Archived Information

Strategies for Making Adequate Yearly Progress

USING CURRICULUM-BASED MEASUREMENT FOR PROGRESS MONITORING

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Insights into First-Grade Thinking: New Twists on Old Proverbs

• Better to be safe than ...

• Better to be safe ... than punch a 5th grader.

• It's always darkest before ...

• It's always darkest before ... Daylight Savings Time.

• A miss is as good as a ...

• A miss is as good as a ... Mr.

• You can't teach an old dog new ...

• You can't teach an old dog new ... math.

USING CURRICULUM-BASED MEASUREMENT

for Progress Monitoring

With Progress Monitoring

- Teachers assess students' academic performance on a regular basis
- To determine whether children are profiting appropriately from the typical instructional program
- To build more effective programs for children who do not benefit appropriately from typical instruction

A Scientific Base Supports One Form of Progress Monitoring:

Curriculum-Based
Measurement (CBM)

Endorsed by Reading First Assessment Committee:

Screening, Progress Monitoring, Outcome Assessment

What is CBM?

A form of classroom assessment for...

- describing academic competence in reading, spelling, or mathematics
- tracking academic development
- improving student achievement

Curriculum-Based Measurement (CBM) . . .

- result of 20 years of research
- used in schools across the country
- demonstrates strong reliability and validity
- used with all children to determine whether they are profiting from typical instruction
- used with failing children to enhance instructional programs

Research Indicates:

• CBM produces accurate, meaningful information about students' academic levels and growth;

CBM is sensitive to student improvement;

• When teachers use CBM to inform their instructional decisions, students achieve better.

Most Forms of Classroom Assessment Are Mastery Measurement

CBM is NOT

Mastery Measurement

Mastery Measurement describes mastery of a series of short-term instructional objectives

To implement mastery measurement, the teacher

• determines a sensible instructional sequence for the school year

 designs criterion-referenced testing procedures to match each step in that instructional sequence

Fourth Grade Math Computation Curriculum

- 1 Multidigit addition with regrouping
- 2 Multidigit subtraction with regrouping
- 3 Multiplication facts, factors to 9
- 4 Multiply 2-digit numbers by a 1-digit number
- 5 Multiply 2-digit numbers by a 2-digit number
- 6 Division facts, divisors to 9
- 7 Divide 2-digit numbers by a 1-digit number
- 8 Divide 3-digit numbers by a 1-digit number
- 9 Add/subtract simple fractions, like denominators
- Add/subtract whole number and mixed number

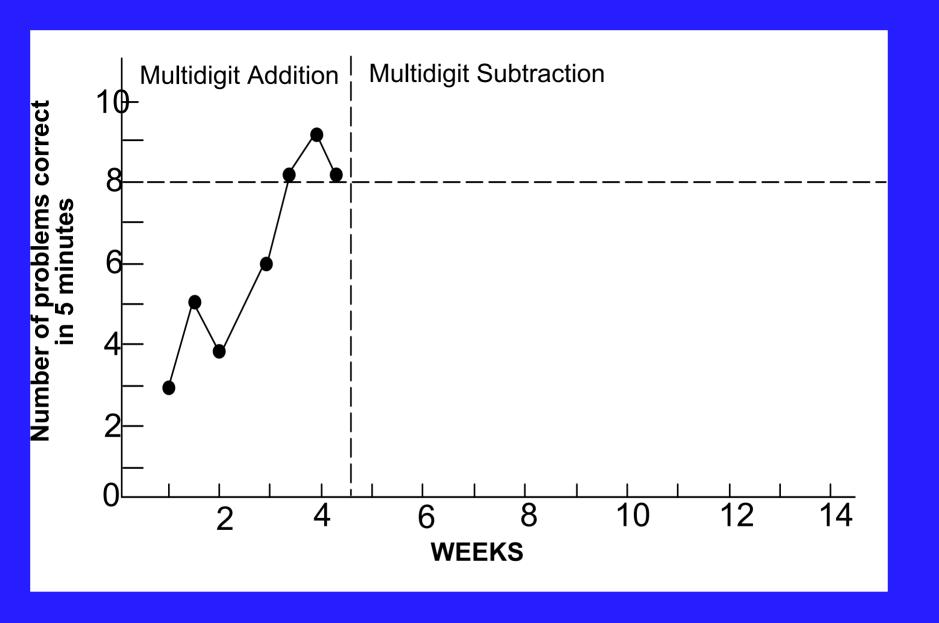
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- 8 Divide 3-digit numbers by a 1-digit number
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- 10 Add/subtract whole number and mixed number

