Monitoring Student Progress in the Classroom to Enhance Teaching Planning and Student Learning

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Progress Monitoring

- Teachers assess students' academic performance, using brief measures, on a frequent basis

Different Forms of Progress Monitoring

Curriculum-Based Assessment (Tucker; Burns)

- Find instructional level

Mastery Measurement (Precision Teaching, WIDS)

- Tracks short-term mastery of a series of instructional objectives

Curriculum-Based Measurement

Focus of This Presentation

Curriculum-Based Measurement

the scientifically validated form of progress monitoring

Teachers Use CBM to …

- Describe academic competence at a single point in time
- Quantify the rate at which students develop academic competence over time
- Build more effective programs to increase student achievement

Curriculum-Based Measurement (CBM) . . .

- Result of 30+ years of research
- In the United States, CBM is a **signature feature of quality special education** and increasingly is used within **RTI**.
- Demonstrates strong reliability, validity, and instructional utility

Research Shows

- CBM produces accurate, meaningful information about students' academic levels and their rates of improvement.
- CBM is sensitive to student improvement.
- CBM corresponds well with high-stakes tests.
- When teachers use CBM to inform their instructional decisions, students achieve better.

Most Progress Monitoring: Mastery Measurement

CBM is **NOT**

Mastery Measurement

MASTERY MEASUREMENT Tracks Mastery of Short-term Instructional Objectives

To implement Mastery Measurement, the teacher

- Determines the sequence of skills in an instructional hierarchy
- For each skill, develops a criterion-referenced test

Hypothetical 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
10. Add/subtract whole number and mixed number

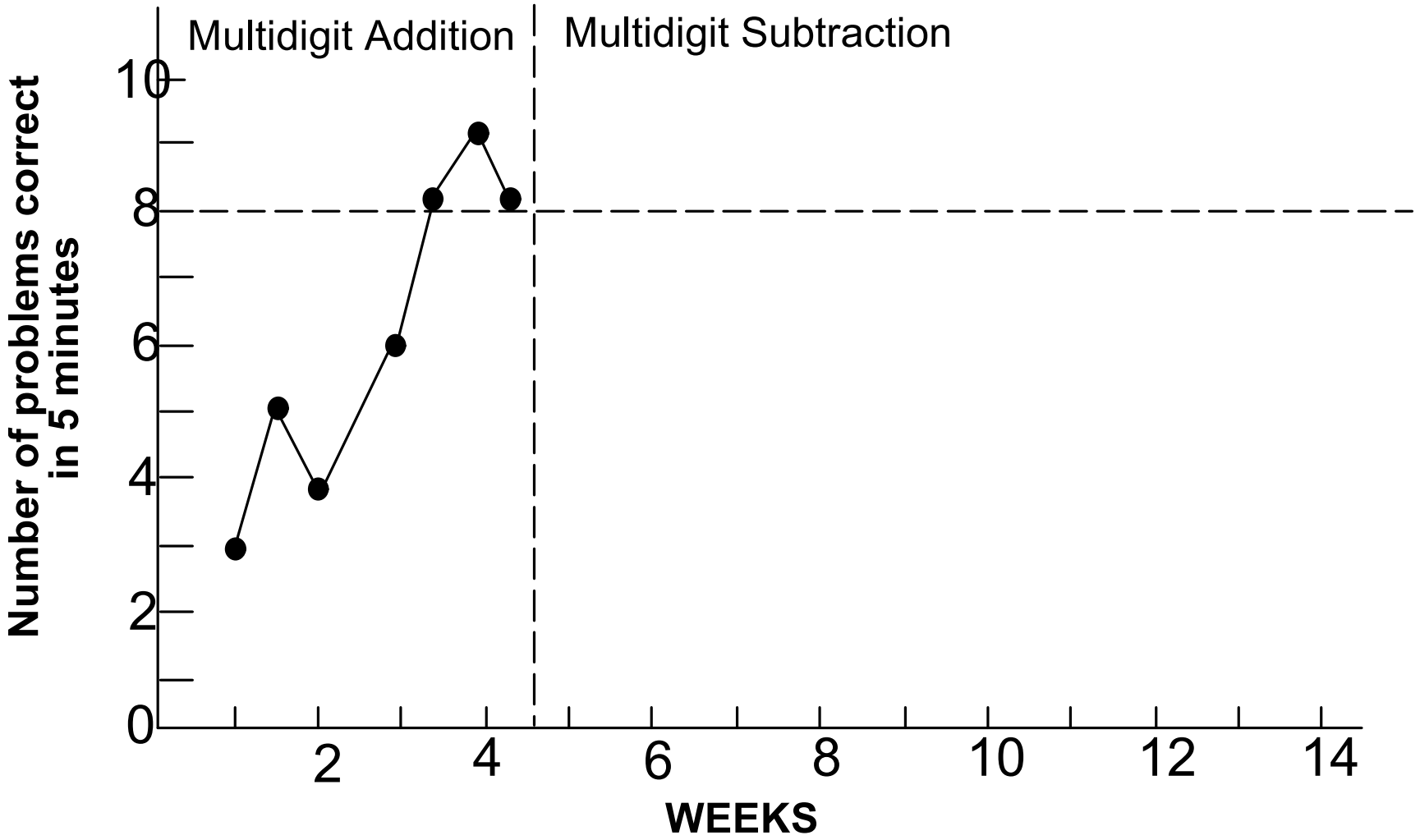
Multidigit Addition Mastery Test

Name: _____ Date_____

Adding

36521 + 63758	53429 + 63421	84525 + 75632	67842 + 53937	57321 + 46391
56382 + 94742	36422 + 57529	34824 + 69426	32415 + 85439	45321 + 86274

Mastery of Multidigit Addition



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8. Divide 3-digit numbers by a 1-digit number
9. Add/subtract simple fractions, like denominators
10. Add/subtract whole number and mixed number

