

- **Behavioral Frequency Count/Behavioral Rate.** An observer (e.g., the teacher) watches a student’s behavior and keeps a cumulative tally of the number of times that the behavior is observed during a given period. Behaviors that are best measured using frequency counts have clearly observable beginning and end points—and are of relatively short duration.
  - Examples include:
    - student call-outs
    - requests for teacher help during independent seatwork.
    - raising one’s hand to make a contribution to large-group discussion.

Teachers can collect data on the frequency of observed student behaviors: (1) by keeping a cumulative mental tally of the behaviors; (2) by recording behaviors on paper (e.g., as tally marks) as they occur; or (3) using a golf counter or other simple mechanical device to record observed behaviors.
Behavioral Frequency Count/Behavioral Rate: Example

- Example: Ms. Stimson, a fourth-grade teacher, was concerned at the frequency that a student, Alice, frequently requested teacher assistance unnecessarily during independent seatwork. To address this concern, the teacher designed an intervention in which the student would first try several steps on her own to resolve issues or answer her questions before seeking help from the instructor. Prior to starting the intervention, the teacher kept a behavioral frequency count across three days of the number of times that the student approached her desk for help during a daily 20-minute independent seatwork period (baseline).

- Ms. Stimson discovered that, on average, the student sought requested help 8 times per period (equivalent to 0.4 requests for help per minute). Ms. Stimson set as an intervention goal that, after 4 weeks of using her self-help strategies, the student’s average rate of requesting help would drop to 1 time per independent seatwork period (equivalent to 0.05 requests for help per minute).
Classroom Data Collection

• **Academic Skills: Cumulative Mastery Log.** During academic interventions in which the student is presented with specific items such as math facts or spelling words, the instructor can track the impact of the intervention by recording and dating mastered items in a cumulative log.

• To collect baseline information, the instructor reviews all items from the academic-item set with the student, noting which items the student already knows. Then, throughout the intervention, the instructor logs and dates any additional items that the student masters.
# Academic Intervention: Cumulative Mastery Log

**Student:** __________________________  **School Yr:** ______  **Classroom/Course:** ________________

**Academic Item Set:** Define the set of academic items to be measured (e.g., basic multiplication facts from 1-12; pre-primer Dolch Word list; vocabulary terms for biology course):

________________________________________________________________________________________

**Criteria for Mastery:** Describe the criteria for judging when the student has mastered a particular item from the academic item set. (Example: "A math fact is considered mastered when the student successfully answers that math-fact flashcard within 3 seconds on three successive occasions during a session and repeats this performance without error across two successive sessions.")

________________________________________________________________________________________

**Baseline Skills Inventory:** Prior to beginning the intervention, inventory the student's current level of mastery of the skill being measured. (NOTE: Apply the 'criteria for mastery' guidelines written above when completing the baseline skills inventory.)

**Person completing the inventory:** __________________________  **Date:** ______/_____/_____

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[www.interventioncentral.org]
Example: Mrs. Ostrowski, a 1st-grade teacher, decides to provide additional intervention support for Jonah, a student in her class who does not have fluent letter recognition skills. Before starting an intervention, she inventories and records Jonah’s baseline skills—note that Jonah can fluently and accurately recognize 18 upper-case letters and 14 lower-case letters from the English alphabet. She sets as an intervention goal that Jonah will master all remaining items – 8 upper-case and 12 lower-case letters—within four weeks.

Mrs. Ostrowski then begins the daily intervention (incremental rehearsal of letters using flashcards). Whenever Jonah is able fluently and accurately to name a previously unknown letter, the teacher records and dates that item in her cumulative mastery log.
Cumulative Mastery Log and the Standards

Cumulative Mastery Logs are suitable for monitoring Standards that:

- Target a fixed set of academic items to be learned.
- Focus on acquisition of skills (without an explicit fluency component).
Cumulative Mastery Log and the Standards

Grade 1: Operations & Algebraic Thinking

Add and subtract within 20.
5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., \(8 + 6 = 8 + 2 + 4 = 10 + 4 = 14\)); decomposing a number leading to a ten (e.g., \(13 - 4 = 13 - 3 - 1 = 10 - 1 = 9\)); using the relationship between addition and subtraction (e.g., knowing that \(8 + 4 = 12\), one knows \(12 - 8 = 4\)); and creating equivalent but easier or known sums (e.g., adding \(6 + 7\) by creating the known equivalent \(6 + 6 + 1 = 12 + 1 = 13\)).

Classroom Data Collection

**Work Products.** Student work products can be collected and evaluated to judge whether the student is incorporating information taught in the course, applying cognitive strategies that they have been taught, or remediating academic delays. Examples of work products are math computation worksheets, journal entries, and written responses to end-of-chapter questions from the course textbook.

Whenever teachers collect academic performance data on a student, it is recommended that they also assess the performance of typical peers in the classroom. Work products can be assessed in several ways, depending on the identified student problem.
Classroom Data Collection

Work Products-Cont. Work Products can incorporate within them a range of evaluation tools such as rubrics (rating scales) and checklists.

The evaluation of Work Products is defined by:

- the focus on student work as the product to be evaluated.
- the goal of making ‘qualitative’ ratings of student work ‘quantitative’ to allow for direct comparison of student performance across multiple observations.
- collection and evaluation of peer work samples to provide a peer comparison when evaluating the target student’s work.
## 'Monitoring Student Progress Through Work Products' Worksheet

<table>
<thead>
<tr>
<th>Student: ______________________</th>
<th>Grade: ______________________</th>
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<tbody>
<tr>
<td>Teacher: _______________________</td>
<td>Academic Skill/Course: ______</td>
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### Type(s) of Work Products
Describe the type(s) of work products to be collected (e.g., math computation worksheets; writing journal entries; written responses to end-of-chapter questions, etc.):

1. ______________________________________
2. ______________________________________
3. ______________________________________

### Comparison Peers
Select up to 3 typically performing class peers whose work products are to be compared to that of the student:

1. ______________________________________
2. ______________________________________
3. ______________________________________

### Work Conditions
Check the conditions under which work products are to be completed:

- [ ] In-class cooperative learning activities
- [ ] In-class independent seatwork
- [ ] Other: ____________________________
- [ ] In-class teacher-led/large-group activities
- [ ] Homework

### Quality Rating Rubric

Use this global rubric to rate the quality of each student work product collected:

- **1** Significantly below level of peers (rudimentary content, absence of ideas, and/or failure to use key strategies or steps)
- **2** Somewhat below level of peers (lacking content, inadequate development of ideas, and/or limited application of key strategies or steps)
- **3** At level of peers (e.g., average content, development of ideas, and/or application of key strategies or steps)
- **4** Above peers in overall quality (e.g., strong content, ideas developed to an advanced degree, creative application of key strategies or steps)

<table>
<thead>
<tr>
<th>Date: <strong>/</strong>/____</th>
<th>Target Student</th>
<th>Name of Comparison Peer: ____________________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percentage of work product completed: ______ %</td>
<td>Percentage of work product completed: ______ %</td>
</tr>
<tr>
<td></td>
<td>[Optional] Estimated accuracy of completed work: ______ %</td>
<td>[Optional] Estimated accuracy of completed work: ______ %</td>
</tr>
<tr>
<td></td>
<td>[Optional] Grade assigned to this work product: ______</td>
<td>[Optional] Grade assigned to this work product: ______</td>
</tr>
<tr>
<td></td>
<td>Rate the overall quality of this work product:</td>
<td>Rate the overall quality of this work product:</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Significantly below peers</td>
<td>Somewhat below peers</td>
</tr>
<tr>
<td></td>
<td>Comments: ____________________</td>
<td>Comments: ____________________</td>
</tr>
</tbody>
</table>
Work Products: Example

• Example: Mrs. Franchione, a social studies teacher, identified her eighth-grade student, Alexandra, as having difficulty with course content. The student was taught to use question generation as a strategy to better identify the main ideas in her course readings.