Multidigit Addition Mastery Test

Name: _____ Date____

Adding



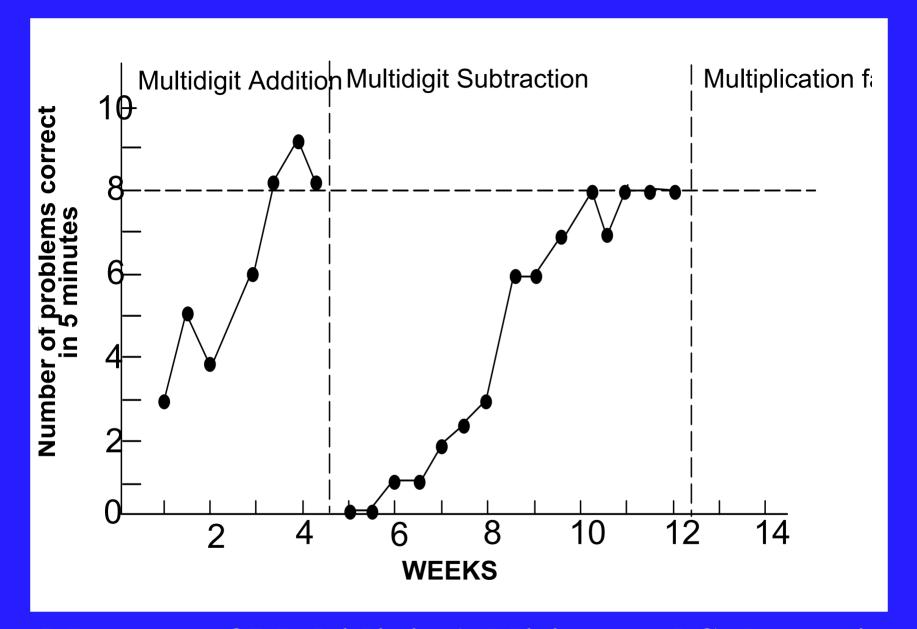
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Multidigit Subtraction Mastery Test

Name:_____ Date____

Subtracting



Mastery of Multidigit Addition and Subtraction

Problems Associated with Mastery Measurement:

- Hierarchy of skills is logical, not empirical.
- Assessment does not reflect maintenance or generalization.
- Number of objectives mastered does not relate well to performance on criterion measures.
- Measurement shifts make it difficult to estimate learning patterns.
- Measurement methods are designed by teachers, with unknown reliability and validity.
- Measurement framework is highly associated with a set of instructional methods.

Curriculum-Based Measurement (CBM) was designed to address these problems.

- CBM makes no assumptions about instructional hierarchy for determining measurement (i.e., CBM fits with any instructional approach).
- CBM incorporates automatic tests of retention and generalization.

How to Do CBM:

- Identify the skills in the year-long curriculum
- Determine the weight of skills in the curriculum
- Create 30 alternate test forms
 - each test samples the entire year's curriculum
 - each test contains the same types of problems
- Give tests weekly (twice weekly for special ed)
- Graph and analyze data
- Modify instruction as appropriate

How to Do CBM (with computer assistance):

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- Determine the weight of skills in the curriculum
- Create 30 alternate test forms
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MATHEMATICS CBM

Fourth Grade Math Computation Curriculum

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Random
numerals
within
problems
(considering
specifications
of problem
types)

Random placement of problem types on page

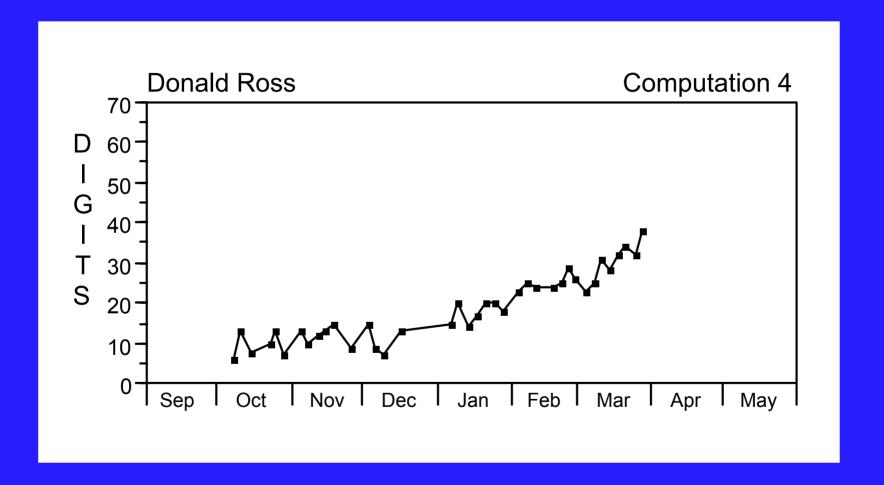
Sheet #1		Computation 4		
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Name:		Date _		
$\begin{vmatrix} A \\ \frac{3}{7} - \frac{2}{7} = \end{vmatrix}$	$\frac{16}{7} + 3 =$	4)6	6)78	875 <u>x 7</u>
F	G	Н	ı	J
6 <u>x 7</u>	9 <u>x 0</u>	244 <u>x 7</u>	6)48	5)20
к 2)50	6144 - 4420	м 33 <u>х 10</u>	6 <u>x 0</u>	7)30
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$\frac{3}{5} + \frac{1}{5} =$	982 - 97	w 9 <u>x 5</u>	x 4 <u>x 1</u>	7)56