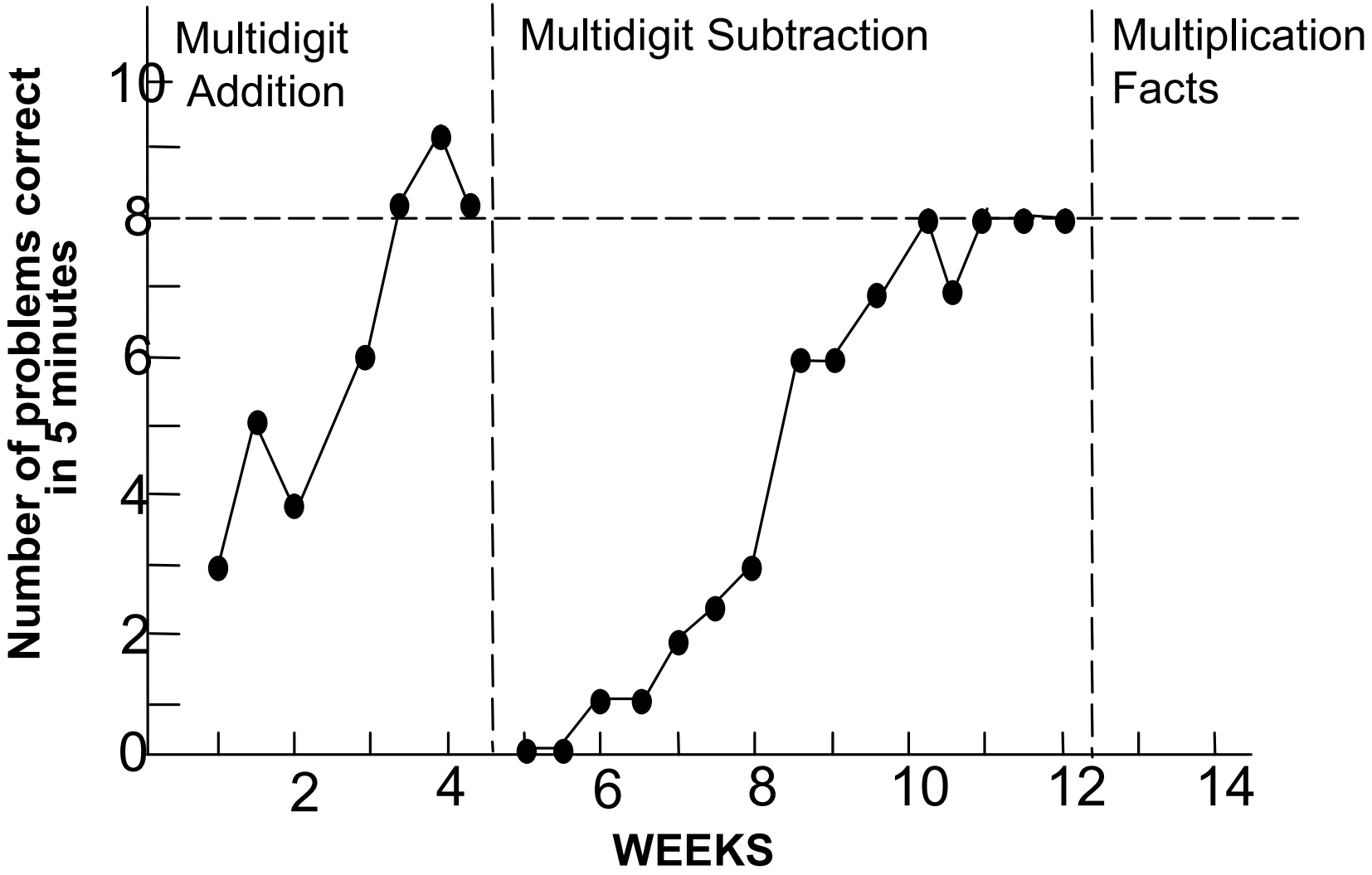
Multidigit Subtraction Mastery Test

Name:_____ Date_____

Subtracting

6521 - 375	5429 - 634	8455 - 756	6782 - 937	7321 - 391
5682 - 942	6422 - 529	3484 - 426	2415 - 854	4321 - 874

Mastery of Multidigit Addition and Subtraction



Problems with Mastery Measurement

- Hierarchy of skills is logical, not empirical.
- Performance on single-skill assessments can be misleading.
- Assessment does not reflect maintenance or generalization.
- Assessment is designed by teachers or sold with textbooks, with unknown reliability and validity.
- Number of objectives mastered does not relate well to performance on high-stakes tests.

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

An Example of CBM:

Math Computation

Hypothetical Fourth-Grade Math Computation Curriculum

Multidigit addition with regrouping

Multidigit subtraction with regrouping

Multiplication facts, factors to 9

Multiply 2-digit numbers by a 1-digit number

Multiply 2-digit numbers by a 2-digit number

Division facts, divisors to 9

Divide 2-digit numbers by a 1-digit number

Divide 3-digit numbers by a 1-digit number

Add/subtract simple fractions, like denominators

Add/subtract whole number and mixed number

- Random numerals within problems
- Random placement of problem types on page

Sheet #1 Computation 4

Password: ARM

Name: _____ Date _____

A $\frac{3}{7} - \frac{2}{7} =$	B $1\frac{6}{7} + 3 =$	C $4\overline{)6}$	D $6\overline{)78}$	E 875×7
F 6×7	G 9×0	H 244×7	I $6\overline{)48}$	J $5\overline{)20}$
K $2\overline{)50}$	L $6144 - 4420$	M 33×10	N 6×0	O $7\overline{)30}$
P $95225 + 75268$	Q $8\overline{)32}$	R $1156 + 2824 + 83$	S $7\frac{4}{7} - 2 =$	T 38×33
U $\frac{3}{5} + \frac{1}{5} =$	V $982 - 97$	W 9×5	X 4×1	Y $7\overline{)56}$

- Random numerals within problems
- Random placement of problem types on page

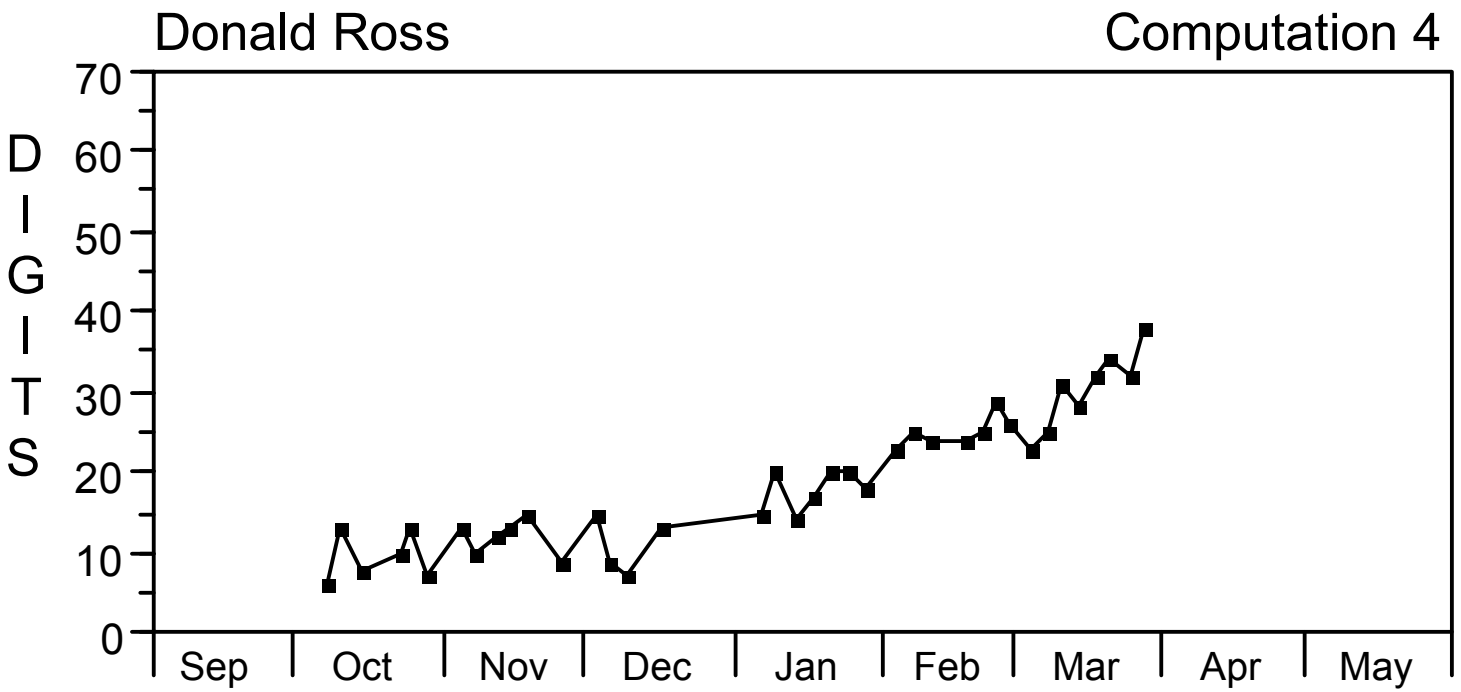
Sheet #2 Computation 4

Password: AIR

Name: _____ Date _____

A $9\overline{)24}$	B $52852 + 64708$	C 9×0	D $4\overline{)72}$	E $8285 + 4304 + 90$
F $6\overline{)30}$	G 35×74	H 4×5	I 7×9	J $\frac{2}{3} - \frac{1}{3} =$
K 32×23	L 8×6	M $5\overline{)65}$	N $6\overline{)30}$	O $3\frac{4}{7} - 1 =$
P 107×3	Q $2\overline{)9}$	R $416 - 44$	S $\frac{5}{11} + \frac{3}{11} =$	T 6×2
U $4\frac{1}{2} + 6 =$	V $1504 - 1441$	W $9\overline{)81}$	X 130×7	Y $5\overline{)10}$

