Informal Academic Diagnostic Assessment: Using Data to Guide Intensive Instruction

Part 1: Administering Academic Progress Monitoring Measures

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These slides are based on materials developed by the National Center on Student Progress Monitoring.

Introduction to Part 1 of the module: *This section is part 1 of the larger module, "Informal Academic Diagnostic Assessment: Using Data to Guide Intensive Instruction." The following slides are intended to provide participants with an illustration of common general outcome measures (GOM) used for progress monitoring. Not all participants will need to go through this set of slides if they already use these progress monitoring measures. However, for participants new to this type of progress monitoring, we strongly recommend reviewing this section before moving on to other sections in the module.*
The module is part of a series of training modules on Data-Based Individualization developed by the National Center on Intensive Intervention (NCII) and is aimed at district or school teams involved in initial planning for using DBI as a framework for providing intensive intervention in academics and behavior. The audience for this module may include the academic or behavior interventionists, special educators, school psychologists, counselors, and administrators, as appropriate. Before viewing

this module, teams should be familiar with the content in the first four modules. For more information about these modules, please visit the DBI Training Series page on NCII's website at: http://www.intensiveintervention.org/content/dbi-training-series.

Speaker notes for Title Slide:

Welcome participants to the training on Administering Academic Progress Monitoring Measures. Introduce yourself (or selves) as the facilitator(s) and briefly cite your professional experience with regard to intensive intervention and DBI. Explain that this section provides an illustration of common general outcome measures (GOMs) used for progress monitoring in both reading and mathematics.

Instructions for using the speaker notes
- Text formatted in standard font is intended to be read aloud or paraphrased by the facilitator.
- Text formatted in **bold** is excerpted directly from the presentation slides.
- Text formatted in *italics* is intended as directions or notes for the facilitator; italicized text is not meant to be read aloud.
- Text formatted in <u>underline</u> indicates an appropriate time to click to bring up the next stage of animation in an animated slide.

A note about materials:
This presentation includes a number of handouts and supplemental resources. Please be sure to have the following handouts available during this training:
- *Progress Monitoring Handouts*
- *Computation Scoring Rules*

Explain to participants that this section is part of a larger module titled "Informal Academic Diagnostic Assessment: Using Data to Guide Intensive Instruction". This section will focus on administering academic progress monitoring data. The larger module is available at this link: http://www.intensiveintervention.org/content/dbi-training-series

Review purpose and objectives.

Note that the following are examples of common general outcome measures that have been validated for progress monitoring students with intensive needs. They are for illustrative purposes, and are not specifically endorsed by NCII. For more information about progress monitoring, also see the Center's module titled "Using Academic Progress Monitoring for Individualized Instructional Planning" at this link: http://www.intensiveintervention.org/resource/using-academic-progress-monitoring-individualized-instructional-planning-dbi-training.

Explain that this module will be walking through several illustrative examples of progress monitoring tools, but participants can also use NCII's Progress Monitoring Tools Chart to find other options as well.

Note

- These slides are based on content developed by the National Center on Student Progress Monitoring (http://www.studentprogress.org/weblibrary.asp)

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Read slide.

Progress Monitoring Measures in Reading

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First we will review some common general outcome measures for progress monitoring in reading.

## Letter Sound Fluency (LSF)

- Intended for kindergarten students

- Student presented with page of 25 random letters on LSF Student Copy

- Student reads the letter sounds for 1 minute

- Teacher marks errors on LSF Teacher Score Sheet

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The first CBM assessment we'll review is CBM Letter Sound Fluency (LSF). LSF is used to monitor student progress in beginning decoding at kindergarten.

CBM LSF is administered individually. The examiner presents the student with a single page showing 26 letters in random order. The student has 1 minute to say the sounds that correspond with the 26 letters. The examiner marks student responses on a separate score sheet. The score is the number of correct letter sounds spoken in 1 minute. If the student finishes in less than 1 minute, the score is prorated.

Letter Sound Fluency (LSF)

- Student copy of LSF
- Letters in the box are practice
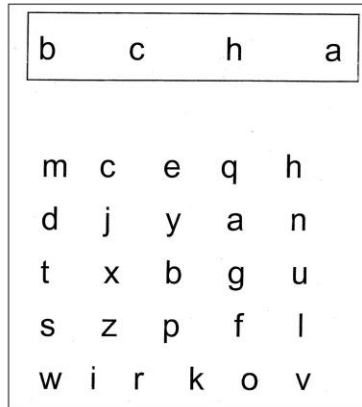
| b | c | h | a |

m	c	e	q	h
d	j	y	a	n
t	x	b	g	u
s	z	p	f	l
w	i	r	k	o	v

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This is the Student copy of CBM LSF. This would be the copy presented to the student to read.

Review the sample script and instructions below with participants.

The teacher says to the student: "I'm going to show you some letters. You can tell me what sound the letters make. You may know the sound for some letters. For other letters, you may not know the sounds. If you don't know the sound a letter makes, don't worry. Okay? What's most important is that you try your best. I'll show you how this activity works. My turn first." (Refer to the practice portion of the CBM LSF sheet.) "This says /b/. Your turn now. What sound does it say?"

Student: "/b/"

"Very good. You told me what sound the letter makes. You're doing a really good job. Now it will be just your turn. Go as quickly and carefully as you can. Remember to tell me the sounds the letters make. Remember just try your best. If you don't know the sounds it's okay."

At that point, the teacher triggers the stopwatch and the student says the letter sounds for 1-minute. If the student makes a mistake on the practice letters, additional correction procedures are available in the CBM LSF administration and scoring guide in the "Progress Monitoring Handouts" packet.

This is the Teacher Score Sheet for CBM LSF.

When scoring CBM LSF, short vowels (rather than long vowel sounds) are correct. If the student answers correctly, the examiner immediately points to the next letter on the student copy. If the student answers incorrectly, the examiner marks the letter as incorrect by making a slash through that letter on the teacher's score sheet. If a student does not respond after 3 seconds, the examiner points to the next letter. As the student reads, the examiner does not correct mistakes.

At 1 minute, the examiner circles the last letters for which the student provides a correct sound. If the student finishes in less than 1 minute, the examiner notes the number of seconds it took to finish the letters. The score is adjusted if completed in less than 1 minute. Information on adjusting scores is available in the CBM LSF administration and scoring guide in the "Progress Monitoring Handouts" packet.

Scoring LSF Probes

- Administer individually.
- Put a slash through each incorrect letter.
- Circle the last letter the student reads in one minute.
- If the student hesitates for 3 seconds, point to the next letter and score the item as incorrect.
- Count short rather than long vowels as correct.
- Do not correct students' mistakes as they read.
- Subtract the number of errors from the total letters read to obtain the students' score.
- Adjust the score if the student reads all letters in less than one minute: (# read/ # of seconds) x (60)

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Review scoring instructions on slide.