Random
numerals
within
problems
(considering
specifications
of problem
types)

Random placement of problem types on page

Sheet #2	Computation 4				
Password: AIR					
Name:		Date _			
A	В	С	D	E	
9)24	52852 +64708	9 <u>x 0</u>	4)72	8285 4304 + 90	
F	G	Н	I	J	
6)30	35 <u>x 74</u>	4 <u>x 5</u>	7 <u>x 9</u>	$\frac{2}{3} - \frac{1}{3} =$	
к 32 <u>х 23</u>	8 <u>x 6</u>	м 5)65	6)30	0 3 4 7 - 1 =	
Р	Q	R	S	Т	
107 <u>x 3</u>	2)9	416 <u>- 44</u>	$\frac{5}{11} + \frac{3}{11} =$	6 <u>x 2</u>	
U 4 1/2 + 6 =	V 1504 - 1441	9)81	130 <u>x 7</u>	Y 5)10	

Donald's Progress in Digits Correct Across the School Year



A "Correct Digit" Is the Right Numeral in the Right Place

4507 4507 4507 -2146-2146-21462461 2441 2361 3 2 correct correct correct digits digits digits

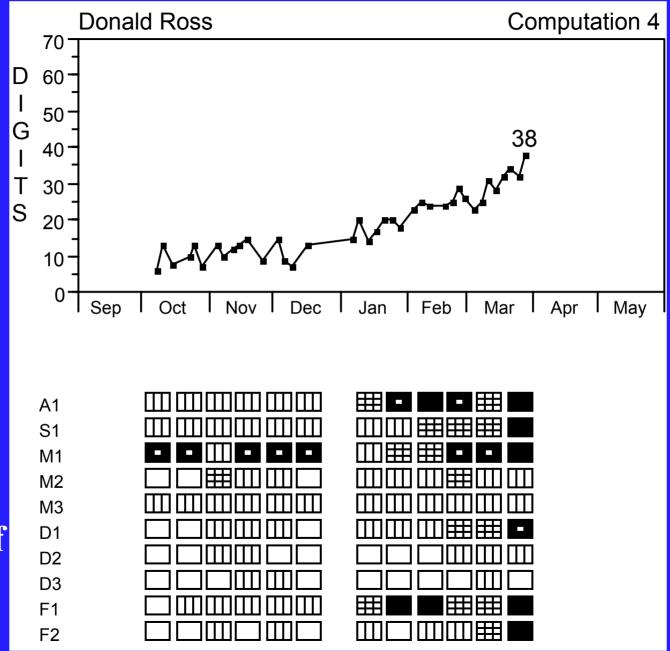
One page of a three-page CBM math concepts and applications task (24 total problems)

Name	Date Test 4 Page 1		
Column A App	olications 4 Column B		
(1)	(5)		
Write the letter in each blank.	Write a number in the blank.		
_	1 week = days		
z (A) line segmen			
── K L (B) line	(6) Vacation Plans for Summit		
M N (C) point	School Students		
	Summer		
(D) ray	School		
(2)	Camp		
. ,			
Look at this numbers.:	Travel		
356.17	Stay home		
Which number is in the hundredths place?	0 10 20 30 40 50 60 70 80 90 100		
	Number of Students		
(3) Solve the problem by estimating the sum of	Use the bar graph to answer the questions.		
difference to the nearest ten.	The P.T.A. will buy a Summit School T-Shirt for each student who goes		
Jeff wheels his wheelchair for 33 hours a week at school and for 28 hours a week	to summer school. Each shirt costs		
in his neighborhood. About how many	\$4.00. How much money will the P.T.A. spend on these T shirts? \$.00		
hours does Jeff spend each week wheelin his wheelchair?	g How many students are planning to		
riis wheelchail !	travel during the summer?		
	How many fewer students are planning		
(4)	to go to summer school than planning		
Write the number in each blank.	to stay home?		
3 ten thousands, 6 hundreds, 8 ones	(7)		
3 ten triousarius, o nunureus, o ories	To measure the distance of the bus ride from school to your house you		
	would use		
2 thousands, 8 hundreds, 4 tens, 6 ones	(A) meters		
	(B) centimeters (C) kilometers		
	(O) Kilometers		