Donald's Progress in Digits Correct Across the School Year



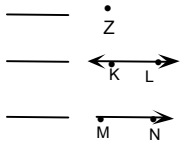
One page of a 3-page CBM in math concepts and applications (24 total problems)

Name _____ Date _____ Test 4 Page 1

Column A — Applications 4 — Column B

(1)

Write the letter in each blank.



(A) line segment

(B) line

(C) point

(D) ray

(2)

Look at this numbers.:

356.17

Which number is in the hundredths place? _____

(3)

Solve the problem by estimating the sum or difference to the nearest ten.

Jeff wheels his wheelchair for 33 hours a week at school and for 28 hours a week in his neighborhood. About how many hours does Jeff spend each week wheeling his wheelchair?

_____

(4)

Write the number in each blank.

3 ten thousands, 6 hundreds, 8 ones

_____

2 thousands, 8 hundreds, 4 tens, 6 ones

_____

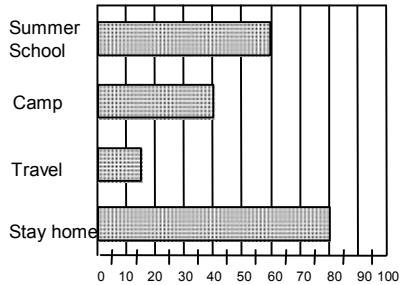
(5)

Write a number in the blank.

1 week = _____ days

(6)

Vacation Plans for Summit School Students



Use the bar graph to answer the questions.

The P.T.A. will buy a Summit School T-Shirt for each student who goes to summer school. Each shirt costs $4.00. How much money will the P.T.A. spend on these T shirts? $ .00

How many students are planning to travel during the summer? _____

How many fewer students are planning to go to summer school than planning to stay home? _____

(7)

To measure the distance of the bus ride from school to your house you would use

(A) meters

(B) centimeters

(C) kilometers

_____

Kindergarten
Computation

Test 1

Name: _____ Date: _____

* * * * ___	* * + * = ___	4 - 2 = ___	Cross out 2 *. * * * * ___
Cross out 4 *. * * * * * * * * ___	* * * * * ___	* + * * * * ___	0 + 4 = ___
2 + 2 = ___	5 - 1 = ___	Cross out 1 *. * * * ___	* + * * * = ___
3 - 3 = ___	Cross out 3 *. * * * * * * * * * * ___	1 + 4 = ___	* * * * * * * * * ___
* * * * + * * = ___	1 + 1 = ___	* ___	5 - 3 = ___

Kindergarten
Number Sense

Test 1

Name: _____ Date: _____

1) Which number is smaller? | 4 | 0 |

2) What number goes on the blank?

3) Put these numbers in counting order:

20 19 18 _____

4) Which number is closer to the number **3** ? **7** or **2**

5) Finish the pattern:

22	2	22	2	

6) What number comes next when you are counting backward?

13, _____

7) What is the name of this shape?

_____

Test 1

Computation 1

Name: _____ Date: _____

A 0 + 3	B 9 - 7	C 0 + 7	D 54 +33	E 7 + 3
F 10 - 0	G 8 + 1	H 2 + 5	I 6 - 3	J 8 - 5
K 11 - 1	L 8 - 1	M 10 - 7	N 2 6 + 1	O 6 - 2
P 65 +23	Q 45 - 4	R 5 + 1	S 8 1 + 1	T 7 - 5
U 8 + 1	V 99 - 8	W 10 - 3	X 7 + 3	Y 9 + 1

Name _____ Date _____ Test 1 Page 1

Column A — Applications 1 — Column B

(1)

Tickets Sold

Jenny ▭ ▭ ▭ ▭ ▭

Antonio ▭ ▭ ▭

Alex ▭ ▭ ▭ ▭

Krystal ▭ ▭

▭ = 1 ticket

How many tickets did Krystal sell?

_____

(2)

What number comes after 28?

28 _____

(3)

Write the letter for the shaded part in each blank.

(A) $\frac{1}{2}$

_____ (B) $\frac{1}{4}$

_____ (C) $\frac{1}{3}$

(4)

Of these numbers,

71 34 39

_____ is the smallest.

_____ is the largest.

(5)

Write + or - in the blank.

5 _____ 2 = 7

(6)

A B C D E F G H I J K L

Write the ninth letter. _____

(7)

Write the time.

___ : ___

Test 1

Computation 2

Name: _____ Date: _____

A 30 + 7	B 8 + 7	C 12 - 3	D 15 - 5	E 5 4 + 2
F 10 - 7	G 35 - 6	H 11 - 6	I 55 - 33	J 32 41 + 23
K 14 + 9	L 64 + 16	M 16 - 8	N 9 + 7	O 7 + 7
P 50 - 5	Q 83 - 67	R 254 - 20	S 5 + 3	T 15 - 7
U 30 + 32	V 6 - 5	W 4 + 6	X 12 - 6	Y 8 + 9

Name _____ Date _____ Test 1 Page 1

Column A — Applications 2 — Column B

(1)

Counting by 2's, fill in the blanks.

32, 34, 36, _____, _____

(2)

Write a number in each blank.

Of these numbers,

346 332 798

_____ is the smallest.
_____ is the largest.

(3)

Look at this group of numbers.

1 2 3 4 5 6 7

8 9 10 11 12 13 14

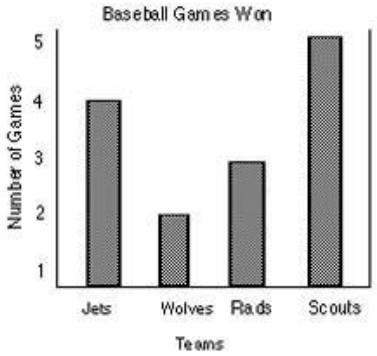
15 16 17 18 19 20

Write the sixteenth number. _____
Write the eleventh number. _____
Write the eighteenth number. _____

(4) How much money?

_____

(5)



Write a number in each blank.

How many games did the Jets win? _____

How many more games did the Jets win than the Rads? _____

How many fewer games did the Wolves win than the Scouts? _____

(6)

Write the number in the blank.

5 + 11 = _____ + 5

Test 1

Computation 3

Name: _____ Date: _____

A 7×8	B $684 + 97$	C 5×1	D 2×5	E $7\overline{)14}$
F $230 + 968$	G $53 - 28$	H 9×6	I $2\overline{)4}$	J 4×3
K 34×2	L 78×9	M $8\overline{)32}$	N $300 - 136$	O $2\overline{)8}$
P $328 - 74$	Q $7\overline{)49}$	R 0×9	S 2×3	T 0×4
U $2\overline{)6}$	Y 8×1	W $74 + 54$	X $81 - 55$	Y $604 - 237$

Name _____ Date _____ Test 1 Page 1

Column A

Applications 3

Column B

(1)
Measure to the nearest inch.