• Mrs. Franchione decided to assess Alexandra’s student journal entries. Each week, Mrs. Franchione assigned students 5 key vocabulary terms and directed them to answer a social studies essay question while incorporating all 5 terms. She also selected 3 typical students to serve as peer comparisons.

  Mrs. Franchione decided to assess Alexandra’s journal entries according to the following criteria:

  • Presence of weekly assigned vocabulary words in the student essay
  • Unambiguous, correct use of each assigned vocabulary term in context
  • Overall quality of the student essay on a scale of 1 (significantly below peers) to 4 (significantly above peers).
Work Products: Example (cont.)

- To establish a **baseline** before starting the intervention, Mrs. Franchione used the above criteria to evaluate the two most recent journal entries from Alexandra’s journal—and averaged the results: 4 of assigned 5 vocabulary terms used; 2 used correctly in context; essay quality rating of 1.5.

- Peer comparison: all 5 assigned vocabulary terms used; 4 used correctly in context; average quality rating of 3.2.

Mrs. Franchione set an **intervention goal** for Alexandra that—by the end of the 5-week intervention period—the student would regularly incorporate all five vocabulary terms into her weekly journal entries, that at least 4 of the five entries would be used correctly in context, and that the student would attain a quality rating score of 3.0 or better on the entries.
Work Products and the Standards

Work Products are useful when collecting classroom data relating to Standards whose evaluation requires a mix of:

- holistic qualitative ratings, and
- verification of the presence (or absence) of specific elements.
### Work Products and the Standards

### Writing Standards: 6-12: Text Types & Purposes

<table>
<thead>
<tr>
<th>Grade 7 students:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</td>
</tr>
<tr>
<td>a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.</td>
</tr>
<tr>
<td>b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</td>
</tr>
<tr>
<td>c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</td>
</tr>
<tr>
<td>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</td>
</tr>
<tr>
<td>e. Establish and maintain a formal style.</td>
</tr>
<tr>
<td>f. Provide a concluding statement or section that follows from and supports the information or explanation presented.</td>
</tr>
</tbody>
</table>

Activity: Work Products

At your tables:

- Review the form for assessing work products.
- Discuss how your school might be able to use this existing form or modify it to ‘standardize’ the collection and evaluation of student work products.
Activity: Classroom Methods of Data Collection

In your teams: Select one of the methods of data collection discussed in this section of the workshop that you are most interested in having your school adopt or improve.

Discuss how you might promote the use of this data collection method, e.g.,

- Creating assessment materials for teachers
- Arranging for teacher training
- Having teachers pilot the method and provide feedback on how to improve.

Classroom Data Sources:

1. Curriculum-Based Measurement
2. Global Skills Checklists
3. Rating Scales (Including Behavior Report Cards)
4. Academic Skills: Cumulative Mastery Log
5. Work Products
Planning Activity Report Out Procedures

- Review your table number.
- Select 1-2 members of your table to visit another table as ‘ambassadors’ for the report-out part of the activity.
- For this report-out, your ambassadors will visit the following table: *Your table number +1*. 
Data Collection Challenge:

How can teachers estimate ‘typical peer academic performance’ when attempting to set progress-monitoring goals for struggling students? (pp. 2-6)
### Type of Peer Comparison: Description

**Research Norms Based on Fall/Winter/Spring Screenings.** The ideal source for performance information in any academic area is a set of high-quality research norms that:

- are predictive of student success in the targeted academic area(s)
- are drawn from a large, representative student sample
- include fall, winter, and spring norms
- provide an estimate of student risk for academic failure (e.g., that are divided into percentile tables or include score cut-offs denominating low risk/some risk/at risk).

Examples of publicly available academic research norms can be found on these websites:
- EasyCBM.com: [http://www.easycbm.com](http://www.easycbm.com)
- DIBELS NEXT: [http://dibels.org/next.html](http://dibels.org/next.html)

### Strengths/Weaknesses

**Appropriate Use(s) for This Performance Data Source:** Research norms based on fall/winter/spring screening data can be used for the full range of instructional decision-making, including setting student performance outcome goals for core instruction and/or any level of RTI intervention in general education and for setting performance goals on IEPs.

These norms can also be useful at Special Education Eligibility Team meetings to verify whether a student has moved into a lower level of academic risk as a result of RTI interventions.

**Limitations of This Performance Data Source:**

There are no significant limitations in using these research norms.
"We chose to use these norms because they provide the highest-quality information available about student academic performance. They are accurate predictors of student success, have been created using a representative student sample, are broken out into fall/winter/spring norms, and do a good job of estimating the level of academic risk faced by any individual student."
<table>
<thead>
<tr>
<th>Grade</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Rct</td>
<td>WRC</td>
<td>WRC</td>
</tr>
<tr>
<td>1</td>
<td>90</td>
<td>67</td>
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<td>Mean</td>
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<td>47</td>
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<td></td>
<td>StdDev</td>
<td>29</td>
<td>38</td>
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<tr>
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<td>115</td>
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<td>Mean</td>
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</tr>
<tr>
<td></td>
<td>StdDev</td>
<td>102</td>
<td>111</td>
</tr>
</tbody>
</table>

- **Nrt** = Number of Students
- **WRC** = Words Read Correct
- **ROI** = Rate of Improvement

ROI is (Spring Score - Fall Score) / (midpoint score)
### 2005 Hasbrouck & Tindal Oral Reading Fluency Data

Jan Hasbrouck and Gerald Tindal completed an extensive study of oral reading fluency in 2004. The results of their study are published in a technical report entitled, "Oral Reading Fluency: 90 Years of Measurement," which is available on the University of Oregon’s website, [brt.uoregon.edu/tech_reports.htm](http://brt.uoregon.edu/tech_reports.htm).

This table shows the oral reading fluency rates of students in grades 1 through 8 as determined by Hasbrouck and Tindal’s data.

You can use the information in this table to draw conclusions and make decisions about the oral reading fluency of your students. Students scoring below the 50th percentile using the average score of two unpracticed readings from grade-level materials need a fluency-building program. In addition, teachers can use the table to set the long-term fluency goals for their struggling readers.

**Average weekly improvement** is the average words per week growth you can expect from a student. It was calculated by subtracting the fall score from the spring score and dividing the difference by 32, the typical number of weeks between the fall and spring assessments. For grade 1, since there is no fall assessment, the average weekly improvement was calculated by subtracting the winter score from the spring score and dividing the difference by 16, the typical number of weeks between the winter and spring assessments.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentile</th>
<th>Fall WCPM*</th>
<th>Winter WCPM*</th>
<th>Spring WCPM*</th>
<th>Avg. Weekly Improvement**</th>
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<tbody>
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<td>156</td>
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<td>0.9</td>
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<td>84</td>
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</tr>
</tbody>
</table>
### Research Norms Based on a Single Academic Performance Sample

<table>
<thead>
<tr>
<th>Type of Peer Comparison</th>
<th>Strengths/Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appropriate Use(s) for This Performance Data Source:</strong></td>
<td>Norms drawn from a single 'snapshot' student sample can be useful in general education for setting student performance outcome goals for core instruction and/or any level of RTI intervention. Similarly, these norms can be used to set student performance goals on IEPs. In both cases, however, single-sample norms would be used only if more comprehensive fall/winter/spring screening norms are not available.</td>
</tr>
</tbody>
</table>

**Limitations of This Performance Data Source:** Single-sample academic norms can be used for RTI decision-making if there is no better normative information available. However, Special Education Eligibility Teams should be cautious in interpreting these norms, as they do not reflect typical student growth across fall, winter, and spring screenings; and are likely to be based on a small student sample that may not be demographically representative of the school’s or district’s students. |||

These norms may also have been compiled from a relatively small student sample that is not demographically representative of a diverse 'national' population. Nonetheless, these norms are often the best information that is publically available for skills such as mathematics computation—and so have a definite place in RTI decision-making.|

---

**Limitations of This Performance Data Source:** Single-sample academic norms can be used for RTI decision-making if there is no better normative information available. However, Special Education Eligibility Teams should be cautious in interpreting these norms, as they do not reflect typical student growth across fall, winter, and spring screenings; and are likely to be based on a small student sample that may not be demographically representative of the school’s or district’s students.
Response to Intervention

Sample Rationale for...