Donald's

Graph
and Skills
Profile by
Problem
Type

(darker boxes show greater level of mastery of problem type)



READING CBM

Grade 1 Reading Curriculum

- Phonics
 - Sound-letter correspondence
 - cvc patterns
 - cvce patterns
 - cvvc patterns
- Sight Vocabulary
- Comprehension
 - identification of who/what/when/where
 - identification of main idea
 - Sequence of events
- Fluency

Reading CBM

 Number of words read aloud correctly in 1 minute on end-of-year passages

 Number of words selected correctly in 2.5 minutes on end-of-year maze passages

CBM passage for Correct Words Per Minute

Jason Fry ran home from school. He had to pack his clothes. He was going to the beach. He packed a swimsuit and shorts. He packed tennis shoes and his toys. The Fry family was going to the beach in Florida.

The next morning Jason woke up early. He helped Mom and Dad pack the car, and his sister, Lonnie, helped too. Mom and Dad sat in the front seat. They had maps of the beach. Jason sat in the middle seat with his dog, Ruffie. Lonnie sat in the back and played with her toys.

They had to drive for a long time. Jason looked out the window. He saw farms with animals. Many farms had cows and pigs but some farms had horses. He saw a boy riding a horse. Jason wanted to ride a horse, too. He saw rows of corn growing in the fields. Then Jason saw rows of trees. They were orange trees. He sniffed their yummy smell. Lonnie said she could not wait to taste one. Dad stopped at a fruit market by the side of the road. He bought them each an orange.

A SCARY NOISE

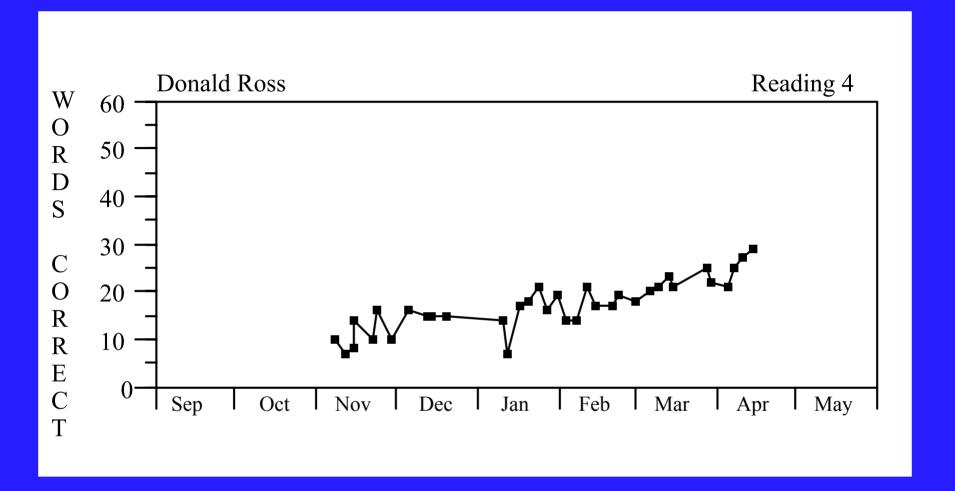
Ray lived in Georgia. He was born there and had
friends. One day Dad had come homework to say that they
would have move far away. Dad worked in factory. The
factory had closed and Dad a new job. Dad had found a
job and now they had to move.
Ray sad because he did not want leave his school.
He did not to leave his friends.
"I am, son," said Dad.
"It is OK," Ray with a smile. He did want Dad to
feel bad.
They up the car and moved to a state. Their new

Go forward

A SCARY NOISE

Ray lived in Georgia. He was born there and had many
friends. One day Dad had come homework to say that they
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Go forward



Donald's Progress on Words Selected Correctly for CBM Maze Task

Pre-Reading CBM

- Kindergarten: Phonemic-Segmentation Fluency
- Kindergarten: Letter-Sound Fluency
- Early First Grade: Nonsense-Word Fluency
- Early First Grade: Word-Identification Fluency

Kindergarten Phonemic-Segmentation Fluency

Teacher: I'm going to say a word. After I say it, tell me all the sounds in the word.

Example

Teacher: Sam

Child: /s//a//m/(3 correct)

or

Child: /s//am/(2 correct)

Time: 1 minute

call

show

skin

thick

brook

do

young

• • •

Kindergarten Letter-Sound Fluency

Teacher: Say the sound that goes with each letter.