_____ in.

(2)
Write a letter in the blank.

About how much does a large cat weigh?

(A) 5 mg

(B) 5 g

(C) 5 kg

_____

(3)
Write the answer in the blank.

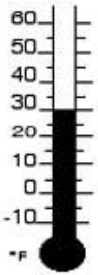
Bill collected 156 baseball cards. After his brother gives him 35 more cards, how many baseball cards does Bill have in all?

_____

(4) Write the time.

___ : ___

(5)
What is the temperature?



_____ °F.

(6) Write **<**, **>**, or **=** in each blank.

$\frac{1}{3}$ ____ $\frac{2}{3}$

$\frac{3}{4}$ ____ $\frac{2}{4}$

(7)
Write the number in the blank.

_____ seven hundred thirty-six

(8)
Write the letter **E** next to even numbers and the letter **O** next to odd numbers.

____ 18 ____ 7

Test 1 Computation 4

Name: _____ Date: _____

A $\frac{3}{7} - \frac{2}{7} =$	B $1\frac{3}{5} - 3 =$	C $4\overline{)6}$	D $6\overline{)78}$	E $\begin{array}{r} 875 \\ \times\ 7 \\ \hline \end{array}$
F $\begin{array}{r} 6 \\ \times\ 3 \\ \hline \end{array}$	G $\begin{array}{r} 9 \\ \times\ 0 \\ \hline \end{array}$	H $\begin{array}{r} 244 \\ \times\ 6 \\ \hline \end{array}$	I $7\overline{)49}$	J $5\overline{)25}$
K $2\overline{)50}$	L $\begin{array}{r} 6144 \\ -\ 4420 \\ \hline \end{array}$	M $\begin{array}{r} 33 \\ \times\ 10 \\ \hline \end{array}$	N $\begin{array}{r} 6 \\ \times\ 0 \\ \hline \end{array}$	O $7\overline{)30}$
P $\begin{array}{r} 95225 \\ +\ 75268 \\ \hline \end{array}$	Q $8\overline{)32}$	R $\begin{array}{r} 1156 \\ 2824 \\ +\ \ 83 \\ \hline \end{array}$	S $7\frac{2}{5} - 2 =$	T $\begin{array}{r} 38 \\ \times\ 33 \\ \hline \end{array}$
U $\frac{3}{5} + \frac{1}{5} =$	Y $\begin{array}{r} 982 \\ -\ \ 97 \\ \hline \end{array}$	W $\begin{array}{r} 9 \\ \times\ 5 \\ \hline \end{array}$	X $\begin{array}{r} 4 \\ \times\ 1 \\ \hline \end{array}$	Y $7\overline{)56}$

Name _____ Date _____ Test 1 Page 1

Applications 4

Column A

(1)

Use the graph to answer the questions.

How many words did Rachel spell correctly on Monday? _____

Rachel's friend Latasha spelled 3 times as many words correctly as Rachel did on Monday. How many words did Latasha spell correctly? _____

How many more words did Rachel spell correctly on Friday than on Monday? _____

(2)

Write a number in the blank.

1 hour = _____ minutes

(3)

Look at this number.

8,301

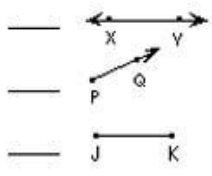
Which digit is in the hundreds place? ____

Which digit is in the thousands place? ____

Column B

(4)

Write the letter in each blank.



____ (A) line

____ (B) point

____ (C) ray

____ (D) line segment

(5)

Write the number in each blank.

$$2\overline{)9} \quad 4 \text{ R}1$$

The divisor is _____.

The dividend is _____.

The quotient is _____.

(6)

Complete the sequence.

51, 45, 39, ____, ____

(7)

Solve the problem by estimating the sum or difference to the nearest hundred.

The Jiffy Food Market sells 781 cartons of plain milk each week and 623 cartons of chocolate milk. About how many fewer cartons of chocolate milk are sold than plain milk?

_____

Test 1

Computation 5

Name: _____ Date: _____

A $\begin{array}{r} 47785 \\ 3335 \\ 4360 \\ +\ 148 \\ \hline \end{array}$	B $\begin{array}{r} 605 \\ \times\ 38 \\ \hline \end{array}$	C Rename as a mixed number: $\frac{22}{5} =$	D $3\frac{2}{5} + 2\frac{4}{5} =$	E $\frac{1}{3} + \frac{1}{4} =$
F $\frac{1}{8} + \frac{3}{4} =$	G $\begin{array}{r} 43245 \\ -\ 20568 \\ \hline \end{array}$	H $\begin{array}{r} 684 \\ \times\ 23 \\ \hline \end{array}$	I $3\frac{1}{5} - 1\frac{3}{5} =$	J Reduce: $\frac{3}{9} =$
K $17\overline{)85}$	L $6\overline{)720}$	M $\frac{3}{4} - \frac{1}{5} =$	N $\begin{array}{r} 63057 \\ -\ 20563 \\ \hline \end{array}$	O Rename as an improper fraction: $2\frac{3}{4} =$
P $20\overline{)24}$	Q $\begin{array}{r} 63774 \\ +\ 77517 \\ \hline \end{array}$	R $\frac{2}{3} + \frac{2}{3} =$	S $\begin{array}{r} 5.23 \\ +\ 6.9 \\ \hline \end{array}$	T Rename as an improper fraction: $8\frac{4}{7} =$
U $7\overline{)563}$	V $\begin{array}{r} 4.3 \\ -\ 1.26 \\ \hline \end{array}$	W $\frac{11}{12} - \frac{1}{3} =$	X Rename as a mixed number: $\frac{19}{4} =$	Y Reduce: $\frac{4}{10} =$

Name _____ Date _____ Test 1 Page 1

Column A — Applications 5 — Column B

(1)

Write the number in the blank.

seven hundred eighty thousand, two hundred fifteen

_____

(2)

Tom went to the movies and bought popcorn for $2.50, a drink for $1.25, and a box of candy for $1.75. He gave the clerk a $10.00 bill and received change in the least number of bills and coins. How many of each were there? (If none, write the number zero.)

___ $5 bills ___ $1 bills ___ quarters

(3)

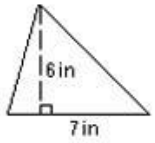
Find the average of these numbers.

19, 7, 12, 8, 9

Arithmetic mean = _____

(4)

Area of triangle = 1/2 x base x height



Area = _____ sq. in.

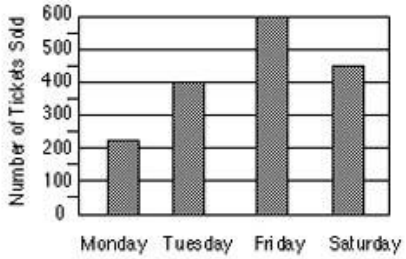
(5)

Write the number for the Roman numeral in the blank.

_____ CCXL

(6)

Tickets Sold for Baseball at Crow Valley Stadium



Write your answer to the nearest hundred.

Crow Valley Stadium has 600 seats. If all the people who buy tickets on Monday attend the game, about how many seats will be empty?

_____

Crow Valley Stadium will sell the remaining tickets for Tuesday's game at the gate for $2.00. If they sell all the remaining tickets, how much money will they get?

