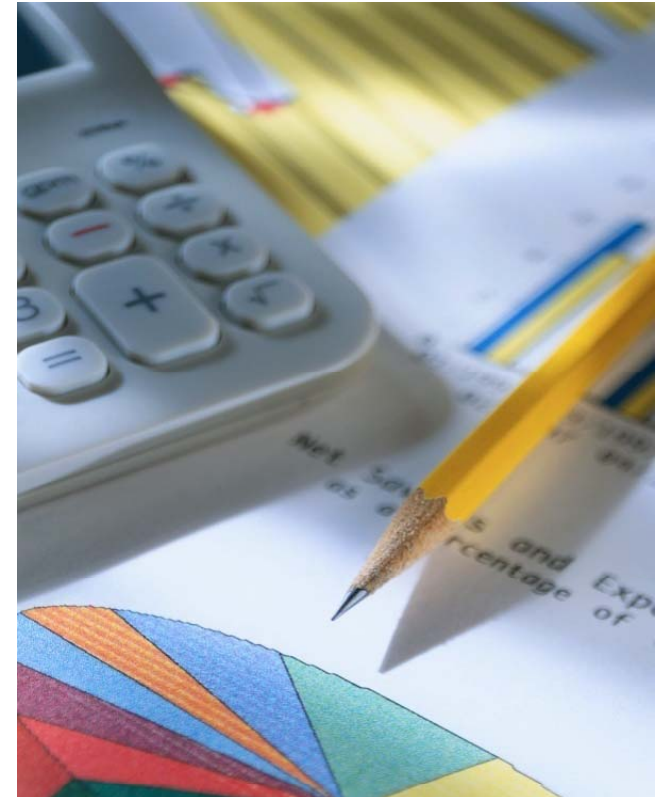# RTI: Schoolwide Screening Tools & Classroom Data Collection

Jim Wright
www.interventioncentral.org

INTERVENTION CENTRAL

Classroom Data Collection

Collecting Classroom Data: What are examples of data collection in the classroom that can measure progress on academic and behavioral goals?

Data and Schools: 4 Principles

- "**Assessment:** Create rigorous interim assessments that provide meaningful data."

- "**Analysis:** Examine the results of assessments to identify the causes of both strengths and shortcomings."

- "**Action:** Teach effectively what students most need to learn."

- "**Culture:** Create an environment in which data-driven instruction can survive and thrive."

Source: Bambrick-Santoyo, P. (2010). *Driven by data: A practical guide to improve instruction.* San Francisco, CA: Jossey-Bass. p. xxvi.

Types of Data That Drive Teaching

- "**On-the-spot assessments:** teachers check for understanding minute-by-minute, day-by-day."

- "**Interim assessments:** more formal testing, usually quarterly, to check for student proficiency."

- "**Summative assessments:** unit tests, grades, and high-stakes state tests."

Review of Selected Methods of Classroom Data Collection

1. Behavior Report Card

2. Academic Survival Skills Checklist

3. Curriculum-Based Measurement

Interventions: The Essential Data Elements

1. **Clear problem definition:** 'If you can't name it, you can't measure it.'

2. **Baseline data:** 'If you don't know the student's starting point, you can't know if that student has made progress with the intervention.'

3. **Intervention outcome goal:** 'If you have no exit goal, you cannot judge if the intervention is successful—no matter how much data you collect.'

4. **Progress-monitoring plan:** 'If you don't actually collect the data, you are blind about the intervention outcome.'

Source: Witt, J. C., VanDerHeyden, A. M., & Gilbertson, D. (2004). Troubleshooting behavioral interventions. A systematic process for finding and eliminating problems. *School Psychology Review, 33*, 363-383.

RTI: Data-Informed Intervention

Teacher-Friendly Data Collection Method:

Behavior Report Card

The Problem That This Tool Addresses:
Behavior Report Card

Most traditional methods of behavioral data collection are time-consuming to collect and difficult to juggle for a classroom teacher.

What is needed is a simple behavior-collection method that can be completed quickly and on a daily basis.