Look at the following CBM LSF score sheet. Abby mispronounced 5 letters sounds in 1 minute. The last letter sound she said correctly (/r/) is circled. Her score for the LSF would be 18. A score of 18 would be charted on Abby's CBM graph.

Letter Sound Fluency (LSF)

- Let's practice.
  - Progress Monitoring Handouts pp. 1-3

- Find a partner.
- One person should be the student and one the teacher.

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Let's practice CBM LSF.

Choose a partner. One of you is the teacher. The teacher uses the Teacher script and Teacher Score Sheet. The other person is the student. Place the Student Copy of CBM LSF in front of the student.

First, the teacher introduces the activity to the student. Then for timing purposes, all of the students will begin reading at the same time. I'll time 1 minute for everyone and the teachers will mark errors on the Score Sheet.

Go ahead and practice with your partner. At this time, teachers may go ahead and read from the script to their students.
Allow time for pairs to practice with their partners and for questions afterward (2-4 minutes).

Word Identification Fluency (WIF)

- Intended for first-grade students (or students reading at the first grade level)

- Student presented with a list of 50 words

- Student reads words for 1 minute

- Teacher marks errors on WIF Score Sheet

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The next CBM assessment is CBM Word Identification Fluency (WIF). WIF is used to monitor students' overall progress in reading at first grade. The CBM is intended for first grade students or for students reading at the first grade level.

CBM WIF is administered individually. The examiner presents the student with a single page with 50 words. The 50 words have been chosen from the Dolch 100 most frequent words list or from "The educator's word frequency guide" (Zeno, Ivens, Millard, & Duvvuri; 1995) which includes words from the 500 most frequent words list with 10 words randomly selected from each hundred. The student has 1 minute to read the words. The examiner marks student errors on a separate score sheet. The score is the number of correct words spoken in 1 minute. If the student finishes in less than 1 minute, the score is prorated.

This is a copy of a sample CBM WIF Student list. The student reads from this copy.

This is an example of the CBM **WIF Teacher Score Sheet**. The teacher marks student errors on this page.

Review administration and scoring instructions with participants:
The teacher begins by saying: "When I say, 'Go,' I want you to read these words as quickly and correctly as you can. Start here (point to the first word) and go down the page (run your finger down the first column). If you don't know a word, skip it and try the next word. Keep reading until I say stop. Do you have any questions?"

The test is timed for 1 minute. The teacher scores a word as a "1" if it's correct and a "0" if it's incorrect. If the student hesitates, after 2 seconds he/she is prompted to move to the next word. If the student is sounding out a word, he/she is prompted to move to the next word after 5 seconds. As the student reads, the examiner does not correct mistakes and marks errors on the score sheet.

At 1 minute, the examiner circles the last word the student reads. If the student finishes in less than 1 minute, the examiner notes the number of seconds it took to complete the word list, and the student score is adjusted.

Review scoring instructions on slide.

Word Identification Fluency (WIF)

Shameka's CBM WIF

- Correct words marked as '1'
- Incorrect words marked as '0'
- Last word read (car) is circled
- Shameka's score = 29

List 13

Student's Name: Shameka S.   Examiner's Initials: ST
Student's Teacher: Mr. Towler   Date: Jan. 15

Score 1 for correct response, 0 for incorrect response.

and 1	always 1	gave 1
as 1	going 0	(car 1)
at 1	until 1	probably ___
one 1	saw 1	fire ___
said 0	end 1	taken ___
into 1	room 1	problems ___
could 1	far 1	tree ___
than 1	form 0	common ___
new 1	become 0	hot ___
back 1	government 0	using ___
such 1	himself 1	doing ___
things 1	sun 1	main ___
same 1	known 0	thus ___
find 0	war 1	ask ___
went 1	learn 1	comes ___
between 1	I'm 1	street ___
want 1	eat 1	Total score = 29

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Look at the following CBM WIF score sheet. Words read correctly were marked with a number "1." Words read incorrectly are marked with a number "0." Shameka mispronounced 7 words in 1 minute. The last word she read correctly (car) is circled. Her score for the WIF is 29. A score of 29 is charted on Shameka's progress monitoring graph.

Let's practice.

One of you is the teacher. One of you is the student. The Teacher reviews the directions with the student and then all the students read words for 1 minute. Teachers mark words read correctly with a "1" and words read incorrectly as a "0."

Go ahead and practice with your partners.
Allow time for participants to practice with partners and to ask questions (2-4 minutes).

Passage Reading Fluency (PRF)

- For students in grades 1-6 (some go through 8th grade)

- Student reads grade-appropriate passage for 1 minute from PRF Student copy

- Teacher marks errors on PRF Teacher copy

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The next progress monitoring assessment Passage Reading Fluency (PRF), sometimes known as Oral Reading Fluency (ORF). PRF is used to monitor students' overall progress in reading at grades 1-8. Some teachers prefer Maze Fluency beginning at Grade 4.

PRF is administered individually. For each PRF reading probe, the student reads from a "student copy" that contains a grade-appropriate reading passage. The examiner scores the student on an "examiner copy." The examiner copy contains the same reading passage but has a cumulative count of the number of words for each line along the right side of the page. The numbers of the teacher copy allow for quick calculation of the total number of words a student reads in 1 minute.

Passage Reading Fluency (PRF)

PRF Student copy

Raymond lived in Georgia. He was born there and had many friends. One day Dad had come home from work to say that they would have to move far away. Dad worked in a factory. The factory had closed and Dad needed a new job. Dad had found a new job and now they had to move.

Raymond was sad because he did not want to leave his school. He did not want to leave his friends.

"I am sorry, son," said Dad.

"It is OK," said Raymond with a smile. He did not want Dad to feel bad.

They packed up the car and moved to a new state. Their new house was old and scary. "I wonder whether there are any ghosts living in our house," said Raymond. The house was big and dark. The front of the house was covered by trees. Even the trees looked scary. The blowing breeze made them look alive.

Inside, the house was dark, so Dad fixed the lights and turned them on. Then they unpacked the car and Raymond went up to his new room. The walls were cracked. Dad would paint them. Raymond was afraid to open the closet. He would do it later.

Raymond went down to the kitchen. Mom was making dinner. She had fried chicken and potatoes cooking because these were Raymond's favorites.

After dinner Raymond felt sleepy, so he went to his room to go to sleep. "Good night!" he called down to Mom and Dad.

"Sweet dreams," they said back.