$____.00

(7)

Round to the nearest thousand:

44,201 _____

Test 1 Computation 6

Name: _____ Date: _____

A $\frac{3}{5} - \frac{1}{3} =$	B 2.66×5.4	C $5\frac{3}{5} - 3\frac{4}{5} =$	D $15961 + 92307$	E $43245 - 20568$
F $2.591 - 7.6588$	G $65983 + 56937$	H $.13\overline{)720}$	I $122\overline{)8614}$	J $3 \times \frac{1}{2} =$
K 5952×246	L $7\frac{4}{7} + 1\frac{2}{3} =$	M $45\overline{)65}$	N $3\frac{1}{3} + 8\frac{2}{3} =$	O $3.4423 - 1.33$
P $\frac{2}{5} \times \frac{2}{5} =$	Q $81\overline{)9301}$	R $\frac{3}{4} \div \frac{7}{9} =$	S $1.3\overline{).598}$	T $\frac{7}{9} + \frac{2}{3} =$
U 3596×168	Y $7 \div \frac{2}{5} =$	W 5952×246	X $9\frac{3}{7} - 3\frac{4}{7} =$	Y $55867 - 32719$

Name _____ Date _____ Test 1 Page 1

Applications 6

Column A | Column B

(1)

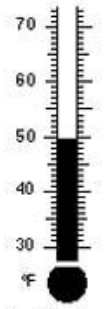
Write **P** if the number is a prime number and **C** if the number is a composite number.

____ 2 ____ 94

(2)

$7^2 =$ ____

(3)



last night's temperature

When Emily woke up, the temperature was 42° F. By how many degrees did the temperature fall?

_____ ° F

(4)

Which expression matches the phrase:

The difference between y and 19?

(A) $y - 19$

(B) $\frac{19}{y}$

_____ (C) $y + 19$

If $y = 25$, then the value of the expression is

(5)

Rename if necessary.

$$\begin{array}{r} 3\text{ m } 92\text{ cm} \\ +\ 7\text{ m } 15\text{ cm} \\ \hline \end{array}$$

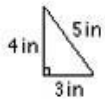
___m ___cm

(6)

15 girls wore pink dresses, 25 wore blue dresses, 7 wore purple dresses and 2 wore green dresses. Write the ratio of green dresses to purple dresses, using the word "to."

_____

(7)



(A) acute

(B) obtuse

(C) right

What kind of triangle? _____

(8)

Express 7% as:

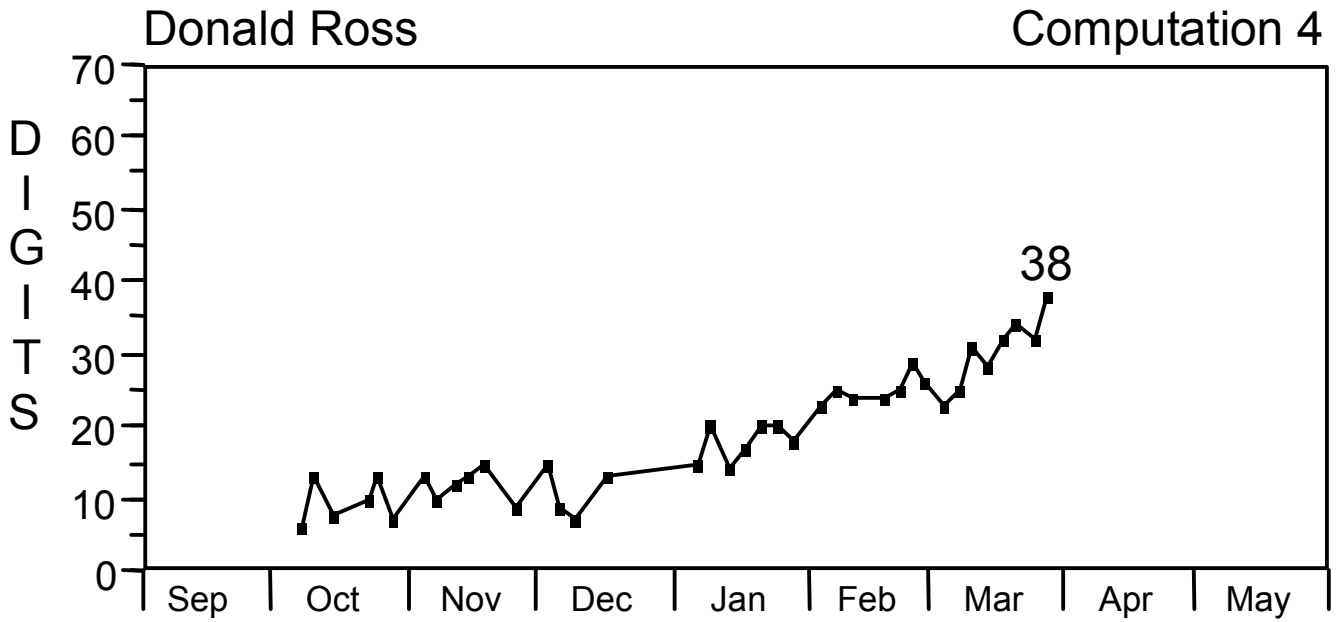
a decimal _____

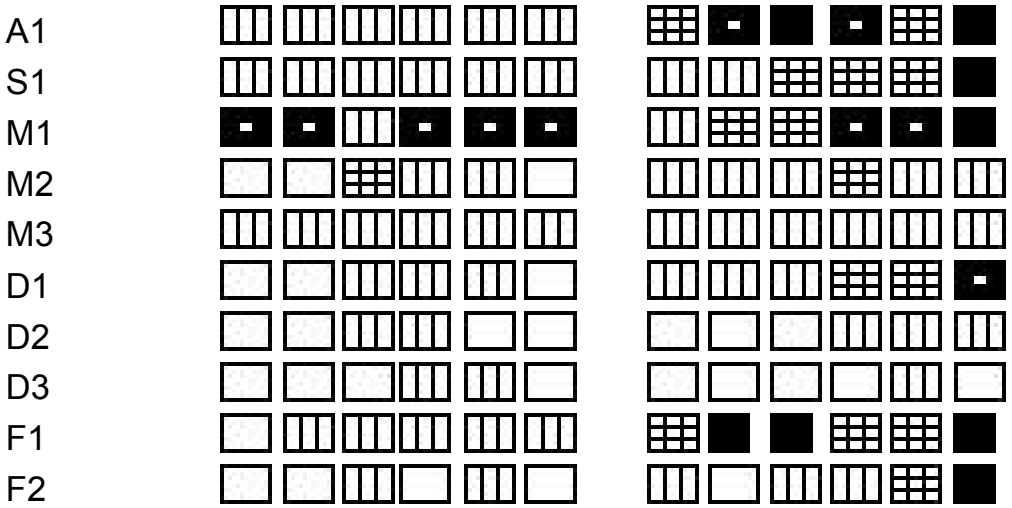
a fraction with denominator of 100 _____

(9)

2:5 is the same as ___:15

Donald's Graph and Skills Profile





Darker boxes = greater level of mastery.