Behavior Report Card: What It Is…

- A behavior report card is a customized *rating scale* created by the teacher to rate various target student behaviors on a daily basis.

- If a teacher can describe and observe a student behavior, it can be tracked using a behavior report card.

- Examples of behaviors to track using a behavior report card include: Hyperactivity, work completion, organizational skills, and compliance with teacher requests.

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.

Behavior Report Card

www.intervention...

Example: Daily R...

Jim's Report Card

Student Name: _Brian_____   Date: _____

Rater: _Mr. Wright_____   Classroom: _Classroom 345_____

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

☹   😐   ☺

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

Behavior Report Card: Example

Background: All of the teachers on an instructional team are concerned about problem behaviors of one of their students, Brian.

Define the Problem: The team agrees that Brian has difficulties with inattention, incomplete work, and occasional non-compliance.

Decide How to Collect Data: The team chooses a Behavior Report Card to monitor Brian's behaviors, to include these 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 item is rated using a 1-9 scale.

Behavior Report Card: Example

Baseline Measure: Each member of the instructional team tracks Brian in their classroom for 3 successive days using the behavior report card. (Completing a BRC takes only a few seconds per day.)

On average, Brian scores no higher than 3 ('Never/Seldom' range) on all rating items in all classrooms during this baseline phase.

Intervention Outcome Goal: The team sets as an intervention goal that, by the end of a 6-week intervention to be used in all classrooms, Brian will be rated in the 7-9 range ('Most/All of the Time') in all classrooms.

Behavior Report Card Maker

Behavior Report Card
Maker
www.interventioncentral.org

If you have any suggestions or comments about this tool, please mail me.

Roy's Report Card

Switch to Expert Mode

Save   Save as...   Start New Report Card

Step 1

Enter the basic form information

Behavior Report Cards are customized behavior rating forms that educators can use to evaluate the student's global behaviors on a daily basis or even more frequently. Use this application to create your own Behavior Report Card with rating items unique to the student that you are rating. Complete the fields below as the first step in creating your Behavior Report Card.

Report card title ⓘ
Roy's Behavior Report Card

Person to fill out the report card ⓘ
Mr. Wright

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.

Student's classroom ⓘ
Room 345

Student's first and last name ⓘ
Roy   Atkins

Gender ⓘ male ▼

Font family ⓘ san serif ▼   **Font size** ⓘ 10 pt ▼

☑ **Append signature section** ⓘ

Instructions for report card signer ⓘ
I have reviewed this completed Behavior Report with my child.

Person to sign the report card ⓘ
Parent

Previous   Next

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

Grades 9–10 students:

Comprehension and Collaboration

1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grades 9–10 topics, texts, and issues,* building on others' ideas and expressing their own clearly and persuasively.

   a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.

   b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.

   c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.

   d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

2

RTI: Data-Informed Intervention

Teacher-Friendly Data Collection Method:

Academic Survival Skills Checklist

2

The Problem That This Tool Addresses:
Academic Survival Skills Checklist

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.

Source: DiPerna, J. C. (2006). Academic enablers and student achievement: Implications for assessment and intervention services in the schools. Psychology in the Schools, 43, 7-17.

Academic Survival Skills Checklist: What It Is…

- 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. 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.

Academic Survival Skills Checklist: Study Skills Example

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

Source: Academic Survival Skills Checklist Maker. (2012). Retrieved from http://www.interventioncentral.org/tools/academic-survival-skills-checklist-maker

Academic Survival Skills Checklist: Study Skills Example

STUDY SKILLS CHECKLIST

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).

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.

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.

Source: Academic Survival Skills Checklist Maker. (2012). Retrieved from http://www.interventioncentral.org/tools/academic-survival-skills-checklist-maker

Academic Survival Skills Checklist: Study Skills Example

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.

Source: Academic Survival Skills Checklist Maker. (2012). Retrieved from http://www.interventioncentral.org/tools/academic-survival-skills-checklist-maker

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 NEEED. Approach the teacher or tutor for help as needed to answer questions or clear up areas of confusion identified during study sessions.