Time: 1 minute

p	U	Z	u	y
<u>i</u>	t	R	e	W
0	a	S	d	f
V	g	j	S	h
k	m	n	b	V
Y	E	i	c	X
•••				

Early First Grade Nonsense-Word Fluency

Teacher: Look at this word. It's a makebelieve word: /s//i//m/ 'sim.' I can say the sounds of the letters, /s//i//m/, or I can read the whole word, 'sim.' For each word, say the sounds or read the whole word.

• Time: 1 minute

wab

lon

deg

pev

yil

baf

huz

•••

Early First Grade Word-Identification Fluency

Teacher: Read these words.

Time: 1 minute.

two for come because last from

•••

High-School Content Area CBM

Vocabulary matches

- Contact Chris Espin at the University of Minnesota
 - espin001@umn.edu

Three Purposes of CBM:

Screening

Progress Monitoring

Instructional Diagnosis

CBM Screening

- All students tested early in the year
- Two alternate forms administered in same sitting
- Students who score below a criterion are candidates for additional testing or for more intensive service

CBM Screening

Examples:

- Beginning of Grade 1: students who say less than 15 sounds in 1 minute.
- Beginning of Grade 2: students who read less than 40 words from text in 1 minute.

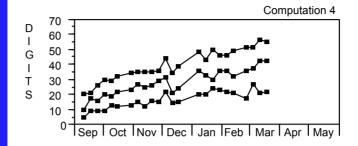
Progress Monitoring and Instructional Decision Making in General Education

- •Identify students whose progress is less than adequate
- •Use information to enhance instruction for all students

In general education, the focus is on the class report to enhance instruction for all students and to identify which students are in need of more help.

CLASS SUMMARY

Teacher: Mrs. Smith Report through 3/17



Students to Watch

Jonathan Nichols Amanda Ramirez Anthony Jones Erica Jernigan Icon

Most Improved

Icon Michael Elliott Jonathan Nichols Michael Sanders Matthew Hayes

Areas of Improvement: Computation

M1 Multiplying basic facts
M2 Multiplying by 1 digit
M3 Multiplying by 2 digits
D1 Dividing basic facts

Whole Class Instruction: Computation

M3 Multiplying by 2 digits

58% of your students are either COLD or COOL on this skill.

Small Group Instruction: Computation

S1 Subtracting

Cindy Lincoln Icon Kaitlin Laird Michael Elliott Michael Sanders

Class Skills **Profile** by problem type for each student

CLASS SKILLS PROFILE - Computation

Teacher: Mrs. Smith Report through 3/17

<u>Name</u>	<u>A1</u>	<u>S1</u>	<u>M1</u>	<u>M2</u>	<u>M3</u>	<u>D1</u>	<u>D2</u>	<u>D3</u>	<u>F1</u>	<u>F2</u>
Adam Qualls						\Box	Ш			Ш
Amanda Ramirez		Ш				\blacksquare				
Anthony Jones	\blacksquare	Ш		Ш			Ш			
Aroun Phung							Ш			
Becca Jarrett							Ш			
Charles McBride							Ш			
Cindy Lincoln	I	Ш			\blacksquare				Ш	
David Anderson	Ш	Ш			Ш	\blacksquare	Ш	Ш		
Emily Waters					Ш			Ш		
Erica Jernigan		Ш		Ш	Ш	Ш	Ш			
Gary McKnight					Ш		Ш	Ш		
Icon										
Jenna Clover					\blacksquare		Ш			
Jonathan Nichols		田			Ш				Ш	田
Jung Lee										
Kaitlin Laird		Ш		田	Ш	\blacksquare	Ш			
Kathy Taylor							Ш	\blacksquare		
Matthew Hayes						\blacksquare	Ш	\blacksquare		
Michael Elliott					Ш		Ш	Ш	Ш	
Michael Sanders		Ш		Ш	Ш	\blacksquare	Ш			Ш
Samantha Spain	—— Ⅲ				=					
Vicente Gonzalez						\blacksquare				
Victoria Dillard		Ш			Ш		Ш	Ш		Ш
Yasmine Sallee										
COLD. Not tried	0	1	0	0	0	0	2	8	2	5
COOL. Trying these.	3	8	0	5	14	3	16	10	3	3
WARM. Starting to get it.	2	1	0	1	3	6	0	2	0	1
VERY WARM. Almost have it.	5	3	8	4	0	4	0	1	1	0
HOT. You've got it!	13	10	15	13	6	10	5	2	17	14