Research Norms Based on a Single Academic Performance Sample.

“We used these single-sample norms to set student performance goals because they are drawn from research and were the best information available to us. Because the norms were collected at one point in time, however, and were drawn from a small student sample, we realize that these norms should be interpreted cautiously—especially when used for decisions about special education eligibility.”
Response to Intervention

Example: Research Norms Based on Single Academic Performance p. 18

Curriculum-Based Measurement: Math Computation (Adapted from Deno & Mirkin, 1977)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Digits Correct in 2 Minutes</th>
<th>Digits Incorrect in 2 Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>20-38</td>
<td>6-14</td>
</tr>
<tr>
<td>4 &amp; Up</td>
<td>40-78</td>
<td>6-14</td>
</tr>
</tbody>
</table>

Comments: These math computation norms are still widely referenced. However, the norms were collected nearly 30 years ago and may not be widely representative because they were drawn from a relatively small sample of students. Additionally, the norms make no distinction between easy and more challenging math computation problem types. Because of these limitations, these norms are best regarded as a rough indicator of ‘typical’ student math computation skills.
# Table: CBM-Math Computation Fluency Norms: Correct Digits (Intervention & Retention Levels)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Intervention Probes Median-Digits Correct Per Min</th>
<th>Intervention Probes Instructional Range-Digits Correct Per Min (± 1 SD)</th>
<th>Retention Probes Median-Digits Correct Per Min</th>
<th>Retention Probes Instructional Range-Digits Correct Per Min (± 1 SD)</th>
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<tbody>
<tr>
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<td>15</td>
<td>9→21</td>
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<td>26</td>
<td>15→37</td>
<td>36</td>
<td>25→47</td>
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### Table: CBM-Writing Norms: Total Words/Correctly Spelled Words/Correct Word Sequences

<table>
<thead>
<tr>
<th>Grade</th>
<th>Total Words Median</th>
<th>Total Words Instructional Range (± 1 SD)</th>
<th>Correctly Spelled Words Median</th>
<th>Correctly Spelled Words Instructional Range (± 1 SD)</th>
<th>Correct Word Sequences Median</th>
<th>Correct Word Sequences Instructional Range (± 1 SD)</th>
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<td>24→52</td>
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</table>

<table>
<thead>
<tr>
<th>Type of Peer Comparison</th>
<th>Strengths/Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local Norms: Multiple Classrooms.</strong></td>
<td><strong>Appropriate Use(s) for This Performance Data Source:</strong> Schools can use data from local norms across classrooms to identify which students are struggling relative to their classmates, to quantify the academic gap that separates these struggling students from the majority of their local peers, and to match them to appropriate interventions to close that gap. Local academic norms can also be useful for special educators to estimate the minimum skill levels that a student with an IEP will need to survive instructionally when mainstreamed in a particular general-education setting. <strong>Limitations of This Performance Data Source:</strong> Local norms cannot provide an external, objective standard for minimum competency in the academic skill because they vary, depending on the demographic and other characteristics of the school or district being normed. Local norms would not give the Special Education Eligibility Team an absolute, research-derived cut-off for academic competence independent of the district’s average student skill level necessary to certify that the student is an RTI ‘non-responder’.</td>
</tr>
<tr>
<td><strong>Local norms across classrooms are generated when a district or school administers an academic screener in multiple classrooms at a grade level and compiles the data into norms that display the range of student abilities in that local setting.</strong> For example, a district may administer a brief CBM in writing to the entire third grade in its three elementary schools to produce local norms by district and building. Local norms can help to identify which students in a school stand out from local peers because of academic skill deficits and require additional intervention support. However, unlike research norms, local norms do not provide an absolute standard of student academic competence.</td>
<td></td>
</tr>
</tbody>
</table>
“Our school used these local norms from multiple classrooms because they helped us to identify which students fell farthest from the local academic average and thus are likely to need additional intervention support to be successful in their classrooms. We also understand that local norms give us information limited to the student's performance in this school. Only research norms can provide an objective, research-based view of the student's skills compared to a national average.”
Defining ‘Discrepant’ Academic Performance: Do We Use External Norms or Local Norms?

External (Research or Benchmark) Norms: Used to compare the performance of a student or instructional program to objective external/research/national norms. External norms can help to answer these questions:

– Is the school’s core program successful (comparison of local to research norms)?

– Is a child performing at a minimum level of competency in the academic skill to allow us to predict future success?

– What objective academic performance cut-off should be set to determine student entry into and exit from Tier 2 and 3 intervention programs?
Defining ‘Discrepant’ Academic Performance: Do We Use External Norms or Local Norms?

Local Norms: Rank-ordered compilation of scores of students within a particular grade level/school. Local norms are used to help answer these questions:

– What is the typical range of student ability in the grade level or school?
– How is a particular student performing relative to other children in the grade level or school?
– How much effort must a teacher exert to instruct this student relative to other students in the class?
Local Norms Example: Twenty-three 4th-grade students were administered oral reading fluency Curriculum-Based Measurement passages at the 4th-grade level in their school.

- In their current number form, these data are not easy to interpret.
- So the school converts them into a visual display—a box-plot—to show the distribution of scores and to convert the scores to percentile form.
- When Billy, a struggling reader, is screened in CBM reading fluency, he shows a significant skill gap when compared to his grade peers.
Response to Intervention

Baylor Elementary School: Grade Norms: Correctly Read Words Per Min: Sample Size: 23 Students
January Benchmarking

Group Norms: Correctly Read Words Per Min: Book 4-1: Raw Data

31 34 34 39 41 43 52 55 59 61 68 71 74 75 85 89 102 108 112
115 118 118 131

Group Norms: Converted to Box-Plot

Low Value=31
Billy=19
Hi Value=131
1st Quartile=43
Median (2nd Quartile)=71
3rd Quartile=108

<table>
<thead>
<tr>
<th>Type of Peer Comparison</th>
<th>Strengths/Weaknesses</th>
</tr>
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</table>
| **Local Norms: Single Classroom.** Teachers can develop informal academic-performance norms by screening all students in their classroom. Students are administered a standardized screening measure (e.g., timed Maze reading comprehension screening lasting for 3 minutes). The teacher next scores the screener and rank-orders the student results. The teacher can then set a cutpoint (e.g., the lowest 20 percent of scores on the Maze task) to select students to receive additional (Tier 1) core-instruction and/or intervention support. | **Appropriate Use(s) for This Performance Data Source:** Local norms compiled from a single general-education classroom can be very efficient in identifying general-education students who would benefit from extra teacher support in core instruction or may even need specific teacher-delivered interventions. Because local classroom norms estimate the range of current skill levels in a room, they can also be valuable in aiding educators to better plan to support students with special needs included in those settings.  