Source: Academic Survival Skills Checklist Maker. (2012). Retrieved from http://www.interventioncentral.org/tools/academic-survival-skills-checklist-maker

Academic Survival Skills Checklist: Study Skills Example

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.

Source: Academic Survival Skills Checklist Maker. (2012). Retrieved from http://www.interventioncentral.org/tools/academic-survival-skills-checklist-maker

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.

1

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.

2

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.

3

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.

4

Academic Survival Skills Checklists: 5 Uses

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.

5

Academic Survival Skills Checklist: Example

Background: A math instructor, Mr. Haverneck, is concerned that a student, Rodney, appears to be disorganized in class.

Define the Problem: Mr. Haverneck defines the problem as 'poor organizational skills' and breaks down this global skill area into its components by using a 9-item Academic Survival Skills Checklist in organizational skills.

Academic Survival Skills Checklist: Example

Decide How to Collect Data: Mr. Haverneck decides to use the checklist to verify (through direct observation and student interview) those sub-skills that the student does or does not dsplay.

Baseline Measure: Mr. Havernick monitors the student's compliance with elements of this organization -skills checklist across three days of math class. On average, Rodney successfully carries out only 4 of the 9 possible subskills.

Intervention Outcome Goal: Mr. Havernick sets the goal that by the last week of a 5-week intervention, the student will be found to use all 9 of the subskills on at least 4 out of 5 days.

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

Global checklists do not measure the Standards directly but are well-suited for:

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

Checklists in general are useful for:

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

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.

RTI: Data-Informed Intervention

3

Teacher-Friendly Data Collection Method:

Curriculum-Based Measurement

3

The Problem That This Tool Addresses:
Curriculum-Based Measurement

Often, measures of student academic performance are global (e.g., 'reading skill') and do not give good information about important component skills (e.g., 'reading fluency').

Also, traditional academic measures can be time-consuming to administer.

Curriculum-Based Measurement: What It Is…

- Curriculum-Based Measurement (CBM) is a family of brief, timed measures that assess basic academic skills. CBMs have been developed to assess a considerable number of academic competencies, including oral reading fluency, reading comprehension, math computation, and written expression.

  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.

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

Source: Hosp, M.K., Hosp, J. L., & Howell, K. W. (2007). *The ABCs of CBM.* New York: Guilford.

Curriculum-Based Measurement: Example

Background: Mr. Jackson, an 8th-grade teacher, is concerned about his student Andy's slow performance on multiplication math facts.

Define the Problem: Andy is accurate with his math facts but lacks fluency in retrieving those facts from memory.

Decide How to Collect Data: Mr. Jackson decides to track Andy's math computation performance using CBM math computation probes (single-skill probe; multiplication facts from 0 to 12).

He creates those probes using the Math Worksheet Generator on Intervention Central (www.interventioncentral.org).

Curriculum-Based Measurement: Example

Baseline Measure: Before starting a fluency intervention, Mr. Jackson administers the CBM math multiplication-fact probes on three successive days to Andy.

He uses the median, or middle, score from these three assessments as baseline—finding that the student is able to compute an average of 20 correct digits in two minutes.

Intervention Outcome Goal: Mr. Jackson sets as a goal that Andy will 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.

CBM and the Standards

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.)

Classroom Data Collection

CBM: Examples: What are some examples of Curriculum-Based Measurement?

Curriculum-Based Measurement		Academic Skill Area Assessed
Letter Sound Fluency/Letter Name Fluency	>	Alphabetics/Phonics
Oral Reading Fluency	>	Reading Speed; Comprehension (through Grade 3)
Maze Passage	>	Reading Comprehension
Early Math Fluency: Quantity Discrimination, Missing Number, Number Identification	>	Number Sense
Computation Fluency	>	Math Fact Fluency
Written Expression	>	Writing: Mechanics & Conventions

CBM Letter Knowledge: Letter Name Fluency (LNF) & Letter Sound Fluency (LSF)

- *CBM-Letter Name Fluency (LNF).* The student is given a random list of upper- and lower-case letters and has 1 minute to identify the names of as many letters as possible.