Raymond got into bed and turned out the light. He began to fall asleep. Then he heard a loud noise. It came from the closet. Raymond

This is the PRF Student copy. This copy is placed in front of the student.

Passage Reading Fluency (PRF)

PRF Teacher copy

- Numbers along margin allow for easy calculation of words attempted

Raymond lived in Georgia. He was born there and had many	11
friends. One day Dad had come home from work to say that they	24
would have to move far away. Dad worked in a factory. The factory	37
had closed and Dad needed a new job. Dad had found a new job and	52
now they had to move.	57
Raymond was sad because he did not want to leave his school.	69
He did not want to leave his friends.	77
"I am sorry, son," said Dad.	83
"It is OK," said Raymond with a smile. He did not want Dad to	97
feel bad.	99
They packed up the car and moved to a new state. Their new	112
house was old and scary. "I wonder whether there are any ghosts	124
living in our house," said Raymond. The house was big and dark. The	137
front of the house was covered by trees. Even the trees looked scary.	150
The blowing breeze made them look alive.	157
Inside, the house was dark, so Dad fixed the lights and turned	169
them on. Then they unpacked the car and Raymond went up to his new	183
room. The walls were cracked. Dad would paint them. Raymond was	194
afraid to open the closet. He would do it later.	204
Raymond went down to the kitchen. Mom was making dinner.	214
She had fried chicken and potatoes cooking because these were	224
Raymond's favorites.	226
After dinner Raymond felt sleepy, so he went to his room to go	239
to sleep. "Good night!" he called down to Mom and Dad.	250
"Sweet dreams," they said back.	255
Raymond got into bed and turned out the light. He began to fall	268
asleep. Then he heard a loud noise. It came from the closet. Raymond	281

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This is the PRF teacher copy. The teacher marks student errors on this sheet. The numbers alongside the margin allow for easy calculation of the number of words a student has read.

The teacher begins by saying: "I want you to read this story to me. You'll have 1 minute to read. When I say 'begin,' start reading aloud at the top of the page. Do your best reading. If you have trouble with a word, I'll tell it to you. Do you have any questions? Begin."

The teacher times the student reading for 1 minute.

Scoring PRF Probes

- Administer individually
- Numerals are counted as words.
- Hyphenated words are counted as 2 words if each part can stand alone (i.e., open-faced vs. re-enter).
- Score as correct:
  - Repetitions
  - Self-corrections
  - Insertions
  - Dialectical differences

- Score as incorrect:
  - Mispronunciations
  - Substitutions
  - Omitted words
  - Hesitations (not read within 3 seconds)
  - Reversals
- More than anything, consistency is important!

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Guidance for Scoring:
The PFR is administered individually. The examiner marks each student error with a slash (/). At the end of 1 minute, the last word read is marked with a bracket (]). If a student skips an entire line of a reading passage, a straight line is drawn through the skipped line. When scoring CBM probes, the teacher identifies the count for the last word read in 1 minute, the total number of errors and then subtracts errors from the total number of words to calculate the student score.

There are a few scoring guidelines to follow when administering reading CBM probes:
- Repetitions (words said over again), self-corrections (words misread, but corrected within 3 seconds), insertions (words added to passage), and dialectic differences (variations in pronunciation that conform to local language norms) are all scored as correct.
- Mispronunciations, word substitutions, omitted words, hesitations (words not pronounced within 3 seconds), and reversals (two or more words transposed) are all scored as errors.
- Numerals are counted as words and must be read correctly within the context of the passage.
- With hyphenated words, each morpheme separated by a hyphen(s) is counted as a word if it can stand alone on its own (e.g., Open-faced is scored as two words but re-enter is scored as one word).
- Abbreviations are counted as words and must be read correctly within the context of the sentence.

As teachers listen to students read, they can note the types of decoding errors that students make, the kinds of decoding strategies students use to decipher unknown words, how miscues reflect students' reliance on graphic, semantic, or syntactic

language features, and how self-corrections, pacing, and scanning reveal strategies used in the reading process. Teachers can use these more qualitative descriptions of a student's reading performance to identify methods to strengthen the instructional program for each student. Please see part 3 of this module: "Miscue and Skills Analysis" for more information about noting student decoding errors.

Additional PRF Scoring Guidelines

- A skipped line is counted as 1 error.
- Every word but 1 of the words is subtracted from the total number of words attempted.

It was Saturday morning and Ellie wanted to go see a movie.	12
She asked her father if he would take her downtown. "Sure," said Dad.	25
"I have to go in to work anyway. It will be right on my way."	40
Ellie called her friends Beth, Katie, and Laura to see whether	51
they could go. They said yes. They went to Ellie's house. There they	64
all got into Dad's car. Then Dad drove to the movies.	75
There were two movies playing. One movie was about a boy	86
and a dog. The ticket lady said it was funny. The other movie was	100
about a mummy. It looked scary. The name of it was "The Mummy	113
Walks Again!" There was a picture of the mummy on the wall. He	126
looked creepy. The girls asked the ticket lady about the movie. She	138
said she had heard people scream when they saw the mummy.	149

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If a student skips several connected words or an entire line of the reading probe, the omission is calculated as 1 error. If this happens, every word but 1 of the words is subtracted from the total number of words attempted in 1 minute.

Look at the following example. The student omitted text 2 times during the 1-minute CBM PRF. The examiner drew a line through the omitted text. The first omission was on words 26-40. The examiner counts 15 words as omitted and drops 14 of the words before calculating the total words attempted. The student also omitted words 87-100. The examiner drops 13 of the 14 words before calculating the total words attempted.

To calculate the total number of words read in 1 minute, the examiner subtracts the 27 words (14 words from first omission plus 13 words from second omission) from the total number of words read in 1 minute. (122) The adjusted number of words attempted is then 95. The student made 7 errors (5 errors marked by slashes and 2 errors from omissions). These 7 errors are subtracted from the adjusted number of words attempted of 95. 95 – 7 = 88. 88 is the number of words read correctly in 1 minute, with 7 errors.