**Limitations of This Performance Data Source:** Local classroom norms may not be representative of average skill levels in other classrooms—even in the same school—so interpretation of such norms should be limited to the classrooms from which they were derived. Also, self-contained special education settings might find that local norms compiled in their classrooms are not particularly useful. This is because students in such a program are likely to have a range of special education classifications and a correspondingly wide range of academic skills. With such widely discrepant academic skills among students, classroom norms may not yield a meaningful group-level estimate of 'average' performance. |
We screened students in our single classroom using measures of basic academic skills. These local norms have helped us to be proactive in finding students in the room who need additional core instruction or intervention support. However, we realize that norms from one classroom can be meaningfully applied only to that classroom. To come up with a shared standard of average local student performance across a whole grade level, our school will need to screen multiple classrooms and combine the results.
<table>
<thead>
<tr>
<th>Type of Peer Comparison</th>
<th>Strengths/Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Norms: Small Group.</td>
<td><strong>Appropriate Use(s) for This Performance Data Source:</strong> Local small-group norms provide an informal but useful estimate of typical classroom academic performance. The teacher at Tier 1 can use these small-group norms to determine how severe a struggling student's academic delays are. That is, the teacher can administer the same screening measure used to compile the small-group norms to a particular student experiencing academic delays. The teacher then compares the target student’s screening result to the informal small-group peer norm to calculate that struggling student’s current skill gap. Small-group academic norms may also be a useful tool for special educators, providing a low-cost means for estimating the skill levels that a student with an IEP will need (e.g., in oral reading fluency) to be mainstreamed in a particular general-education setting. <strong>Limitations of This Performance Data Source:</strong> Small-group local norms provide at best only a rough estimate of classroom academic skill levels. They should be used for Tier 1 (classroom) core-instruction and intervention planning only when information of higher quality (e.g., research norms, grade-wide local norms, class-wide local norms) are not available. These informal norms would also not be appropriate for higher-stakes, more intensive interventions at Tiers 2 and 3.</td>
</tr>
</tbody>
</table>

The most informal (and low-cost) means for developing local norms is for the teacher to select a small number (e.g., 3-5) of students who—in the teacher's estimation—possess average abilities on the academic skill to be normed. The teacher administers this small group a standardized screening measure (e.g., 3-minute Maze passage). The teacher rank-orders the group's screening results and selects the median student score to provide a rough estimate of a 'typical' level of peer academic performance. |
"We compiled local norms with a small group of students in our classroom because there were no better norms available and we did not have the resources or time to screen an entire class. We used these small-group norms to help us to identify and set intervention goals for students who needed extra classroom academic support. We also recognize that use of these informal group norms should be restricted to general-education Tier 1 problem-solving."
**Type of Peer Comparison**

**Criterion-Referenced Performance Goal.** Proficiency-based performance goals can be described as 'criterion-referenced' when they link to important academic skills and have clear definitions of 'mastery' but are not backed by research-based or local norms. This proficiency level may be created by the teacher; may reflect a school-, district-, or state-defined standard; or may be derived from other sources of expert opinion.

Criterion-referenced performance goals are often linked to the assessment of discrete academic sub-skills that may be mastered in a few days or weeks. For example, a teacher may decide that, in his classroom, students must be able to correctly answer at least 20 math fact problems (single-digit times single-digit) within 3 minutes to be proficient (teacher-developed standard).

Criterion-referenced goals may also be used to gauge student progress over longer periods, such as a full school year. For example, a district may include a curriculum expectation that, by the end of grade 1, students will know all elements of a preselected set of sight words taken from the Dolch Word List (district standard).

Sometimes criterion-reference goals include cutscores that indicate when a student has attained mastery. For example, a science instructor may assess students' knowledge of 50 key biology terms and provide additional instructional and intervention support to students who know fewer than 90 percent of those terms (teacher-developed standard; 90% cutscore).
Criterion-Referenced Performance Goal: Appropriate Use(s) for This Performance Data Source: Criterion-referenced goals are applicable to all grade levels, can be applied to virtually all academic content areas, and can be employed in both general- and special-education settings. They are most useful when developing performance expectations either for short-term academic sub-skills that the student may attain in a matter of weeks (e.g., recognition of all mixed-case letters) or for academic-skill targets for which no local or research norms are available.

Limitations of This Performance Data Source: A significant limitation of criterion-referenced goals is that they are based largely on the 'expert opinion' of teachers, curriculum writers, and other sources—rather than being derived empirically from research-based or local norms. In any individual case in which criterion-referenced goals are used, it is likely to be unclear how the target student is performing relative to other students in his or her local or national peer group or even whether that student’s falling short of these goals is actually predictive of academic failure. It is recommended, then, that criterion-referenced goals be used only when higher-quality research-based or local norms cannot be obtained.
"We developed our own criterion-referenced performance goals for this student because there were no research-based or local norms available for the academic skill that we were measuring. We believe that the standards for mastery that we developed for the student are both ambitious and realistic. However, we also recognize that we lack information both about the degree to which this student's peers have mastered these criterion-referenced goals and about how strongly these goals might correlate with other measures of long-term academic success."
Data Collection Challenge:

When skill ACQUISITION is the target, how does a teacher set a clear student intervention goal?
When ACQUISITION is the Target: How to Set Individual Student Academic Goals

The focus of classroom interventions—particularly for younger grades—is often to help students to acquire a fixed set of academic-skill items (e.g., naming numbers 1-10). When the intervention supports the acquisition of a finite set of items, timelines tend to be short (e.g., 1-8 weeks) and the goal is typically mastery of all items in the academic-item set.
Available on Conference Page

Academic Intervention: Cumulative Mastery Log

Student: ___________________________ School Yr: _____ Classroom/Course: ______________

Academic Item Set: Define the set of academic items to be measured (e.g., basic multiplication facts from 1-12; pre-primer Dolch Word list; vocabulary terms for biology course):

__________________________________________________________________________________________

Criteria for Mastery: Describe the criteria for judging when the student has mastered a particular item from the academic item set. (Example: "A math fact is considered mastered when the student successfully answers that math-fact flashcard within 3 seconds on three successive occasions during a session and repeats this performance without error across two successive sessions.")

__________________________________________________________________________________________

Baseline Skills Inventory: Prior to beginning the intervention, inventory the student's current level of mastery of the skill being measured. (NOTE: Apply the 'criteria for mastery' guidelines written above when completing the baseline skills inventory.)

Person completing the inventory: ___________________________ Date: ____/____/____

<table>
<thead>
<tr>
<th>Item 1: ___________________________</th>
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<tr>
<td>Item 10: ___________________________</td>
<td>Item 20: ___________________________</td>
<td>Item 30: ___________________________</td>
</tr>
</tbody>
</table>
Example for Setting Student Goals:

Acquisition Stage: Sight Words

Mrs. Stoddard, a second-grade teacher, decides to put Jeffrey, a student in her class, on an intervention to expand his recognition of sight words.
When ACQUISITION is the Target: How to Set Individual Student Academic Goals

1. **Select a Set of Academic Items as the Intervention Target.** The teacher decides on a finite set, or 'pool', of academic items to be targeted in the intervention. Examples of possible academic-item sets suitable for intervention are naming of all mixed-case letters; answering 2-term multiplication math facts 0-12; and giving definitions for 20 key biology terms.
Example for Setting Student Goals:
Acquisition Stage: Sight Words

1. Select a Set of Academic Items as the Intervention Target. Mrs. Stoddard selects a set of 30 sight words for Jeffrey’s intervention, taken from ‘intervention’ materials supplied as part of the school’s published core reading program.
2. Establish Criteria for Item Mastery. The teacher next defines the criteria that allow him or her to judge when the student has mastered any particular item from the academic-item pool. Along with the expectation of a correct response, mastery criteria usually include expectations for speed of responding.

Creating criteria for determining item mastery is useful because these criteria allow the teacher both to be more consistent and to have greater confidence in judging whether a particular item has been mastered.
2. **Establish Criteria for Item Mastery-Cont.** As an example of criteria for item mastery, a first-grade teacher decides that mastery on a mixed-case letter-naming intervention should be defined as: "When shown a flash-card with an upper- or lower-case letter, the student will correctly name the letter within 3 seconds."