Sampling performance on year-long curriculum for each CBM

- Avoids need to specify a skills hierarchy
- Avoids single-skill tests
- Automatically assesses maintenance/generalization
- Permits standardized procedures for sampling the curriculum, with known reliability and validity
- SO THAT: CBM scores relate well to performance on high-stakes tests

Two CBM Methods for Representing Year-Long Performance

Method #1:

Systematically sample items from the annual curriculum (illustrated in Math CBM, just presented)

Method #2:

Identify a global behavior that simultaneously requires the many skills taught in the annual curriculum (illustrated in Reading CBM, presented next)

Hypothetical Grade 2 Reading Curriculum

- Phonics
  - cvc patterns
  - cvce patterns
  - cvvc patterns . . .
- Sight Vocabulary
- Comprehension
  - Identification of who/what/when/where
  - Identification of main idea
  - Sequence of events
- Fluency

Grade 2 Reading CBM

- Each week, every student reads aloud from a different second-grade passage for 1 minute
- Each week's passage is the same difficulty
- As student reads, teacher marks errors
- Count number of words read correctly
- Graph scores

CBM

- Not interested in making kids read faster
- Interested in kids becoming better readers
- The CBM score is an overall indicator of reading competence
- Students who score high on CBM
  - Are better decoders
  - Are better at sight vocabulary
  - Are better comprehenders
- Correlates highly with high-stakes tests

CBM passage for Correct Words Per Minute

Mom was going to have a baby. Another one! That is all we need thought Samantha who was ten years old. Samantha had two little brothers. They were brats. Now Mom was going to have another one. Samantha wanted to cry.

"I will need your help," said Mom. "I hope you will keep an eye on the boys while I am gone. You are my big girl!"

Samantha told Mom she would help. She did not want to, thought. The boys were too messy. They left toys everywhere. They were too loud, too. Samantha did not want another baby brother. Two were enough.

Dad took Samantha and her brothers to the hospital. They went to Mom's room. Mom did not feel good. She had not had the baby. The doctors said it would be later that night. "I want to wait here with you," said Samantha. "Thank you Samantha. But you need to go home. You will get too sleepy. Go home with Grandma. I will see you in the morning," said Mom.

That night Samantha was sad. She knew that when the new baby came home that Mom would not have time for her. Mom would spend all of her time with the new baby.

The next day Grandma woke her up. "Your mom had the baby last night," Grandma said. "We need to go to the hospital. Get ready. Help the boys get ready, too."

Samantha slowly got ready. She barely had the heart to get dressed. After she finished, she helped the boys. They sure were a pain! And now another one was coming. Oh brother!

Soon they were at the hospital. They walked into Mom's room. Mom was lying in the bed. Her tummy was much Smaller. Samantha . . .

What We Look For in CBM

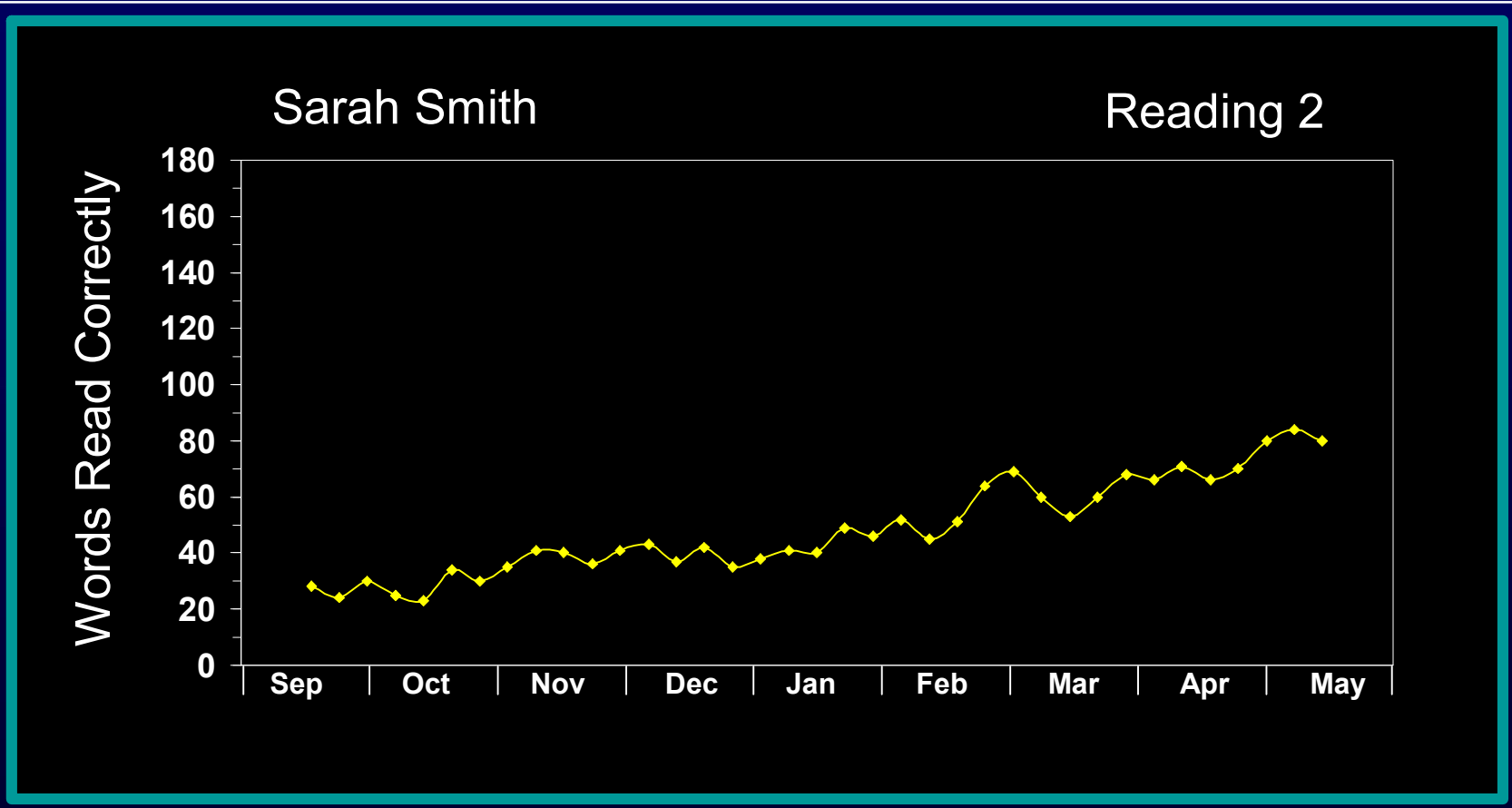
INCREASING SCORES:

Student is becoming a better reader.