Ranked Scores-Average of Last Two **CBM** Scores and the

Slope-Average
Weekly
Increase

RANKED SCORES - Computation

Teacher: Mrs. Smith Report through 3/17

N I a 100 a

<u>Name</u>	<u>Score</u>	<u>Growth</u>
Samantha Spain	57	+1.89
Aroun Phung		
Gary McKnight	54	+1.14
Yasmine Sallee	53	+1.34
Kathy Taylor	53	+1.11
Jung Lee	53	+1.23
Matthew Hayes	51	+1.00
Emily Waters	48	+1.04
Charles McBride	43	+1.12
Michael Elliott	42	+0.83
Jenna Clover	42	+0.78
Becca Jarrett	41	+1.14
David Anderson	38	+0.79
Cindy Lincoln	36	+1.04
Kaitlin Laird	35	+0.71
Victoria Dillard	34	+0.64
Vicente Gonzalez	29	+0.28
Adam Qualls	26	+0.60
Michael Sanders	25	+0.70
Jonathan Nichols	25	+2.57
Amanda Ramirez	23	+0.85
Anthony Jones	19	+0.05
Erica Jernigan	18	+0.23
lcon	0	+0.00

0----

Cranth

PEER TUTORING ASSIGNMENTS

Teacher: Mrs. Smith Report through 3/17

M2 Multiplying by 1 digit	2 Multiplying by 1 digit First Coach	
	Samantha Spain Kathy Taylor Aroun Phung Emily Waters Charles McBride David Anderson	Icon Erica Jernigan Adam Qualls Michael Sanders Amanda Ramirez Anthony Jones
M3 Multiplying by 2 digits	First Coach	Second Coach
	Matthew Hayes Cindy Lincoln Jung Lee Yasmine Sallee Vicente Gonzalez Jenna Clover	☐☐ Becca Jarrett☐☐ Kaitlin Laird☐☐ Victoria Dillard☐☐ Gary McKnight☐☐ Michael Elliott☐☐ Jonathan Nichols

Possible Peer Tutoring Assignments based on students' recent CBM scores and Skills Profile

Overall Class Scores

and ID of students whose progress is poor compared to peers

CLASS STATISTICS: Computation

Teacher: Mrs. Smith Report through 3/17

Score

Average score	39.5
Standard deviation	12.6
Discrepancy criterion	26.9

Slope

Average slope	+0.98
Standard deviation	0.53
Discrepancy criterion	+0.45

Students identified with dual discrepancy criterion

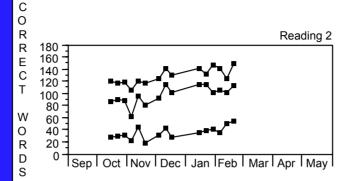
	<u>Score</u>	<u>Slope</u>
Anthony Jones	19.0	+0.05
Erica Jernigan	18.0	+0.23

Class Summary in Reading

- •Class Graph
- •Students in Bottom 25%
- •Most Improved Across Last Few Weeks
- •Students Who
 Could Benefit from
 Instruction in
 Comprehension,
 Fluency, and
 Decoding

CLASS SUMMARY

Teacher: Mrs. Jones Report through 2/15



Students to Watch

Shana Harmon Mario Houston Jalisha Sizemore Ladarius Freeman Nathanial Anderson

Most Improved

Jalisha Sizemore Ladarius Freeman Mario Houston Shana Harmon Nathanial Anderson

Comprehension Activities

Adam Brown Andrew Jones Angela Adams Carolyn Hudson Cathryn O'Connel Jermaine Jones Kenzie Williams Melanie White Quenton Miller Russell Carson Sam Nelson Wilson Carter

CAR

Fluency Practice

Phonics Instruction

MAT/LAST
Ladarius Freeman
Mario Houston
Nathanial Anderson

TIME
Ladarius Freeman
Mario Houston
Nathanial Anderson

<u>RUNNING</u>

<u>BEAT</u>

HAPPY
Jalisha Sizemore
Shana Harmon

PUBLIC

Jalisha Sizemore Shana Harmon

Class Skills **Profile in** Reading targeting need for comprehension, fluency, and decoding instruction

CLASS SKILLS PROFILE

Teacher: Mrs. Jones Report through 2/15

		-	MAT/LAST	TIME	CAR	BEAT	НАРРҮ	PUBLIC	SUNNING
Name Comprehe		<u>Fluency</u>	2	-	O	ш	I	Ф	œ
Adam Brown C									
Andrew Jones C	J								
Angela Adams C	D								
Carolyn Hudson C	D								
Cathryn O'Connel C	D								
Jalisha Sizemore									
Jermaine Jones C	D								
Kenzie Williams C	D								
Ladarius Freeman			. ##					\blacksquare	\blacksquare
Mario Houston		.		Ш		Ш		Ш	
Melanie White C	D								
Nathanial Anderson			. 🔢	\prod	\prod	\prod	\prod	\prod	\prod
Quenton Miller C	D								
Russell Carson C	D								
Sam Nelson C	D								
Shana Harmon									
Wilson Carter C	D								

Cold. Missing most of these words.