To cite a second example, a high-school science teacher whose intervention is intended to promote definitions of 20 key biology terms defines mastery as follows: "When shown a biology term, the student will correctly state the definition orally within 10 seconds."
Example for Setting Student Goals: Acquisition Stage: Sight Words

2. **Establish Criteria for Item Mastery.** His teacher develops the following criteria to define sight-word mastery for Jeffrey:

"When shown a flash-card with an sight-word, Jeffrey will correctly name the word within 3 seconds. He will repeat this correct response at least twice without error for two sessions in a row."
When ACQUISITION is the Target: How to Set Individual Student Academic Goals

3. **Collect Baseline Data.** Before beginning the intervention, the teacher determines the student’s baseline level of performance. The easiest way to collect baseline data is to present each of the items from the item-pool to the student in random order, have the student respond, apply the mastery criteria (developed in the previous step) to determine whether each item is correct or incorrect, and record the student’s responses.
When ACQUISITION is the Target: How to Set Individual Student Academic Goals

3. Collect Baseline Data-Cont. For example, a first-grade teacher collects baseline data by showing her student flash-cards with all 52 mixed-case letters while applying her mastery criteria: The teacher sorts each card whose letter the student can correctly name within 3 seconds into a 'known' pile and sorts into an 'unknown' pile those flash-cards that the student identifies incorrectly or hesitates in responding beyond 3 seconds. At the end of the session, the teacher tallies the student’s responses and discovers that at baseline he can correctly identify 38 of a possible 52 mixed-case letters.
3. Collect Baseline Data-Cont. Tip: If a student tends to have a high degree of variability in responding—e.g., on some days the student answers items correctly and on other days he or she gets those same items wrong—the teacher may want to inventory the student's skills across 2-3 successive days and count as 'known' for baseline only those items the student can correctly answer across all sessions.
Example for Setting Student Goals:
Acquisition Stage: Sight Words

3. Collect Baseline Data. Mrs. Stoddard reviewed the set of 30 sight-word flash-cards on two separate days with Jeffrey, applying the mastery criteria that she had developed. She sorted the KNOWN cards into one pile and the UNKNOWN cards into a second pile. At the start of the intervention (baseline), Jeffrey knew 6 of the 30 sight-words.

MASTERY CRITERIA: "When shown a flash-card with an sight-word, Jeffrey will correctly name the word within 3 seconds. He will repeat this correct response at least twice without error for two sessions in a row."
4. **Set an Intervention Exit Goal.** The teacher next sets a student exit goal that defines a successful intervention. In most cases, the teacher will probably decide that the intervention is to be judged a success when the student has met the standard for mastery on all items in the academic-item pool.

For example, a high school science teacher may set, as an intervention exit goal, that a student will be able to correctly define all of the items from a list of 20 key biology terms.
When ACQUISITION is the Target: How to Set Individual Student Academic Goals

4. **Set an Intervention Exit Goal-Cont.** Occasionally, however, the teacher may decide that an alternative outcome goal is acceptable.

For example, a fourth-grade teacher may set as an exit goal that a student whose intervention focuses on 2-term multiplication facts 0-12 will be able to answer at least 90 percent of those math facts correctly. In this teacher’s judgment, 90 percent proficiency on this collection of math facts will permit the student to experience sufficient success on math class- and homework to discontinue the intervention.
Example for Setting Student Goals:
Acquisition Stage: Sight Words

4. **Set an Intervention Exit Goal.** Mrs. Stoddard sets the exit goal for Jeffrey that he will know all 30 of the target sight-words.
5. Decide on the Frequency and Session Length of the Intervention. The teacher decides how long each intervention session is to last and how many intervention sessions the student will receive per week. For students with mild academic deficits, intervention sessions can be as short as 20 minutes per day, 3 days per week. For students with greater deficits, intervention sessions may last 30-45 minutes per session and occur as often as 4-5 days per week.
Response to Intervention

Example for Setting Student Goals:

Acquisition Stage: Sight Words

Intervention

• Mrs. Stoddard chooses ‘incremental rehearsal’ (Burns, 2005) as an intervention for Jeffrey. This intervention helps students acquiring sight words, letter identification, math facts, or other fixed item sets.

Students start by reviewing a series of ‘known’ cards. Then the instructor adds ‘unknown’ items to the card pile one at a time, so that the student has a high ratio of known to unknown items. This strategy promotes near-errorless learning.

• Jeffrey receives this intervention daily, for 10 minutes.

• NOTE: A paraprofessional, adult volunteer, or other non-instructional personnel can be trained to deliver this intervention.

Example for Setting Student Goals:

Acquisition Stage: Sight Words

5. **Decide on the Frequency and Session Length of the Intervention.** The incremental rehearsal intervention to boost Jeffrey’s sight words will occur daily in 10-minute sessions.
When ACQUISITION is the Target: How to Set Individual Student Academic Goals

6. **Set a Timespan for the Intervention.** The teacher estimates the number of instructional weeks the intervention should be attempted and sets an end-date by which the student is predicted to attain success. An intervention that targets the student's acquisition of a specific set of academic items is typically of short duration: between 1 and 8 instructional weeks.
6. **Set a Timespan for the Intervention-Cont.** Predicting how long an acquisition intervention should last is more of an art than a science. The teacher must exercise professional judgment, selecting a timespan that is both ambitious and realistic.

The frequency and session length of a particular intervention will affect the timespan. For example, a student whose intervention is scheduled at a higher 'dosage' (e.g., daily for 40-minute sessions) can be expected to reach the exit goal faster than a similar student whose intervention is at a lower 'dosage' (e.g., 3 times per week for 20-minute sessions).
Example for Setting Student Goals:
Acquisition Stage: Sight Words

6. Set a Timespan for the Intervention. His teacher, Mrs. Stoddard, estimates that – if the intervention is successful – Jeffrey should master the remaining 24 sight-words from the original 30-word list within 4 instructional weeks.
When ACQUISITION is the Target: How to Set Individual Student Academic Goals

7. **Monitor the Student's Progress.** Throughout the intervention, the teacher can monitor the student's progress periodically (e.g., weekly or even more frequently) by having the student attempt all of the items in the item-pool and recording the results.

For example, the first-grade teacher whose intervention targets a student's letter-naming skills for mixed-case letters measures her student's progress by reviewing all 52 letter flash-cards once per week and, each time, tracking the number of letters that the student is able to name correctly within 3 seconds of being shown the flash-card.
When ACQUISITION is the Target: How to Set Individual Student Academic Goals

7. **Monitor the Student's Progress-Cont.** As a second example, the high school science teacher working with a student on acquiring 20 key biology terms and their definitions ends each intervention session by having the student attempt to define all terms, with each vocabulary word counted as correct if the student defines it correctly within 10 seconds.
Example for Setting Student Goals:
Acquisition Stage: Sight Words

7. **Monitor the Student’s Progress.** His teacher, Mrs. Stoddard, keeps a running ‘cumulative mastery’ log during each intervention session—recording each newly mastered word and the date of mastery. This cumulative log serves as her progress-monitoring data for the intervention.
Acquisition-Stage ACTIVITY: Develop Shared Mastery Criteria for a Selected Item Set

For each participant:

- Select one example of a fixed set of academic items that students whom you work with need to master: e.g., mixed-case letter ID; 50 most important biology vocabulary items; etc.
- For the sample fixed-item set that you select, write mastery criteria to indicate when a student has acquired (learned) an item from the set.

MASTERY CRITERIA EXAMPLE: "When shown a flash-card with an sight-word, Jeffrey will correctly name the word within 3 seconds. He will repeat this correct response at least twice without error for two sessions in a row."
Data Collection Challenge:

How does the teacher set academic fluency goals for a student receiving ‘off-level’ supplemental interventions?

pp. 7-10

AIMSweb Cut-Points: Using National Aggregate Sample

- **Low Risk:** At or above the 25th percentile: Core instruction alone is sufficient for the student.