Passage Reading Fluency (PRF)

Reggie's CBM PRF

- Words read incorrectly marked with a slash (/)
- Lines omitted marked with a horizontal line
- Last word read in 1 minute marked with a slash

Raymond lived in Georgia. He was born there and had many	11
friends. One day Dad had come home from work to say that they	24
would have to move far away. Dad worked in a factory. The factory	37
had closed and Dad needed a new job. Dad had found a new job and	52
now they had to move.	57
Raymond was sad because he did not want to leave his school.	69
He did not want to leave his friends.	77
"I am sorry, son," said Dad.	83
"It is OK," said Raymond with a smile. He did not want Dad to	97
feel bad.	99
They packed up the car and moved to a new state. Their new	112
house was old and scary. "I wonder whether there are any ghosts	124
living in our house," said Raymond. The house was big and dark. The	137
front of the house was covered by trees. Even the trees looked scary.	150
The blowing breeze made them look alive.	157
Inside, the house was dark, so Dad fixed the lights and turned	169
them on. Then they unpacked the car and Raymond went up to his new	183
room. The walls were cracked. Dad would paint them. Raymond was	194
afraid to open the closet. He would do it later.	204
Raymond went down to the kitchen. Mom was making dinner.	214
She had fried chicken and potatoes cooking because these were	224
Raymond's favorites.	226
After dinner Raymond felt sleepy, so he went to his room to go	239
to sleep. "Good night!" he called down to Mom and Dad.	250
"Sweet dreams," they said back.	255
Raymond got into bed and turned out the light. He began to fall	268
asleep. Then he heard a loud noise. It came from the closet. Raymond	281

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Look at this sample CBM PRF probe. Reggie made 8 errors while reading the passage for 1 minute. These errors were marked with a slash. The straight line drawn through the 4th line shows that he also skipped an entire line. The last word he read was "and" and a bracket was drawn after this word. In all Reggie attempted 135 words. He skipped 15 words in the 4th line. 14 of those skipped words are subtracted from the total words attempted (135 – 14 = 121) and 1 of those skipped words is counted as an error. Reggie made 8 additional errors for a total of 9 errors. The 9 errors are subtracted from the 121 words attempted. 121 – 9 = 112. 112 correct words per minute with 9 errors is Reggie's reading score for this passage.

Reggie attempted 135 total words. He skipped 15 words in the 4th line. Fourteen of those skipped words are subtracted from the total words attempted (135 – 14 = 121) and 1 of those skipped words is counted as an error. Reggie made 8 additional errors for a total of 9 errors. The 9 errors are subtracted from the 121 words attempted. 121 – 9 = 112. 112 correct words per minute with 9 errors is Reggie's reading score for this passage.

With your partner, choose who is going to be the teacher and who is going to be the student. The teacher reviews the script with the student, and then all students will read aloud for 1 minute. Teachers will mark errors with a slash and cross out entire lines that are skipped. Teachers, go ahead and practice reading the script to your partners.
Allow time for pairs to practice.

Great. Now students will begin reading for 1 minute.
Offer to time participants for 1 minute, letting them know when to start and stop.
After participants are done practicing, prompt them to calculate the score. Allow time for any questions.

Maze Fluency

- Available for students in grades 1-6 (Recommended for Grades 4-6)
- Administered to a group of students at one time
- Students read passage and circle correct word for each blank.
- Tests last for 2.5 minutes
- Teacher grades each test later.

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The next progress monitoring assessment is Maze Fluency. Maze Fluency is available for students in grades 1-6, but typically teachers use it beginning in Grade 4. Maze Fluency is used to monitor students' overall progress in reading.

Maze Fluency can be administered to a group of students at one time. The examiner presents each student with a maze passage. With Maze, the first sentence in a passage is left intact. Thereafter, every seventh word is replaced with a blank and three possible replacements. Only one replacement is semantically correct. Students have 2.5 minutes to read the passage to themselves and circle the word correct for each blank. The examiner monitors the students during the 2.5 minutes and scores each test later. When the student makes 3 consecutive errors, scoring is discontinued (no subsequent correct replacement is counted). Skipped blanks (with no circles) are counted as errors. The score is the number of correct replacements circled in 2.5 minutes.

A Note About Maze

- An <u>overall indicator</u> of general reading skill

- Not intended to be a comprehension screener

- Generally given to older students

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While the maze assessment provides an overall indicator of general reading skill, it is important to note that it is not intended to be a comprehension screener. Maze is a more valid indicator of overall reading skill for older students, which takes into account both fluency and comprehension. Low scores on the maze assessment indicate that teachers should take a closer look at the student's deficits. While comprehension could be the reason for a low score, low scores could also be an indicator of other reading problems including vocabulary, low fluency, and/or poor decoding skills. A follow-up assessment should be used to determine a student's specific skill deficits if he or she receives a low score on the maze assessment.

Maze Fluency

- Maze student copy
- Students receive 1 point for each correct answer.
- Scoring is discontinued if 3 consecutive errors are made.
- See the Progress Monitoring Handouts pp.10-11 for a sample Maze student copy and administration instructions.

THE CAVE TRIP

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

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

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

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

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This is the student copy of CBM Maze Fluency. A copy of this test is passed out to every student at one time. The teacher reads the directions and the students work on their own for 2.5 minutes.

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

When scoring CBM Maze Fluency, students receive 1 point for each correctly circled answer. Blanks with no circles are counted as errors. After 3 consecutive errors are made, this suggests that the student is guessing and that additional correct answers are occurring by chance. Therefore, scoring is discontinued if 3 consecutive errors are made. The number of correct answers within 2.5 minutes is the student score.

Look at the following Maze score sheet. Juan circled 16 correct answers in 2.5 minutes. He circled 7 incorrect answers. However, Juan did make 3 consecutive mistakes, and 5 of his correct answers were after his 3 consecutive mistakes. Juan's score for the Maze Fluency Test would be 10. A score of 10 would be charted on Juan's progress monitoring graph.

Progress Monitoring Measures in Mathematics

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The first decision for implementing CBM in mathematics is to decide which task is developmentally appropriate for each student to be monitored over the academic year. For students who are developing at or near a typical rate in mathematics, the correct CBM tasks are as follows.

For kindergarten and first-grade students, the following probes can be administered alone or in combination with one another. Quantity Array asks students to identify the number of items in a box. Number Identification asks students to identify numeric characters. Quantity Discrimination asks students to identify the bigger number in a pair of numbers. Missing Number asks students to identify the missing number in a sequence of four numbers.

CBM Computation (Grades 1–6) and CBM Concepts and Applications Computation (Grades 2–6) can be administered alone or in combination with one another. Students in the earlier grades should use the Computation probes until the Concepts and Applications probes are appropriate for the grade-level material from the curriculum. For grades 1–6, once you select a task for CBM progress monitoring, stick with that task (and level of probes) for the entire year.

We'll discuss each of these tasks in a few minutes.

It should be noted that the Quantity Array, Number Identification, Quantity

Discrimination, and Missing Number tasks presented in the manual have limited data related to their technical adequacy at this time. The measures (as presented here) have recently been developed and are currently being examined with respect to their reliability and validity (Lembke & Foegen, 2005). Early data indicate that the measures show promise as indicators of student performance in mathematics, but the effectiveness of the measures for monitoring student progress has not been assessed at this time.