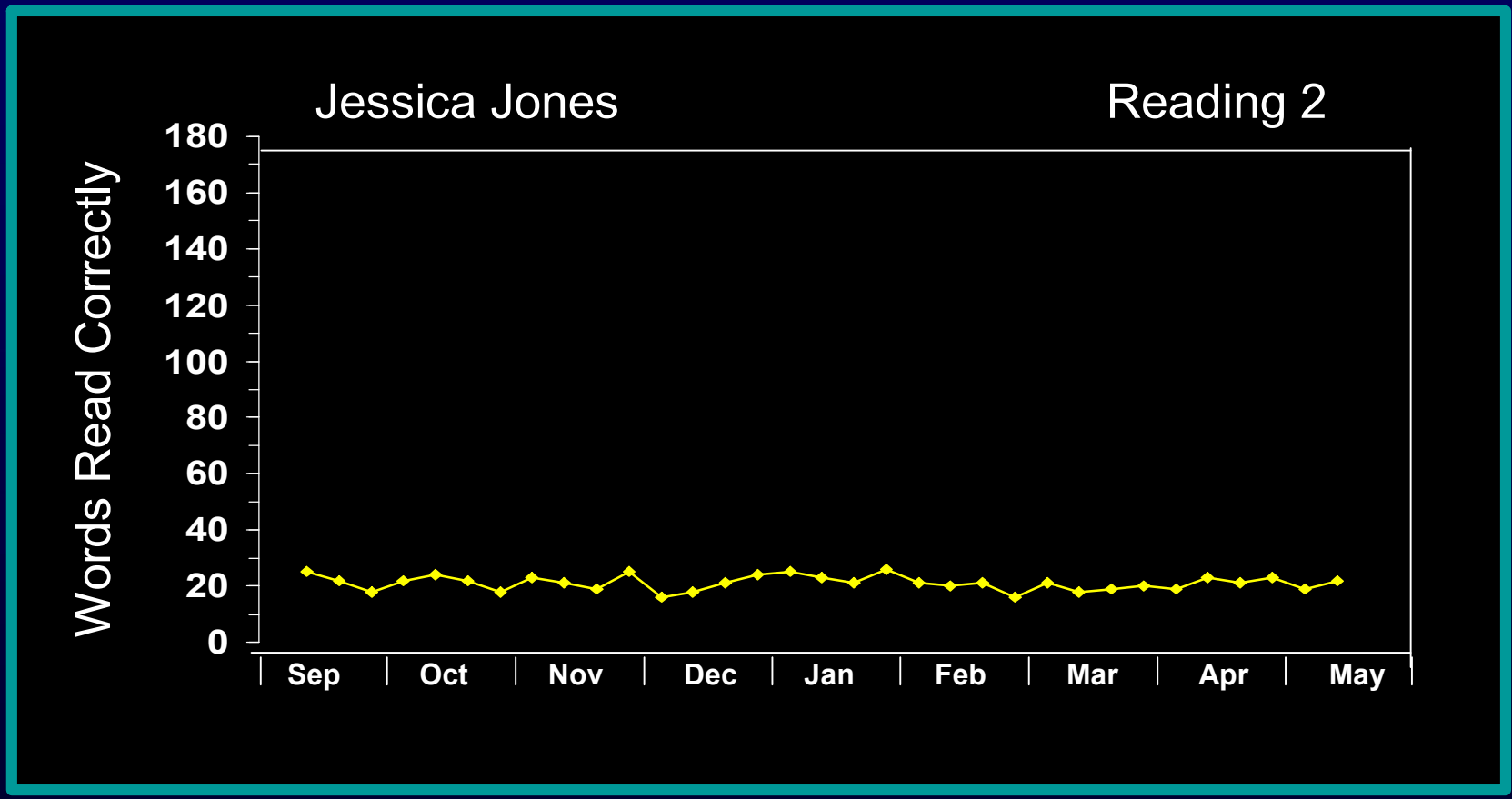
FLAT SCORES:

Student is not profiting from instruction and requires a change in the instructional program.

Sarah's Progress on Words Read Correctly



Jessica's Progress on Words Read Correctly



Reading CBM

- Kindergarten: Letter-Sound Fluency
- Grade 1: Word-Identification Fluency
- Grades 2-3: Passage Reading Fluency
- Grades 4-6: Maze Fluency

Kindergarten Letter-Sound Fluency

Teacher: ***Say the sound that goes with each letter.***

Time: 1 minute

p	**U**	**z**	**u**	**y**
i	**t**	**R**	**e**	**w**
O	**a**	**s**	**d**	**f**
v	**g**	**j**	**S**	**h**
k	**m**	**n**	**b**	**V**
Y	**E**	**i**	**c**	**x**

…

Grade 1
Word-Identification Fluency

Teacher: ***Read these words.***

Time: 1 minute.

two

for

come

because

last

from

...

Grades 2-3
Passage Reading Fluency

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

Grades 4-6
Maze Fluency

- Number of words replaced correctly in 2.5 minutes on end-of-year passages from which every 7th word has been deleted and replaced with 3 choices

Computer Maze

A SCARY NOISE

Ray lived in Georgia. He was born there and had _____ friends. One day Dad had come home _____ work 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

Using CBM to Enhance Teaching Plans and Student Learning

Tier 1 (General Education)

1. Screen to identify suspected risk
**2. Formulate instructional plans
3. Quantify response to confirm risk

Tier 2 (Small-Group Tutoring)

1. Quantify response

Tier 3 (Special Education)

1. Set/Monitor progress toward IEP goals
**2. Design effective individualized programs
3. Quantify response

At Tier 1:
CBM for ALL
Weekly Testing
Class Reports Every 2 Weeks

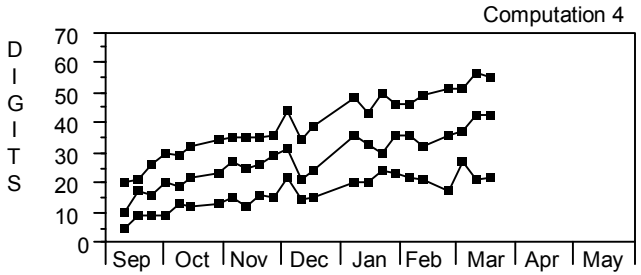
- To document student progress
- To catch students not on track for benchmark
- To plan more effective instruction

In general education, the focus is on the class report to enhance instruction for <u>all</u> 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

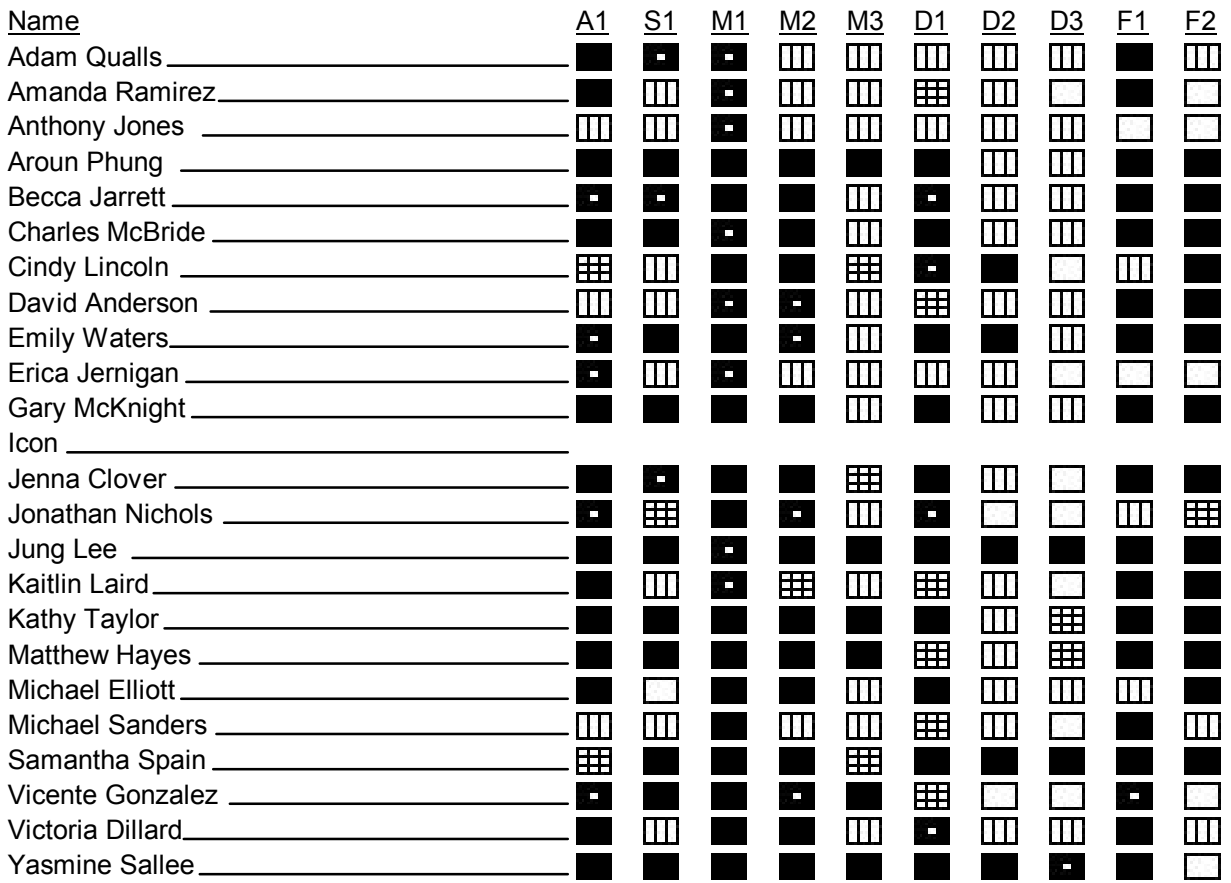
Cindy Lincoln
Icon
Kaitlin Laird
Michael Elliott
Michael Sanders