- **Some Risk:** 10th to 24th percentile: Student will benefit from additional intervention, which may be provided by the classroom teacher or other provider (e.g., reading teacher).

- **At Risk:** Below 10th percentile: Student requires intensive intervention, which may be provided by the classroom teacher or other provider (e.g., reading teacher).
<table>
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<th>Grade</th>
<th>Percentile</th>
<th>Fall</th>
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<th>Spring</th>
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Source: AIMSweb® Growth Table Reading-Curriculum Based Measurement: Multi-Year Aggregate: 2006-2007 School Year
www.interventioncentral.org
How to Set a Goal for an ‘Off-Level’ Intervention

1. Comparing Student Performance to Benchmarks and Identifying Severe Discrepancies. The student is administered reading fluency probes equivalent to his or her current grade placement (during the Fall/Winter/Spring schoolwide screening) and the results are compared to peer norms. If the student falls significantly below the level of peers, he or she may need additional assessment to determine whether the student is to receive intervention and assessment ‘off grade level’.
In January, Mrs. Chandler, a 4th-grade teacher, receives her classwide reading fluency screening results. She notes that a student who has recently transferred to her classroom, Randy, performed at 35 Words Read Correct (WRC) on the 1-minute AIMSweb Grade 4 fluency probes.

Mrs. Chandler consults AIMSweb reading-fluency research norms and finds that a reasonable minimum reading rate for students by winter of grade 4 (25th percentile) is 89 WRC.
**Response to Intervention**

**Example of Progress-Monitoring**

**Off-Level: Randy**

<table>
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<td>StdDev</td>
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<td>40</td>
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</table>

**AIMSweb Norms:** ‘Typical’ reader (25th percentile) in Gr 4 at mid-year (winter norms): **89 WRC**

**Target Student Randy:** **35 WRC**

**Conclusion:** Randy’s grade-level performance is in the ‘frustration’ range.

He requires a Survey-Level Assessment to find his optimal ‘instructional’ level.

Source: AIMSweb® Growth Table Reading-Curriculum Based Measurement: Multi-Year Aggregate 2006-2007 School Year

www.interventioncentral.org
How to Set a Goal for an ‘Off-Level’ Intervention

2. Conducting a Survey Level Assessment (SLA). For students with large discrepancies when compared to benchmarks, the teacher conducts a SLA to determine the student’s optimal level for supplemental intervention and progress-monitoring.

- The teacher administers AIMSweb reading probes from successively earlier grade levels and compares the student’s performance to the benchmark norms for that grade level.
- The student’s ‘instructional’ level for intervention is the first grade level in which his reading-fluency rate falls at or above the 25th percentile according to the benchmark norms.
Example of Progress-Monitoring Off-Level: Randy

Because Randy’s reading fluency rate is so far below the grade-level norms (a gap of 54 WRC), his teacher decides to conduct a Survey Level Assessment to find the student’s optimal grade level placement for supplemental reading instruction.
## Example of Progress-Monitoring Off-Level: Randy

**AIMSweb® Growth Table**
Reading-Curriculum Based Measurement
Multi-Year Aggregate
2006-2007 School Year

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<thead>
<tr>
<th>Grade</th>
<th>Percentile</th>
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</tbody>
</table>

**Survey Level Assessment:** The teacher conducts a Survey Level Assessment with Randy, assessing him using CBM reading fluency probes from successively earlier grades until he performs at or above the 25th percentile according to the AIMSweb norms.

Source: AIMSweb® Growth Table Reading-Curriculum Based Measurement: Multi-Year Aggregate

[www.interventioncentral.org](http://www.interventioncentral.org)
Response to Intervention

Example of Progress-Monitoring Off-Level: Randy

AIMSweb® Growth Table
Reading-Curriculum Based Measurement
Multi-Year Aggregate
2006-2007 School Year

<table>
<thead>
<tr>
<th>Grade</th>
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<td></td>
<td>StdDev</td>
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</tbody>
</table>

On Grade 3-level probes, Randy attains a median score of **48 WRC**.

The AIMSweb winter norm (25th percentile) for a 3rd grade student is **69 WRC**.

The student is still in the ‘frustration’ range and the Survey Level Assessment continues.

Source: AIMSweb® Growth Table Reading-Curriculum Based Measurement: Multi-Year Aggregate
**Example of Progress-Monitoring Off-Level: Randy**

<table>
<thead>
<tr>
<th>Grade</th>
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<th>Fall</th>
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</tbody>
</table>

Source: AIMSweb® Growth Table Reading-Curriculum Based Measurement: Multi-Year Aggregate

On Grade 2-level probes, Randy attains a median score of 64 WRC.

The AIMSweb winter norm (25th percentile) for a 2nd grade student is 53 WRC.

The student is now in the ‘instructional’ range and the Survey Level Assessment ends.
3. **Selecting an ‘Off-Level’ Progress-Monitoring Goal.**

To set a progress-monitoring goal, the teacher looks up the benchmark WRC for the 50th percentile at the student’s off-level ‘instructional’ grade level previously determined through the Survey Level Assessment.
### Example of Progress-Monitoring Off-Level: Randy

**Response to Intervention**

**Goal-Setting.** To find the progress-monitoring goal for Randy, his teacher looks up the benchmark WRC for the 50th percentile at Grade 2 (his off-level grade level)—which is 79 WRC.

This becomes the progress-monitoring goal for the student.

**Source:** AIMSweb® Growth Table Reading-Curriculum Based Measurement: Multi-Year Aggregate

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AIMSweb® Growth Table
Reading-Curriculum Based Measurement
Multi-Year Aggregate
2006-2007 School Year

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentile</th>
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<th>Winter Num</th>
<th>Winter WRC</th>
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www.interventioncentral.org
How to Set a Goal for an ‘Off-Level’ Intervention

4. Translating the Progress-Monitoring Goal into Weekly Increments.

The teacher’s final task before starting the progress-monitoring is to translate the student’s ultimate intervention goal into ‘ambitious but realistic’ weekly increments.

One useful method for determining weekly growth rates is to start with research-derived growth norms and to then use a ‘multiplier’ to make the expected rate of weekly growth more ambitious.
How to Set a Goal for an ‘Off-Level’ Intervention

4. Translating the Progress-Monitoring Goal into Weekly Increments. (Cont.)

- The teacher first looks up the average rate of weekly student growth supplied in the research norms. (NOTE: If available, a good rule of thumb is to use the growth norms for the 50th percentile at the ‘off-level’ grade at which the student is receiving intervention and being monitored.)

- The teacher then multiplies this grade norm for weekly growth by a figure between 1.5 and 2.0 (Shapiro, 2008). Because the original weekly growth rate represents a typical rate student improvement, using this multiplier to increase the target student’s weekly growth estimate is intended accelerate learning and close the gap separating that student from peers.
Determining Weekly Rate of Improvement (ROI). Randy is to be monitored on intervention at grade 2. The teacher finds—according to AIMSweb norms—that a typical student in Grade 2 (at the 50th percentile) has a rate of improvement of 1.1 WRC per week.

She multiplies the 1.1 WRC figure by 1.8 (teacher judgment) to obtain a weekly growth goal for Randy of about 2.0 additional WRCs.
Randy’s ultimate goal is 79 WRC (the 50th percentile norm for grade 2).

During the Survey Level Assessment, Randy was found to read 64 WRC at the 2nd grade level.

There is a 15-WRC gap to be closed to get Randy to his goal.

At 2 additional WRC per week on intervention, Randy should close the gap within about 8 instructional weeks.
How to Set a Goal for an ‘Off-Level’ Intervention
5. Advancing the Student to Higher Grade Levels for Intervention and Progress-Monitoring

The teacher monitors the student’s growth in reading fluency at least once per week (twice per week is ideal).