Number Identification

- For students in kindergarten and Grade 1:
  - Student is presented with 84 items and asked to orally identify the written number between 0 and 100.
  - After completing some sample items, the student works for 1 minute.
  - Teacher writes the student's responses on the Number Identification score sheet.

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The second CBM kindergarten task is Number Identification.

The Number Identification test for kindergarten students consists of 84 items that require the student to identify numbers between 0 and 100. Number Identification includes three alternate forms. Number Identification measures have been researched as screening tools, but schools may find them useful.

Number Identification is administered individually. The administrator presents the student with a student copy of the Number Identification test. The administrator places the administrator copy of the Number Identification test on a clipboard and positions it so the student cannot see what the administrator records.

This is the student's copy of the Number Identification test. The actual Number Identification test is 3 pages long. This would be the copy presented to the student.

The teacher says to the students: "The paper in front of you has boxes with numbers in them. When I say, 'Begin,' I want you to tell me what number is in each box. Start here and go across the page [demonstrate by pointing]. Try each one. If you come to one that you don't know, I'll tell you what to do. Are there any questions? Put your finger on the first one. Ready, begin."

At that point, the teacher triggers the stopwatch, and the student identifies the number of dots for 1 minute.

When scoring Number Identification, if a student correctly identifies the number, score the item as correct. If the student hesitates or struggles with a problem for 3 seconds, prompt the student to continue to the next problem and score the item as incorrect.

This is the teacher's score sheet for the Number Identification test.

When scoring Number Identification, if a student correctly identifies the number, score the item as correct.

At 1 minute, underline the last problem completed.

Number Identification

- If the student does not respond after 3 seconds, then point to the next item and say, "Try this one."
- Do not correct errors.
- Teacher writes the student's responses on the Number Identification score sheet. Skipped items are marked with a hyphen (-).
- At 1 minute, draw a line under the last item completed.
- Teacher scores the task, putting a slash through incorrect items on score sheet.
- Teacher counts the number of items that the student answered correctly in 1 minute.

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During the Number Identification test, if the student hesitates or struggles with a problem for 3 seconds, prompt the student to continue to the next problem and score the item as incorrect. Do not correct student errors.

Look at the following Number Identification score sheet. Jamal answered 54 items correctly in 1 minute. Fifty-four is Jamal's mathematics score for this probe.

Let's practice Number Identification.

Choose a partner. One of you is the teacher. The teacher uses the teacher script and teacher score sheet. The other person is the student. Place the student copy of the Number Identification test in front of the student.

Here's what happens. The teacher introduces the activity to the student. Then, for timing purposes, all of the students begin working at the same time. I'll time 1 minute for everyone. The teacher marks errors on the score sheet.

Go ahead and practice with your partner.
Allow time for pairs to practice and for questions afterwards.

Quantity Discrimination

- For students in kindergarten and Grade 1:
  - Student is presented with 63 items and asked to orally identify the larger number from a set of two numbers.
  - After completing some sample items, the student works for 1 minute.
  - Teacher writes the student's responses on the Quantity Discrimination score sheet.

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The third kindergarten CBM task is Quantity Discrimination.

The Quantity Discrimination test for kindergarten students consists of 63 items that require the student to identify the bigger number from a pair of numbers from zero to 20. Quantity Discrimination includes three alternate forms. Quantity Discrimination measures have been researched as screening tools, but schools may want to use them for progress monitoring.

Quantity Discrimination is administered individually. The administrator presents the student with a student copy of the Quantity Discrimination test. The administrator places the administrator copy of the Quantity Discrimination test on a clipboard and positions it so the student cannot see what the administrator records.

This is the student's copy of the Quantity Discrimination test. The actual Quantity Discrimination test is 3 pages long. This would be the copy presented to the student.

The teacher says to the students: "The paper in front of you has boxes with two numbers in each box. When I say, 'Begin,' I want you to tell me which number is bigger. Start here and go across the page [demonstrate by pointing]. Try each one. If you come to one that you don't know, I'll tell you what to do. Are there any questions? Put your finger on the first one. Ready, begin."

At that point, the teacher triggers the stopwatch, and the student identifies the number of dots for 1 minute.

When scoring Quantity Discrimination, if a student correctly identifies the bigger number, score the item as correct. If the student hesitates or struggles with a problem for 3 seconds, prompt the student to continue to the next problem and score the item as incorrect.

This is the teacher's score sheet for the Quantity Discrimination test.

When scoring Quantity Discrimination, if a student correctly identifies the bigger number, score the item as correct.

At 1 minute, underline the last problem completed.

Quantity Discrimination

- If the student does not respond after 3 seconds, then point to the next item and say, "Try this one."
- Do not correct errors.
- Teacher writes student's responses on the Quantity Discrimination score sheet. Skipped items are marked with a hyphen (-).
- At 1 minute, draw a line under the last item completed.
- Teacher scores the task, putting a slash through incorrect items on the score sheet.
- Teacher counts the number of items that the student answered correctly in 1 minute.

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During the Quantity Discrimination test, if the student hesitates or struggles with a problem for 3 seconds, prompt the student to continue to the next problem and score the item as incorrect. Do not correct student errors.

Look at the following Quantity Discrimination score sheet. Lin answered 33 items correctly in 1 minute. Thirty-three is Lin's mathematics score for this probe.

Let's practice Quantity Discrimination.

Choose a partner. One of you is the teacher. The teacher uses the teacher script and teacher score sheet. The other person is the student. Place the student copy of the Quantity Discrimination test in front of the student.

First, the teacher introduces the activity to the student. Then, for timing purposes, all of the students begin working at the same time. I'll time 1 minute for everyone. The teacher marks errors on the score sheet.

Go ahead and practice with your partner.
Allow time for pairs to practice and for questions afterward.

Missing Number

- For students in kindergarten and Grade 1:
  - Student is presented with 63 items and asked to orally identify the missing number in a sequence of four numbers.
  - Number sequences primarily include counting by 1s, with fewer sequences counting by 5s and 10s
  - After completing some sample items, the student works for 1 minute.
  - Teacher writes the student's responses on the Missing Number score sheet.

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The fourth kindergarten progress monitoring task is Missing Number.

The Missing Number test for kindergarten students consists of 63 items that require the student to identify the missing number in a sequence of four numbers. The sequences includes counting by 1-digit increments with numbers 0–10, counting by 2-digit increments with numbers 0–20, counting by 5-digit increments with numbers 0–50, and counting by 10-digit increments with numbers 0–100. Missing Number includes three alternate forms. Missing Number measures have been researched as screening tools, but schools may want to use them for progress monitoring.