Warm. Getting some of these words right.

Hot. Getting most of these words right.

MAT/LAST: closed syllable, short vowel, e.g., bed, top, hit, cat bump, mast, damp

TIME: final e, long vowel, e.g., cake, poke, same, woke, mine, rose, gate

CAR: vowel r-controlled, e.g., fur, nor, per, sir, her, tar

BEAT: two vowels together, e.g., soap, maid, lean, loaf, paid, meal

HAPPY: divide between two like consonants, e.g., lesson, bubble, battle, giggle, PUBLIC: divide between unlike consonants, e.g., elbow, walrun, doctor, victim, admit

RUNNING: dividing between double consonant with suffix, e.g., batter, sipped, hitting, tanned, bitten

Students meeting or not meeting end-of-year benchmark

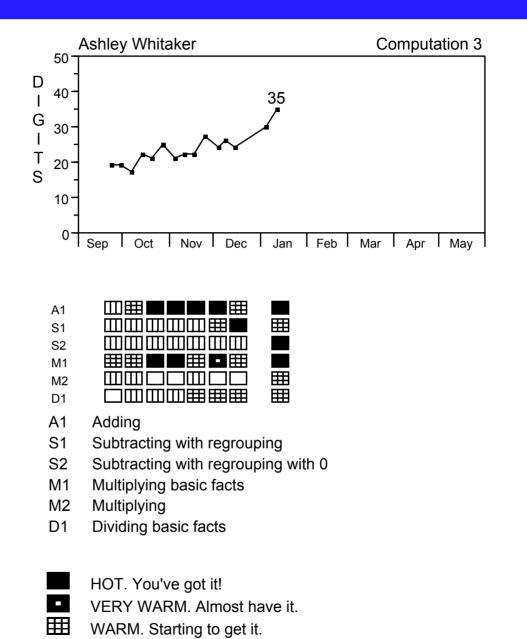
Teacher: Mrs. Jones

Class Scores

Report through 2/15

<u>Name</u>	Score	Growth
* The following student(s) are currently	at or above end-of-yea	r benchmark.
Jermaine Jones		
Kenzie Williams	133	+1.32
Wilson Carter	132	+3.05
Carolyn Hudson		
Cathryn O'Connel	123	+0.80
Angela Adams	122	+0.30
Sam Nelson		
Andrew Jones		
Russell Carson		
Adam Brown		
Quenton Miller		
Melanie White		
Shana Harmon		
* The following student(s) are currently	, helow end-of-year hen	chmark
Mario Houston		
Jalisha Sizemore		
Ladarius Freeman		
* The following student(s) are currently	/ below previous vear's	benchmark.
Nathanial Anderson		

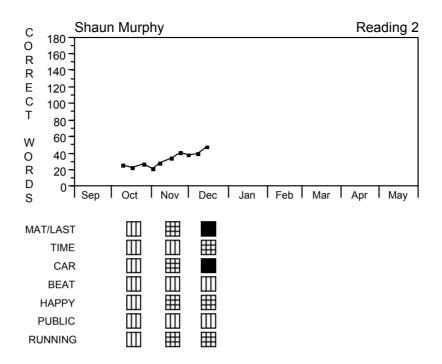
Graphs are printed to provide student feedback every 2 weeks.



COOL. Trying these.

COLD. Not tried

Reading feedback for individual student: Graph and **Decoding** Skills **Profile**



MAT/LAST: closed syllable, short vowel, e.g., bed, top, hit, cat bump, mast, damp