- *CBM-Letter Sound Fluency (LSF).* The student is given a random list of upper- and lower-case letters and has 1 minute to identify as many letter sounds as possible.

Curriculum-Based Measurement: *Letter Naming Fluency: Examiner Copy*   #/Correct:_____   #/Errors:_____

Student Name:_____   Classroom:_____   Date:_____

X	E	G	T	F	A	q	o	Y	I	J	/11(11)
j	D	i	l	u	k	v	d	L	z	s	/11(22)
H	e	a	M	f	S	C	K	w	R	c	/11(33)
B	g	b	t	W	U	P	r	y	V	x	/11(44)
Z	m	N	n	h	p	O	Q	N	i	X	/11(55)
P	u	b	F	m	z	q	H	j	B	E	/11(66)
G	f	o	W	Y	A	c	K	k	C	O	/11(77)
t	s	Z	Q	p	I	n	r	g	x	J	/11(88)
v	h	M	U	V	I	y	T	R	a	L	/11(99)
S	d	D	w	e	J	N	v	T	w	A	/11(110)

CBM-Letter Name Fluency/ Letter Sound Fluency Sample Probe

Source: Letter Naming Fluency Generator. Available at http://www.interventioncentral.org/teacher-resources/letter-name-fluency-generator

CBM Oral Reading Fluency (ORF)

- The curriculum-based measure to track student reading speed is termed Oral Reading Fluency (ORF). The student is given a grade-appropriate passage and asked to read aloud for 1 minute. The examiner marks as incorrect any words that the student misreads or hesitates on for 3 seconds or longer. The passage is then scored for Correctly Read Words (CRW).

CBM-Oral Reading Fluency: ORF

Curriculum-Based Measurement: *Oral Reading Fluency Passage: Examiner Copy*

Assessment Date:_____/_____/_____ Student:_____ Examiner:_____

Words Read Correctly (WRC): _____ Errors: _____ Notes: _____

Jellyfish Are Efficient Predators

NY Times

For animals that drift through the sea without the benefit of eyesight, jellyfish	13
have managed to survive remarkably well. In fact, in areas where overfishing	25
and habitat destruction have reduced fish populations, jellyfish are now	35
becoming the dominant predators.	39
It turns out that jellyfish, despite their sluggish looks, are just as effective at	53
hunting and catching meals as their competitors with fins. They may not move	66
as quickly, but in a study published in the journal Science, researchers found	79
that many jellyfish use their body size to increase their hunting success. With	92
their large, watery bodies and long tentacles, they conserve energy by letting	104
currents guide them into their prey, said José Luis Acuña, an author of the	118
paper and a biologist at the University of Oviedo in Spain.	129
"To our surprise, jellyfish were as good predators as visually predating fish in	142
spite of being slow and blind, because they play an entirely different	154
hydromechanical trick," he said in an e-mail.	163

Source: Reading Fluency Passages Generator. Available at http://www.interventioncentral.org/teacher-resources/oral-reading-fluency-passages-generator

CBM Maze (Reading Comprehension)

- CBM-Maze is a tool ideally suited to assess student reading comprehension (Parker, Hasbrouck, & Tindal, 1992).

  The first sentence of the Maze passage is left intact. In the remainder of the passage, every seventh word is selected to be incorporated into a response item that consists of the original word plus two foils (words that would not make sense if substituted in the passage in place of the original, correct word). These three choices are randomly arranged and inserted back into the text. When reading the Maze passage, the reader reviews each response item and circles the word from the three choices that best restores the meaning of that segment of the passage.

CBM-Maze: Reading Comprehension

Curriculum-Based Measurement: *Maze Passage: Student Copy*   #/Correct: _____ #/Errors: _____

Student Name: _____ Classroom: _____ Date: _____

Jellyfish Are Efficient Predators

NY Times

For animals that drift through the sea without the benefit of eyesight, jellyfish have managed to survive remarkably well. In fact, in areas where overfishing (**survive, and, play**) habitat destruction have reduced fish populations, (**fact, their, jellyfish**) are now becoming the dominant predators.