Missing Number is administered individually. The administrator presents the student with a student copy of the Missing Number test. The administrator places the administrator copy of the Missing Number test on a clipboard and positions it so the student cannot see what the administrator records.

This is the student copy of the Missing Number test. The actual Missing Number test is 3 pages long. This would be the copy presented to the student.

The teacher says to the students: "The paper in front of you has boxes with three numbers and a blank in each of them. When I say, 'Begin,' I want you to tell me what number goes in the blank in each box. Start here and go across the page [demonstrate by pointing]. Try each one. If you come to one that you don't know, I'll tell you what to do. Are there any questions? Put your finger on the first one. Ready, begin.'

At that point, the teacher triggers the stopwatch, and the student identifies the number of dots for 1 minute.

When scoring the Missing Number test, if a student correctly identifies the missing number, then score the item as correct. If the student hesitates or struggles with a problem for 3 seconds, then prompt the student to continue to the next problem and score the item as incorrect.

Look at the following Missing Number score sheet. Thomas answered 18 items correctly in 1 minute. Eighteen is Thomas' mathematics score for this probe.

Let's practice Missing Number.
Choose a partner. One of you is the teacher. The teacher uses the teacher script and teacher score sheet. The other person is the student. Place the student copy of the Missing Number test in front of the Student.

First, the teacher introduces the activity to the student. Then, for timing purposes, all of the students begin working at the same time. I'll time 1 minute for everyone. The teacher marks errors on the score sheet.

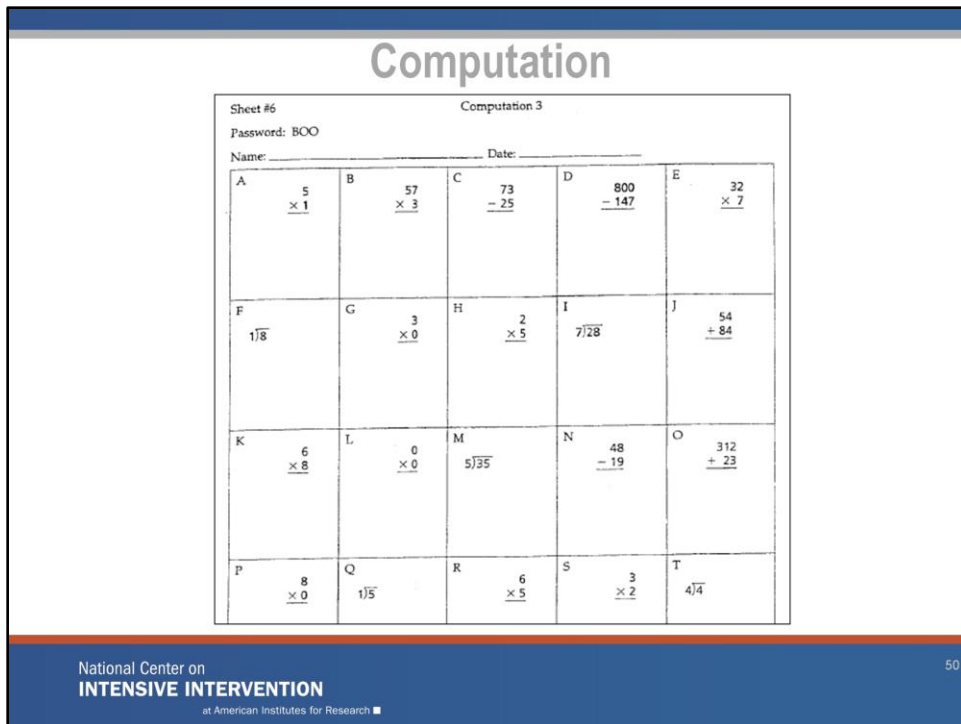Go ahead and practice with your partner.
Allow time for pairs to practice and for questions afterward.

Computation

- For students in Grades 1–6:
  - Student is presented with 25 computation problems representing the year-long, grade-level mathematics curriculum.
  - Student works for set amount of time (time limit varies for each grade).
  - Teacher grades test after student finishes.

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The mathematics CBM Computation probes include tests at each grade level for Grades 1–6. Each test consists of 25 mathematics computation problems representing the year-long grade-level mathematics computation curriculum. Within each grade level, the type of problems represented on each test remains constant from test to test. For example, for third grade, each Computation test includes five multiplication facts with factors 0–5 and four multiplication facts with factors 6–9. However, the facts to be tested and their positions on the test are selected randomly. Other types of problems remain similarly constant.

CBM Computation can be administered to a group of students at one time. The administrator presents each student with a CBM Computation test. Students have a set amount of time to answer the mathematics problems on the Computation test. Timing the CBM Computation test correctly is critical to ensure consistency from test to test. See Figure 4 in the manual for the time limit for each grade. The administrator times the students during the test and scores the tests later.

Computation

Sheet #6   Computation 3

Password: BOO

Name: _____ Date: _____

A	B	C	D	E
$\begin{array}{r} 5 \\ \times\ 1 \end{array}$	$\begin{array}{r} 57 \\ \times\ 3 \end{array}$	$\begin{array}{r} 73 \\ -\ 25 \end{array}$	$\begin{array}{r} 800 \\ -\ 147 \end{array}$	$\begin{array}{r} 32 \\ \times\ 7 \end{array}$
F	G	H	I	J
$1\overline{)8}$	$\begin{array}{r} 3 \\ \times\ 0 \end{array}$	$\begin{array}{r} 2 \\ \times\ 5 \end{array}$	$7\overline{)28}$	$\begin{array}{r} 54 \\ +\ 84 \end{array}$
K	L	M	N	O
$\begin{array}{r} 6 \\ \times\ 8 \end{array}$	$\begin{array}{r} 0 \\ \times\ 0 \end{array}$	$5\overline{)35}$	$\begin{array}{r} 48 \\ -\ 19 \end{array}$	$\begin{array}{r} 312 \\ +\ 23 \end{array}$
P	Q	R	S	T
$\begin{array}{r} 8 \\ \times\ 0 \end{array}$	$1\overline{)5}$	$\begin{array}{r} 6 \\ \times\ 5 \end{array}$	$\begin{array}{r} 3 \\ \times\ 2 \end{array}$	$4\overline{)4}$

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This is an example of a third-grade Computation test.

For grades 1–6, the teacher gives the class directions and allows the students to work for a set amount of time. The teacher says to the students: "It's time to take your weekly mathematics test. As soon as I give you your test, write your first name, your last name, and the date. After you've written your name and the date on the test, turn your paper over and put your pencil down so I know you are ready."