When the student’s reading fluency exceeds the 50th percentile in Words Read Correct for his or her ‘off-level’ grade, the teacher reassesses the student’s reading fluency using AIMSweb materials at the next higher grade.

If the student performs at or above the 25th percentile on probes from that next grade level, the teacher advances the student and begins to monitor at the higher grade level.

The process repeats until the student eventually closes the gap with peers and is being monitored at grade of placement.
Example of Progress-Monitoring Off-Level: Randy

Advancing the Student to Higher Grade Levels (Cont.).

So Mrs. Chandler assesses Randy on AIMSweb reading fluency probes for Grade 3 and finds that he reads on average 72 WRC—exceeding the Grade 3 25th percentile cut-off of 69 WRC.

Therefore, Randy is advanced to Grade 3 progress-monitoring and his intervention materials are adjusted accordingly.

Source: AIMSweb® Growth Table Reading-Curriculum Based Measurement: Multi-Year Aggregate: 2006-2007 School Year

www.interventioncentral.org
Setting Individual RTI Academic Goals Using Research Norms for Students Receiving ‘Off-Level’ Interventions

1. Comparing Student Performance to Benchmarks and Flagging Extreme Discrepancies
2. Conducting a Survey Level Assessment (SLA).
4. Translating a Progress-Monitoring Goal into Weekly Increments.
5. Advancing the Student Who Makes Progress to Higher Grade Levels for Intervention and Progress-Monitoring.

Activity: Group Discussion

- Review the steps outlined in this workshop for setting goals for students on off-level interventions.
- Discuss how – and when – you might use this approach in your own school or district.
Data Collection Challenge:

What simple organizing tool can teachers use to help them to structure their data collection—to include baseline, goal, and progress-monitoring? pp. 25-29
The Structure of Data Collection

- Teachers can use a wide variety of methods to assess student academic performance or behavior.
- However, data collection should be structured to include these elements: baseline, the setting of a goal for improvement, and regular progress-monitoring.
- The structure of data collection can be thought of as a glass into which a wide variety of data can be ‘poured’.
Activity: Classroom Methods of Data Collection

1. Curriculum-Based Measurement
2. Global Skills Checklists
3. Rating Scales (Including Behavior Report Cards)
4. Academic Skills:
   - Cumulative Mastery Log
5. Work Products

www.interventioncentral.org
RTI Classroom Progress-Monitoring Worksheet

Student: __________________  Teacher: __________________  Classroom or Course: __________________

A. Identify the Student Problem: Describe in clear, specific terms the student’s academic or behavioral problem:

B. Select a Data Collection Method: Choose a method of data collection to measure whether the classroom intervention actually improves the identified student problem (e.g., curriculum-based measurement, etc.).

How frequently will this data be collected? ____________ times per ____________

C. Collect Data to Calculate Baseline: What method from the choices below will be used to estimate the student’s baseline (starting) performance? (NOTE: Generally, at least 3-6 baseline data points are recommended.)

☐ From a total of ______ observations, select the median value.
☐ From a total of ______ observations, calculate the mean value.

Baseline

<table>
<thead>
<tr>
<th>Date</th>
<th>Obsv.</th>
<th>Date</th>
<th>Obsv.</th>
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</table>

Baseline Performance: Based on the method selected above, it is calculated that the student’s baseline performance is:

D. Determine Intervention Timespan: The intervention will last ____________ instructional weeks and end on ____________.

E. Set a Performance Goal: What goal is the student expected to achieve if the intervention is successful? At the end of the intervention, it is predicted that the student will reach this performance goal:

F. Decide How Student Progress is to Be Summarized: Select a method for summarizing student progress (outcome) attained when the intervention ends. Student progress at the end of the intervention is to be summarized by:

☐ Selecting the median value from the final ______ data points (e.g., 3).
☐ Computing the mean value from the final ______ data points (e.g., 3).
☐ [For time-series graphs]: Calculating the value on the graph trend line at the point that it intersects the intervention end date.

G. Evaluate the Intervention Outcome: At the end of the intervention, compare student progress to goal. If actual progress meets or exceeds goal, the intervention is judged successful.

The student’s ACTUAL Progress (Step F) is:

The PERFORMANCE GOAL for improvement (Step E) is:

Progress-Monitoring

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<th>Obsv.</th>
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</thead>
</table>
Setting Up Effective Data Collection: Example

Example: Mrs. Braniff, a 3rd-grade teacher, decided to use a math time drill intervention to help her student Brian to increase his fluency with basic multiplication problems (0-9).

- To measure Brian’s progress on the intervention, Mrs. Braniff decided to use Curriculum-Based Measurement Math Computation worksheets (created on www.interventioncentral.org).
- She used the RTI Classroom Progress-Monitoring Worksheet to organize her data collection.
A. Identify the Student Problem: Describe in clear, specific terms the student academic or behavioral problem:

B. Select a Data Collection Method: Choose a method of data collection to measure whether the classroom intervention actually improves the identified student problem (e.g., curriculum-based measurement, etc.).

How frequently will this data be collected?: ________ times per __________
Student: Brian Jones  Teacher: Mrs. Braniff  Classroom or Course: Gr 3

A. Identify the Student Problem: Describe in clear, specific terms the student academic or behavioral problem:

   Need to Become Fluent in Multiplication Facts: 0 to 9

B. Select a Data Collection Method: Choose a method of data collection to measure whether the classroom intervention actually improves the identified student problem (e.g., curriculum-based measurement, etc.).

   Curriculum-Based Measurement: 2-Minute Timed Math Computation Probes

   How frequently will this data be collected?: 1 times per Week
C. Collect Data to Calculate Baseline: What method from the choices below will be used to estimate the student’s baseline (starting) performance? (NOTE: Generally, at least 3-5 baseline data points are recommended.)

- From a total of _____ observations, select the **median** value.
- From a total of _____ observations, calculate the **mean** value.
- Other: __________________________________

<table>
<thead>
<tr>
<th>Baseline</th>
<th>3. Date:<strong>/</strong>/___ Obsv:________</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Date:<strong>/</strong>/___ Obsv:________</td>
<td>4. Date:<strong>/</strong>/___ Obsv:________</td>
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<tr>
<td>2. Date:<strong>/</strong>/___ Obsv:________</td>
<td>5. Date:<strong>/</strong>/___ Obsv:________</td>
</tr>
</tbody>
</table>

Baseline Performance: Based on the method selected above, it is calculated that the student’s baseline performance is: ______________________________________
Baseline: Defining the Student Starting Point

• Baseline data provide the teacher with a snapshot of the student’s academic skills or behavior before the intervention begins.

• An estimate of baseline is essential in order to measure at the end of the intervention whether the student made significant progress.

• Three to five data-points are often recommended—because student behavior can be variable from day to day.
Baseline: Using the Median Score

If several data points are collected, the middle, or median, score can be used to estimate student performance. Selecting the median can be a good idea when student data is quite variable.

<table>
<thead>
<tr>
<th>Baseline</th>
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<tbody>
<tr>
<td>1. Date: 2/3/10 Obsv: 13</td>
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<td>3. Date: 2/6/10 Obsv: 11</td>
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<td>4. Date: Obsv:</td>
</tr>
<tr>
<td>5. Date: Obsv:</td>
</tr>
</tbody>
</table>
Baseline: Using the Mean Score

If several data points are collected, an average, or mean, score can be calculated by adding up all baseline data and dividing by the number of data points.