(**It, Reduced, Remarkably**) turns out that jellyfish, despite their (**becoming, sluggish, the**) looks, are just as effective at (**hunting, slow, managed**) and catching meals as their competitors (**and, with, catching**) fins. They may not move as (**quickly, study, sluggish**), but in a study published in (**the, predating, may**) journal Science, researchers found that many (**competitors, not, jellyfish**) use their body size to increase (**their, with, letting**) hunting success. With their large, watery (**bodies, just, without**) and long tentacles, they conserve energy (**by, prey, good**) letting currents guide them into their (**prey, looks, entirely**), said José Luis Acuña, an author (**bodies, trick, of**) the paper and a biologist at (**them, e-mail, the**) University of Oviedo in Spain.

"To (**our, they, to**) surprise, jellyfish were as good predators (**as, spite, because**) visually predating fish in spite of (**benefit, the, being**) slow and blind, because they play (**an, as, and**) entirely different hydromechanical trick," he said (**different, in, destruction**) an e-mail.

Source: Maze Passages Generator. Available at http://www.interventioncentral.org/teacher-resources/test-of-reading-comprehension

" *"…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)

CBM Early Math Fluency: Quantity Discrimination, Missing Number & Number Identification

- *CBM-Quantity Discrimination:* The student is presented with pairs of numbers randomly sampled from 1-20 and must identify the larger number in each pair.

Sources: Clarke, B., & Shinn, M. (2004). A preliminary investigation into the identification and development of early mathematics curriculum-based measurement. School Psychology Review, 33, 234–248.

Chard, D. J., Clarke, B., Baker, S., Otterstedt, J., Braun, D., & Katz, R. (2005). Using measures of number sense to screen for difficulties in mathematics: Preliminary findings. Assessment For Effective Intervention, 30(2), 3-14

CBM Early Math Fluency: Quantity Discrimination, Missing Number & Number Identification

- *CBM-Missing Number:* The student is presented with response items consisting of 3 sequential numbers with one of those numbers randomly left blank. (Each 3-number series is randomly generated from the pool of numbers 1-20.) The student attempts to name the missing number in

14	__	16	17

Sources: Clarke, B., & Shinn, M. (2004). A preliminary investigation into the identification and development of early mathematics curriculum-based measurement. School Psychology Review, 33, 234–248.

Chard, D. J., Clarke, B., Baker, S., Otterstedt, J., Braun, D., & Katz, R. (2005). Using measures of number sense to screen for difficulties in mathematics: Preliminary findings. Assessment For Effective Intervention, 30(2), 3-14

CBM Early Math Fluency: Quantity Discrimination, Missing Number & Number Identification

- *CBM-Number Identification*: The student is presented with a randomly generated series of numbers ranging from 1-20 and names as many of those numbers aloud as time allows.

4	11	15	9	13	12	3	18
10	5	7	6	16	1	2	20

Sources: Clarke, B., & Shinn, M. (2004). A preliminary investigation into the identification and development of early mathematics curriculum-based measurement. School Psychology Review, 33, 234–248.

Chard, D. J., Clarke, B., Baker, S., Otterstedt, J., Braun, D., & Katz, R. (2005). Using measures of number sense to screen for difficulties in mathematics: Preliminary findings. Assessment For Effective Intervention, 30(2), 3-14

CBM-Computation Fluency

- CBM-Computation Fluency measures a student's accuracy and speed in completing 'math facts' using the basic number operations of addition, subtraction, multiplication, and division.

- CBM-Computation Fluency probes are 2-minute assessments of basic math facts that are scored for number of 'correct digits'.

- Computation fluency in the elementary grades is a strong predictor of later success in higher-level math coursework (Gersten, Jordan, & Flojo, 2005).