"I want you to do as many problems as you can. Work carefully and do the best you can. Remember, start at the first problem and work left to right. Some problems will be easy for you; others will be harder. When you come to a problem you know you can do, do it right away. When you come to a problem that's hard for you, skip it, and come back later."

"Go through the entire test doing the easy problems. Then, go back and try the harder ones. Remember that you can get points for getting part of a problem right. So, even after you have done all the easy problems, go back and try the harder problems. Do this even if you think you can't get the whole problem right." *(For appropriate grade levels, say, "Remember to reduce fractions to lowest terms unless the problem specifies to do something differently. And be sure to write out the remainder if the division problem has one.")* "When I say, 'Begin,' turn your test over and start to work. Work for the whole test time. Write your answers so I can read them. If you finish early, check your answers. When I say, 'Stop,' put your pencil down and turn your test face down."

At that point, the teacher triggers the stopwatch, and the student works for a specified

amount of time.

Computation

Grade	Time limit
1	2 minutes
2	2 minutes
3	3 minutes
4	3 minutes
5	5 minutes
6	6 minutes

The length of the Computation test varies by grade. This table shows the length of time in which students in Grades 1–6 should be allowed to work on the Computation test.

Scoring Computation

- Students receive 1 point for each problem answered correctly.
- Computation tests can also be scored by awarding 1 point for each digit answered correctly.
- The number of digits correct within the time limit is the student's score.

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When the teacher scores the student test, **students receive 1 point for each digit answered correctly**. **The total number of correct digits within the time limit is the student's score**. Although we can score total problems correct, scoring each digit correct in the answer is a more sensitive index of student change. We typically can evaluate overall student growth (or deterioration) earlier by evaluating correct digits in the answers.

When scoring computation, teachers have the option of scoring correct digits. Looking at correct digits rather than correct problems can provide helpful student information. First, looking at digits correct versus problems correct will result in greater sensitivity to change with student progress monitoring scores. Additionally, reviewing digits correct can help teachers drill down to identify specific skills that students have mastered or not yet mastered which can help to target instruction. We will go into more detail in the following slides.

Scoring Computation

- Correct digits: Evaluate each numeral in every answer:

$$\begin{array}{r} 4507 \\ -2146 \\ \hline \mathbf{2361} \end{array}$$
✓ ✓ ✓ ✓
4 correct digits

$$\begin{array}{r} 4507 \\ -2146 \\ \hline \mathbf{2461} \end{array}$$
✓   ✓ ✓
3 correct digits

$$\begin{array}{r} 4507 \\ -2146 \\ \hline \mathbf{2441} \end{array}$$
✓   ✓
2 correct digits

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Score only each digit in the answer. Do not score other digits written during the calculation of the problem.

Prompt participants to think about what different types of errors tell us, using the example script below if desired.

In addition to using scoring computation probes for quantitative data (digits correct for progress monitoring purposes), we can also analyze this data to determine the types of errors that students are making. For instance, look at the two incorrect answers in this example. What do we know about the student who only got 2 digits correct? What type of instruction might this student need? What do we know about the student who got 3 digits correct?

Scoring Different Operations

Examples:

```
   1
   1 8         4 1
 + 1 6       1 5̶ 8         2 2        2 3
 —————      - 2 9       x  4 3     8 ⟌1 8 4
   3 4       —————          6 6        1 6
   ←         1 2 7        8 8 0       ————
             ←            —————         2 4
                          9 4 6         2 4
                          ←            ————
                                          0
```

2 correct   2 correct   3 correct   2 correct
  digits   digits   digits   digits

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When scoring addition, subtraction, and multiplication problems, evaluate each digit in the answer working in the direction from right to left. This direction follows how most people would work the problem. However, for division problems, score digits in the answer from left to right, the same direction a student would follow when working the problem. A slightly different method is used when scoring a quotient with a remainder, as explained in the next slides.

Go ahead and practice scoring these computation examples. Remember that for addition, subtraction, and multiplication we should score right to left, in the same direction that you would work out the problem.

Allow time for participants to score the answers and then share answers. Prompt participants with the discussion question: "What does this tell you about what the student does and does not understand about the math concept?"
Correct answers:
6328 – 311 = 6017, 2 digits correct (1, 7)

Go ahead and practice scoring these computation examples. Remember that for addition, subtraction, and multiplication we should score right to left, in the same direction that you would work out the problem.

Allow time for participants to score the answers and then share answers. Prompt participants with the discussion question: "What does this tell you about what the student does and does not understand about the math concept?"

Correct answers:
2967 + 3614 = 5681, 2 digits correct (5, 1)

Go ahead and practice scoring these computation examples. Remember that for addition, subtraction, and multiplication we should score right to left, in the same direction that you would work out the problem.

Allow time for participants to score the answers and then share answers. Prompt participants with the discussion question: "What does this tell you about what the student does and does not understand about the math concept?"

Correct answers:
59 x 8 = 472, 3 digits correct (4, 7, 2)

Computation: Division Scoring

Division problems with remainders:

- When giving directions, tell students to write answers to division problems using "R" for remainders when appropriate.
- Score the remainder from right to left.

When giving directions, tell students that they should use remainders for problems rather than carrying out long division to decimals.

Although the first part of the quotient is scored from left to right (just like the student moves when working the problem), score the remainder from right to left (because student would likely subtract to calculate remainder).

Look at these scoring examples for division with remainders. The quotient is scored left to right, and the remainder is scored right to left.

Computation: Scoring Decimals

0.13

- Scoring Decimals: Start at the decimal point and work outward in both directions.

$$\overleftrightarrow{2 . 1 5}$$

(3 correct digits)

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For decimal problems, decimal placement is the critical feature. Therefore, the teacher starts scoring from the decimal in the answer and moves out in either direction, digit by digit. The decimal point itself is not considered a digit. It just marks where scoring begins.

Read slide.

Unless specified otherwise for a particular problem, tell students they should reduce fractional answers to lowest terms to get full credit.

Look at these scoring examples for decimals. See how the work to the left of the decimal point is scored from right to left. The work to the right of the decimal point is scored from left to right.

Prompt participants to discuss what these answers tell us about the student's understanding of decimals.

Look at these scoring examples for fractions. All the scoring for fractions takes place from right to left.

Prompt participants to discuss what these answers tell us about the student's understanding of fractions.

Look at the following fifth-grade CBM Computation score sheet. Samantha answered 13 problems correctly in 5 minutes and got 49 digits correct. We would graph 49 as Samantha's score for this probe.

In your materials packet, handout 1 is a sixth-grade Computation test.

Here's what happens. The teacher introduces the activity to the student. I'll be the teacher for this activity. All of the students will begin working at the same time. I'll time 6 minutes for everyone. As you complete these items, make some intentional errors so that your partner will get a chance to practice using the scoring rules we've learned.