<table>
<thead>
<tr>
<th>Baseline</th>
<th>13+15+11=39</th>
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<tbody>
<tr>
<td>1. Date: <strong>2</strong>/<strong>3</strong>/<strong>10</strong> Obsv: <strong><strong>13</strong></strong></td>
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<td>2. Date: <strong>2</strong>/<strong>5</strong>/<strong>10</strong> Obsv: <strong><strong>15</strong></strong></td>
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<td>3. Date: <strong>2</strong>/<strong>6</strong>/<strong>10</strong> Obsv: <strong><strong>11</strong></strong></td>
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<tr>
<td>4. Date: _____/<strong><strong>/</strong></strong> Obsv: ____________</td>
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<tr>
<td>5. Date: _____/<strong><strong>/</strong></strong> Obsv: ____________</td>
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</tbody>
</table>

39 divided by 3 = 13

Mean = 13
C. Collect Data to Calculate Baseline: What method from the choices below will be used to estimate the student’s baseline (starting) performance? (NOTE: Generally, at least 3-5 baseline data points are recommended.)

- From a total of 3 observations, select the **median** value.
- From a total of ____ observations, calculate the **mean** value.

<table>
<thead>
<tr>
<th>Baseline</th>
<th>3. Date: <em>11</em>/ <em>21</em>/ <em>2011</em> Obsv: <em>34</em>_</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Date: <em>11</em>/ <em>14</em>/ <em>2011</em> Obsv: <em>31</em>_</td>
<td></td>
</tr>
<tr>
<td>2. Date: <em>11</em>/ <em>17</em>/ <em>2011</em> Obsv: <em>28</em>_</td>
<td></td>
</tr>
<tr>
<td>4. Date: ____/ ____/ ____ Obsv: _____</td>
<td></td>
</tr>
<tr>
<td>5. Date: ____/ ____/ ____ Obsv: _____</td>
<td></td>
</tr>
</tbody>
</table>

Baseline Performance: Based on the method selected above, it is calculated that the student's baseline performance is:

31 Correct Digits in 2 minutes
D. Determine Intervention Timespan: The intervention will last _____ instructional weeks and end on __/__/__.

E. Set a Performance Goal: What goal is the student expected to achieve if the intervention is successful?
   At the end of the intervention, it is predicted that the student will reach this performance goal:

F. Decide How Student Progress is to Be Summarized: Select a method for summarizing student progress (‘outcome’) attained when the intervention ends. **Student progress at the end of the intervention is to be summarized by:**
   - Selecting the **median** value from the final ____ data-points (e.g., 3).
   - Computing the **mean** value from the final ____ data-points (e.g., 3).
   - [For time-series graphs]: Calculating the **value on the graph trend line** at the point that it intersects the intervention end date.

G. Evaluate the Intervention Outcome:
   At the end of the intervention, compare student progress to goal. If **actual progress** meets or exceeds **goal**, the intervention is judged successful.

<table>
<thead>
<tr>
<th>Progress-Monitoring</th>
<th>5. Date: <strong>/</strong>/__ Obsv: ____________</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Date: <strong>/</strong>/__ Obsv: ____________</td>
<td>6. Date: <strong>/</strong>/__ Obsv: ____________</td>
</tr>
<tr>
<td>2. Date: <strong>/</strong>/__ Obsv: ____________</td>
<td>7. Date: <strong>/</strong>/__ Obsv: ____________</td>
</tr>
<tr>
<td>3. Date: <strong>/</strong>/__ Obsv: ____________</td>
<td>8. Date: <strong>/</strong>/__ Obsv: ____________</td>
</tr>
<tr>
<td>4. Date: <strong>/</strong>/__ Obsv: ____________</td>
<td>9. Date: <strong>/</strong>/__ Obsv: ____________</td>
</tr>
</tbody>
</table>
Intervention ‘Timespan’: How Long is Long Enough?

Any intervention should be allowed sufficient time to demonstrate whether it is effective. The limitation on how quickly an intervention can be determined to be ‘effective’ is usually the sensitivity of the measurement tools. As a rule, behavioral interventions tend to show effects more quickly than academic interventions—because academic skills take time to increase, while behavioral change can be quite rapid.

A good rule of thumb for classroom interventions is to allow 4-8 instructional weeks to judge the intervention.
Performance Goal

The outcome goal for an intervention can be estimated in several ways:

- If there are research academic norms or local norms available (e.g., DIBELS), these can be useful to set a goal criterion.
- The teacher can screen a classroom to determine average performance.
- The teacher can select 3-4 ‘typical’ students in the class, administer an academic measure (e.g., curriculum-based measurement writing) to calculate a ‘micro-norm’.
- The teacher can rely on ‘expert opinion’ of what is a typical level of student performance.
E. Set a Performance Goal: What goal is the student expected to achieve if the intervention is successful?

At the end of the intervention, it is predicted that the student will reach this performance goal:

____ 40 Correct Digits in 2 minutes
F. Decide How Student Progress is to Be Summarized: Select a method for summarizing student progress (‘outcome’) attained when the intervention ends. *Student progress at the end of the intervention is to be summarized by:*

- Selecting the **median** value from the final ____ data-points (e.g., 3).
- Computing the **mean** value from the final ____ data-points (e.g., 3).
- [For time-series graphs]: Calculating the **value on the graph trend line** at the point that it intercepts the intervention end date.
F. Decide How Student Progress is to Be Summarized: Select a method for summarizing student progress (‘outcome’) attained when the intervention ends. Student progress at the end of the intervention is to be summarized by:

- Selecting the **median** value from the final ___ data-points (e.g., 3).
- Computing the **mean** value from the final 2 data-points (e.g., 3).
- [For time-series graphs]: Calculating the **value on the graph trend line** at the point that it intercepts the intervention end date.
G. Evaluate the Intervention Outcome:

At the end of the intervention, compare student progress to goal. If actual progress meets or exceeds goal, the intervention is judged successful.

<table>
<thead>
<tr>
<th>The student’s ACTUAL Progress (Step F) is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The PERFORMANCE GOAL for improvement (Step E) is:</td>
</tr>
<tr>
<td>Progress-Monitoring</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>1. Date: <em>12</em>/ <em>02</em>/ 2011 Obsv: <em>29</em>__</td>
</tr>
<tr>
<td>2. Date: <em>12</em>/ <em>09</em>/ 2011 Obsv: <em>34</em>__</td>
</tr>
<tr>
<td>3. Date: <em>12</em>/ <em>16</em>/ 2011 Obsv: <em>35</em>__</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
G. Evaluate the Intervention Outcome:
At the end of the intervention, compare student progress to goal. If **actual progress** meets or exceeds **goal**, the intervention is judged successful.

<table>
<thead>
<tr>
<th>The student’s ACTUAL Progress (Step F) is:</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>The PERFORMANCE GOAL for improvement (Step E) is:</td>
<td>40</td>
</tr>
</tbody>
</table>
Structuring Teacher Data Collection

At your table:

• Review the RTI Classroom Progress-Monitoring Worksheet form (pp. 25-29).

• Discuss how you might use this form to help your school to better structure classroom data collection and to interpret data collected.
Planning Activity Report Out Procedures

• Review your table number.

• Select 1-2 members of your table to visit another table as ‘ambassadors’ for the report-out part of the activity.

• For this report-out, your ambassadors will visit the following table: Your table number +1.
Workshop Agenda: ‘Data Challenges’

- What are classroom-friendly ways to collect data to assess student academic performance that can demonstrate mastery of Common Core State Standards?

- How can teachers estimate ‘typical peer academic performance’ when attempting to set progress-monitoring goals for struggling students?

- When skill ACQUISITION is the target, how does a teacher set a clear student intervention goal?

- How does the teacher set academic fluency goals for a student receiving ‘off-level’ supplemental interventions?

- What simple organizing tool can teachers use to help them to structure their data collection—to include baseline, goal, and progress-monitoring?
Supporting RTI and the Common Core: How to Collect Data in the Classroom

In your teams:

• Review the resources and ideas shared at this workshop.

• Decide on 2-3 key ‘next steps’ that you plan to take to apply workshop content in your classroom or school.