CBM-Computation Fluency

Curriculum-Based Assessment Mathematics
Single-Skill Computation Probe: Examiner Copy

ADDITION: Two 2-digit numbers: No regrouping

Item 1:
2 CD/2 CD Total

$$11 \\ +78 \\ \overline{89}$$

Item 2:
2 CD/4 CD Total

$$18 \\ +10 \\ \overline{28}$$

Item 3:
2 CD/6 CD Total

$$62 \\ +17 \\ \overline{79}$$

Item 5:
2 CD/10 CD Total

$$40 \\ +33 \\ \overline{73}$$

Item 6:
2 CD/12 CD Total

$$42 \\ +42 \\ \overline{84}$$

Item 7:
2 CD/14 CD Total

$$35 \\ +42 \\ \overline{77}$$

Source: Computation Fluency Generator. Available at http://www.interventioncentral.org/teacher-resources/math-work-sheet-generator

CBM-Written Expression

- Curriculum-Based Measurement-Written Expression (CBM-WE) is an efficient, reliable method of formative student assessment that yields numeric indicators that are instructionally useful: total words written, correctly spelled words, and correct writing sequences (Gansle et al., 2006).

- CBM-WE probes are group-administered writing samples with an administration time of about 4 minutes. CBM-Written Expression is therefore a powerful means to monitor a student's progress in the mechanics and conventions of writing.

CBM-Written Expression: Story Starter

Curriculum-Based Measurement: *Written Expression Probe*

Grade 4: CBM Writing Probe

Student Name:_____ Classroom:_____ Date:_____

When the snow storm began, the lights went out just before...

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Total Words: _____   Correctly Spelled Words: _____   Correct Writing Sequence: ___

Writing Probe Generator

Create a probe to assess the mechanics and conventions of student writing.

URL: http://www.interventioncentral.org/tools/writing-probe-generator

Curriculum-Based Measurement		Academic Skill Area Assessed
Letter Sound Fluency/Letter Name Fluency	>	Alphabetics/Phonics
Oral Reading Fluency	>	Reading Speed; Comprehension (through Grade 3)
Maze Passage	>	Reading Comprehension
Early Math Fluency: Quantity Discrimination, Missing Number, Number Identification	>	Number Sense
Computation Fluency	>	Math Fact Fluency
Written Expression	>	Writing: Mechanics & Conventions

RTI: Schoolwide Screening Tools

School-Wide Screenings: What is the purpose of school-wide screenings and how should they be conducted?

Building-Wide Screening: Assessing All Students
(Stewart & Silberglit, 2008)

Screening data in basic academic skills are collected at least 3 times per year (fall, winter, spring) from all students.

- Schools should consider using 'curriculum-linked' measures such as Curriculum-Based Measurement that will show generalized student growth in response to learning.

- If possible, schools should consider avoiding 'curriculum-locked' measures that are tied to a single commercial instructional program.

Source: Stewart, L. H. & Silberglit, B. (2008). Best practices in developing academic local norms. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (pp. 225-242). Bethesda, MD: National Association of School Psychologists.

Building-Wide Screening: Using a Wide Variety of Data
(Stewart & Silberglit, 2008)

Screenings can be compiled using:

- Fluency measures such as Curriculum-Based Measurement (e.g., AIMSweb, DIBELS, EasyCBM)

- Existing data, such as office disciplinary referrals.

- Computer-delivered assessments, e.g., Measures of Academic Progress (MAP) from www.nwea.org

Source: Stewart, L. H. & Silberglit, B. (2008). Best practices in developing academic local norms. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (pp. 225-242). Bethesda, MD: National Association of School Psychologists.

Applications of Screening Data (Stewart & Silberglit, 2008)

Screening data can be used to:

- Evaluate and improve the current core instructional program.

- Allocate resources to classrooms, grades, and buildings where student academic needs are greatest.

- Guide the creation of targeted Tier 2/3 (supplemental intervention) groups.

- Set academic goals for improvement for students on Tier 2 and Tier 3 interventions.

Source: Stewart, L. H. & Silberglit, B. (2008). Best practices in developing academic local norms. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (pp. 225-242). Bethesda, MD: National Association of School Psychologists.

Clearinghouse for RTI Screening and Progress-Monitoring Tools

- The National Center on RTI (www.rti4success.org) maintains pages rating the technical adequacy of RTI screening and progress-monitoring tools.