TIME: final e, long vowel, e.g., cake, poke, same, woke, mine, rose, gate

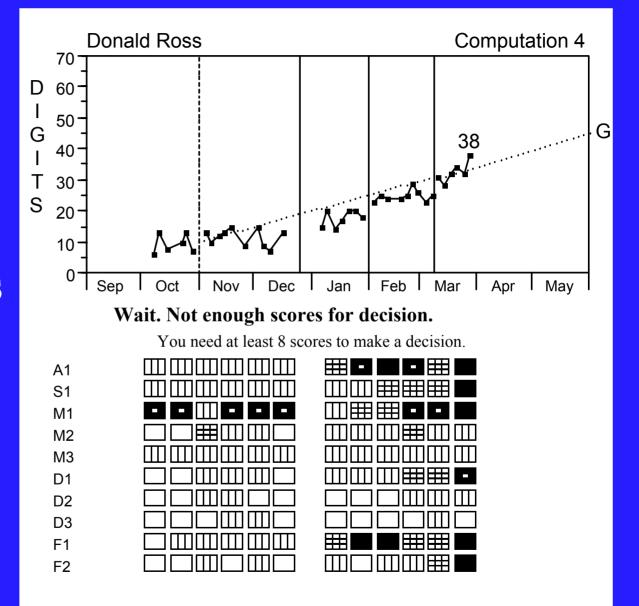
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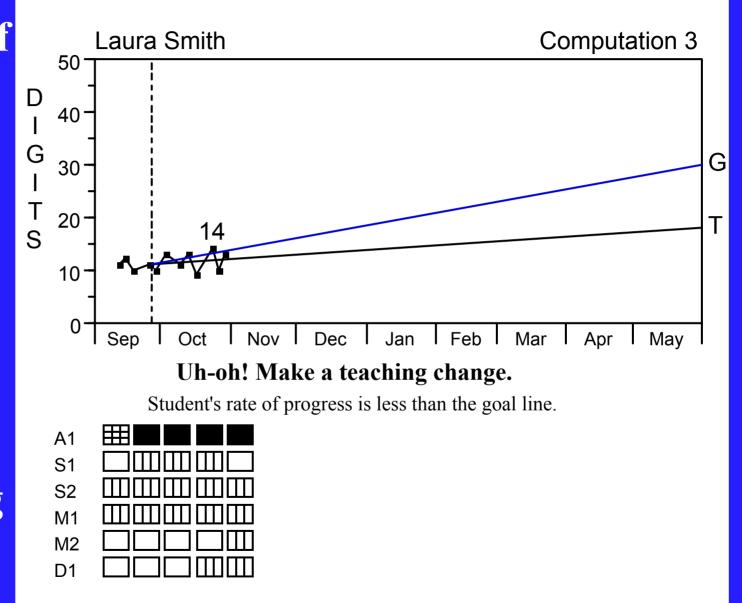
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RUNNING: dividing between double consonant with suffix, e.g., batter, sipped, hitting, tanned, bitten

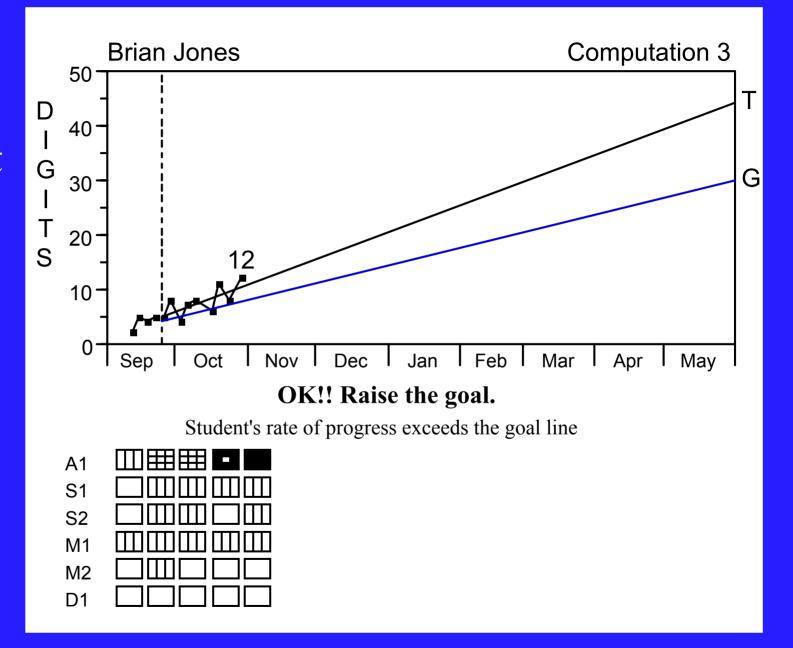
For students whose progress is unacceptably poor, CBM is used for individual decision making.



Trend of student data is less steep than goal line: Make a teaching change.



Trend of student data is steeper than goal line: Raise the goal.



In Summary, CBM Is Used:

- to identify at-risk students who may need additional services
- to help general education teachers plan more effective instruction within their classrooms
- to help special education teachers design more effective instructional programs for students who do not respond to the general education program
- to document student progress for accountability purposes
- to communicate with parents or other professionals about students' progress

Special thanks are extended to Carol Hamlett of Vanderbilt for her assistance with this presentation.

Carol may be contacted for further information about the CBM computer programs at:

carollhamlett@aol.com

or at 615-343-4782