[*Teacher reads from script*.] Are all the students ready? Great. Go ahead and begin. [*Time for 6 minutes*.]

Computation Answer Key

4/15	14.364	1 4/5	108268	6527
10.2498	122920	6800	70R74	1 1/2
1464192	9 5/21	1R20	12	2.1123
4/25	114R67	2.1964	.46	1 4/9
604128	35	27/28	5 7/10	23148

- Possible score of 21 digits correct in first row
- Possible score of 23 digits correct in the second row
- Possible score of 21 digits correct in the third row
- Possible score of 18 digits correct in the fourth row
- Possible score of 21 digits correct in the fifth row
- Total possible digits on this probe: 104

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[*At the end of 6 minutes*] Great! Now, switch Computation tests with the person sitting next to you. Use this key to grade the student's work. Score just the digits correct in the answers and ignore any other computational work. Remember to score right to left for addition, subtraction, and multiplication.

Score left to right for division—except for the remainder part, which is scored right to left. Make sure students know to write remainders when appropriate. For decimals, start at the decimal point and work outward from the decimal point in both directions. For fractions, score each digit right to left for the whole number part, for the numerator, and for the denominator separately. Then, add together all the digits correct from each part. Be sure students know that fractions should be reduced (or simplified) to their lowest terms unless specified differently by the problem (e.g., renaming to an improper fraction).

If the student gets every digit correct on this probe, the student would earn a total of 104 digits correct (or 25 problems). Then, the teacher would graph 104 as the student's score for this probe.

Take a moment to think about this question. *Read question and pause to give participants time to think.*

Share your thoughts with someone next to you. *Pause to give participants time to share.*

So, what were some of the advantages that you discussed of scoring digits vs. problems correct for the purposes of progress monitoring? What about for understanding skill strengths and weaknesses?
Prompt participants to share their thoughts.

Note that more information about error analysis for mathematics is covered in Part 3 of this module.

Answers:
1. *More sensitive to change*
2. *Digits correct allows you to conduct error analysis more efficiently, and in a more targeted manner*
3. *Looking at digits correct can reveal different types of errors that students may make. Different types of errors reveal different skill deficits. This can help teachers to better target instruction to remediate skill weaknesses.*

Concepts and Applications
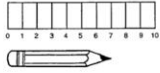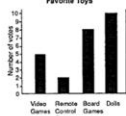
For students in Grades 2–6:

- Student is presented with 18–25 Concepts and Applications problems representing the year-long, grade-level mathematics curriculum.
- Topics: number concepts, word problems, measurement, and graphs, to name a few.
- Student works for set amount of time (time limit varies by grade).
- Teacher grades test after student finishes.

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The mathematics Concepts and Applications probes include tests at each grade level for Grades 2–6. Each test consists of 18–25 mathematics computation problems representing the year-long, grade-level mathematics concepts and applications curriculum. Each test is 3 pages long. Within each grade level, the type of problems represented on each test remains constant from test to test. For example, for third grade, every Concepts and Applications test includes two problems dealing with charts and graphs and three problems dealing with number concepts. Other types of problems remain similarly constant. The placement of the various types of items is random from test to test, and the actual problems differ from test to test.

Concepts and Applications can be administered to a group of students at one time. The administrator presents each student with a Concepts and Applications test. Students have a set amount of time to answer the mathematics problems on the test. Timing the Concepts and Applications test correctly is critical to ensure consistency from test to test. The administrator monitors the students during the test and scores each test later. The score is the number of blanks answered correctly.

Concepts and Applications Student Copy

- This sample is from a second-grade test.
- The actual Concepts and Applications test is 3 pages long.

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This is the student's copy of the Concepts and Applications test. The actual test is 3 pages long. This would be the copy presented to the student.

For Grades 2–6, the teacher gives the class directions and allows the students to work for a set amount of time. The teacher says to the students: "It's time to take your weekly mathematics test. As soon as I give you your test, write your first name, your last name, and the date. After you've written your name and the date on the test, turn your paper over and put your pencil down so I'll know you are ready. I want you to do as many problems as you can. Work carefully and do the best you can. Remember, start at the first problem, work down the first column and then down the second column. Then move on to the next page. Some problems will be easy for you; others will be harder. When you come to a problem you know you can do, do it right away. When you come to a problem that's hard for you, skip it, and come back later. Remember, some problems have more than one blank. You get credit for each blank that you answer, so be sure to fill in as many blanks as you can. The answers to some word problems may be an amount of money. When you write your answer to a money problem, be sure to use the correct symbols for money in order to get credit for your answer. Go through the entire test doing the easy problems. Then go back and try the harder ones. When I say, 'Begin,' turn your test over and start to work. Work for the whole test time. Write your answers so I can read them. If you finish early, check your answers. When I say, 'Stop,' put your pencil down and turn your test face down."

At that point, the teacher triggers the stopwatch, and the student works for a specified amount of time.

Concepts and Applications

Grade	Time limit
2	8 minutes
3	6 minutes
4	6 minutes
5	7 minutes
6	7 minutes

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The length of the Concepts and Applications test varies by grade. This table shows the length of time in which students in Grades 2–6 should be allowed to work on the Concepts and Applications test.

Scoring Concepts and Applications

- Students receive 1 point for each blank answered correctly.
- The number of correct answers within the time limit is the student's score.
- The Progress Monitoring Handouts packet (p. 20) contains a sample 5th grade Concepts and Applications assessment.

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When the teacher scores the student test, students receive 1 point for each blank answered correctly. The total number of correct blanks is the student's score. Note that no points are awarded for the actual symbols indicating money. Only the digits in the answers will be scored. However, without the monetary symbol for appropriate word problems, the answer should not be scored.

Concepts and Applications

Quinten's fourth-grade Concepts and Applications test:

- Twenty-four blanks answered correctly.
- Quinten's score is 24.
- The complete test is 3 pages.

Look at the following fourth-grade CBM Concepts and Applications score sheet. Quinten answered a total of 24 blanks correctly. Twenty-four is Quinten's mathematics score for this probe. Note that on problem 9, Quinten missed both blanks. The whole problem is marked wrong. However, Quinten's teacher could have marked each blank separately which would make the measure more sensitive to change.

For more information about progress monitoring, check out NCII's training modules and webinars on academic and behavioral progress monitoring as well as the progress monitoring tools charts. Additionally, the Center on Response to Intervention houses various resources related to progress monitoring including learning modules as part of the RTI Implementer Series.

As a reminder, other sections of this training module will provide guidance on interpreting progress monitoring data and analyzing errors.

Disclaimer

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