- Schools should strongly consider selecting screening tools that have national norms or benchmarks to help them to assess the academic-risk level of their students.

Tools ▽ △	Area ▽ △	Reliability of the Performance Level Score ▽ △	Reliability of the Slope ▽ △	Validity of the Performance Level Score ▽ △	Predictive Validity of the Slope of Improvement ▽ △	Alternate Forms ▽ △	Sensitive to Student Improvement ▽ △	End-of-Year Benchmarks ▽ △	Rates of Improvement Specified ▽ △	Norms Disaggregated for Diverse Populations ▽ △	Disaggregated Reliability and Validity Data ▽ △	COMPARE / RESET
AIMSweb	Math	●	●	●	●	◑	◑	●	●	No	●	☐
AIMSweb	Oral Reading	●	●	●	●	●	◑	●	●	No	●	☐
AIMSweb	Test of Early Literacy - Letter Naming Fluency	●	●	●	●	●	◑	●	●	No	●	☐
AIMSweb	Test of Early Literacy - Letter Sound Fluency	●	●	●	●	●	◑	●	●	No	●	☐

Big Ideas in Reading

1. "Phonemic Awareness: The ability to hear and manipulate sounds in words.

2. Alphabetic Principle: The ability to associate sounds with letters and use these sounds to form words.

3. Fluency with Text: The effortless, automatic ability to read words in connected text.

4. Vocabulary: The ability to understand (receptive) and use (expressive) words to acquire and convey meaning.

5. Comprehension: The complex cognitive process involving the intentional interaction between reader and text to convey meaning."

Source: Big ideas in beginning reading. University of Oregon. Retrieved September 23, 2007, from
http://reading.uoregon.edu/index.php

Selecting Performance 'Cut-Points' for Tier 2/3 Services: Example using EasyCBM Norms

RTI Tiers

1

2

3

51 WPM — 20%ile

31 WPM — 10%ile

Grade 3 Reading Measures			
Percentile	Passage Reading Fluency		
	Fall	Wint	Sprg
10th	31	64	60
20th	51	81	81
50th	83	114	115
75th	108	147	144
90th	138	173	173

Source: EasyCBM: (2010). *Interpreting the EasyCBM progress monitoring test results.* Retrieved February 22, 2011, from http://www.easycbm.com/static/files/pdfs/info/ProgMonScoreInterpretation.pdf

Evaluating Student Performance: What Are the Relative Advantages of National vs. Local Screening Norms?

- National Norms: Provide a general estimate of the expected academic performance of a 'typical' student that can be applied across many academic settings. However, these norms may not be representative of student performance at a particular school.

- Local Norms: Provide an estimate of typical performance of students within a particular school's population. This provides insight into current levels of student achievement and the effectiveness of instruction in that building. However, these results cannot easily be applied to other dissimilar academic settings.

RTI: Schoolwide Screening Tools

Next Steps. What are the recommended 'next steps' for this module?

Schoolwide Screeners: Recommended Next Steps…

1. *Match Screening Tools to Student Demographics.* Analyze your student demographics and academic performance and select academic screeners matched to those demographics.

2. *Pilot Screening Tools.* Consider piloting new screening tools (e.g., at single grade levels or in selected classrooms) before rolling out through all grade levels.

3. *Use High-Quality Screeners.* Adopt screening tools found by the National Center on RTI to have 'technical adequacy'.

Intervention Central
5-Minute 'Count Down' Timer

05:00

www.interventioncentral.org

Handout: Next Steps: p. 35

- In your groups, discuss the content and recommendations for 'next steps' presented in this portion of the workshop.

- Jot down any immediate next steps that you think are important to prepare to support your schools in RTI.

...eners are essential to RTI. They allow schools to conduct ...ectiveness of their core instruction as well as to proactively ...e students into supplemental interventions.

Who in your CAST network of schools will you need to enlist to help you with this goal?:

3. _____

4. _____

What resources will you need beyond those supplied in this training to accomplish the goal?

3. _____

4. _____

_____

_____

70