Class Skills Profile -- by problem type for each student

CLASS SKILLS PROFILE - Computation

Teacher: Mrs. Smith

Report through 3/17



	A1	S1	M1	M2	M3	D1	D2	D3	F1	F2
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

Name	Score	Growth
Samantha Spain	57	+1.89
Aroun Phung	56	+1.60
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
Icon	0	+0.00

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

PEER TUTORING ASSIGNMENTS

Teacher: Mrs. Smith

Report through 3/17

M2 Multiplying by 1 digit	First Coach	Second Coach
	Samantha Spain	Icon
	Kathy Taylor	Erica Jernigan
	Aroun Phung	Adam Qualls
	Emily Waters	Michael Sanders
	Charles McBride	Amanda Ramirez
	David Anderson	Anthony Jones

M3 Multiplying by 2 digits	First Coach	Second Coach
	Matthew Hayes	Becca Jarrett
	Cindy Lincoln	Kaitlin Laird
	Jung Lee	Victoria Dillard
	Yasmine Sallee	Gary McKnight
	Vicente Gonzalez	Michael Elliott
	Jenna Clover	Jonathan Nichols

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

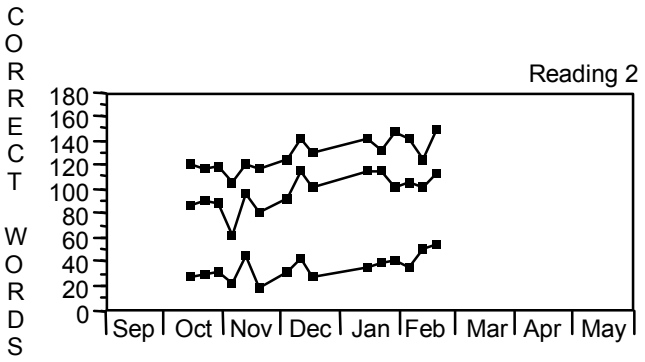
	Score	Slope
Anthony Jones	19.0	+0.05
Erica Jernigan	18.0	+0.23

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

Fluency Practice

Phonics Instruction

MAT/LAST
Ladarius Freeman
Mario Houston
Nathanial Anderson

TIME
Ladarius Freeman
Mario Houston
Nathanial Anderson

CAR

BEAT

HAPPY
Jalisha Sizemore
Shana Harmon

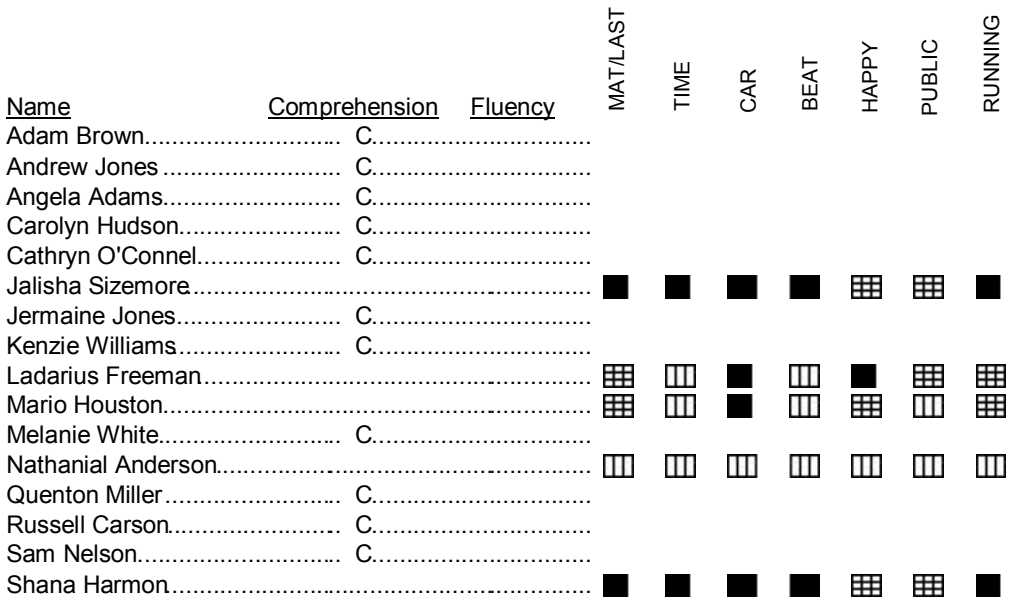
PUBLIC
Jalisha Sizemore
Shana Harmon

RUNNING

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

CLASS SKILLS PROFILE

Teacher: Mrs. Jones
Report through 2/15



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

Class Scores

Teacher: Mrs. Jones
Report through 2/15

Name	Score	Growth
*** The following student(s) are currently at or above end-of-year benchmark.**		
Jermaine Jones	146	+1.17
Kenzie Williams	133	+1.32
Wilson Carter	132	+3.05
Carolyn Hudson	132	+2.37
Cathryn O'Connel	123	+0.80
Angela Adams	122	+0.30
Sam Nelson	120	-0.31
Andrew Jones	115	+0.49
Russell Carson	106	+1.40
Adam Brown	105	+1.61
Quenton Miller	104	+2.61
Melanie White	93	+1.55
Shana Harmon	77	+0.69
*** The following student(s) are currently below end-of-year benchmark.**		
Mario Houston	58	+0.95
Jalisha Sizemore	54	+1.21
Ladarius Freeman	38	+0.90
*** The following student(s) are currently below previous year's benchmark.**		
Nathanial Anderson	17	+0.45

Quantifying Response

- So, CBM is used to quantify response to instruction, via slope (weekly rate of improvement), to Tier 1 instruction.
- If slope is inadequate at Tier 1, then student progresses to Tier 2, where CBM is used to assess response to a standard, research-validated tutoring protocol.
- If slope is inadequate to Tier 2 standard protocol, then student progresses to Tier 3, where instruction is inductively formulated with CBM to meet individual needs.
- At Tier 3, CBM is also used to quantify response to formulate decisions about exiting special education, to return students to Tier 1 or Tier 2 as soon as possible.

Using CBM At Tier 3 within Special Education

1. Set IEP goals

**2. Design effective individualized programs

3. Quantify response (return to GE)

Designing Individualized Programs

- Teachers use the graphed scores to monitor student progress toward the goal.

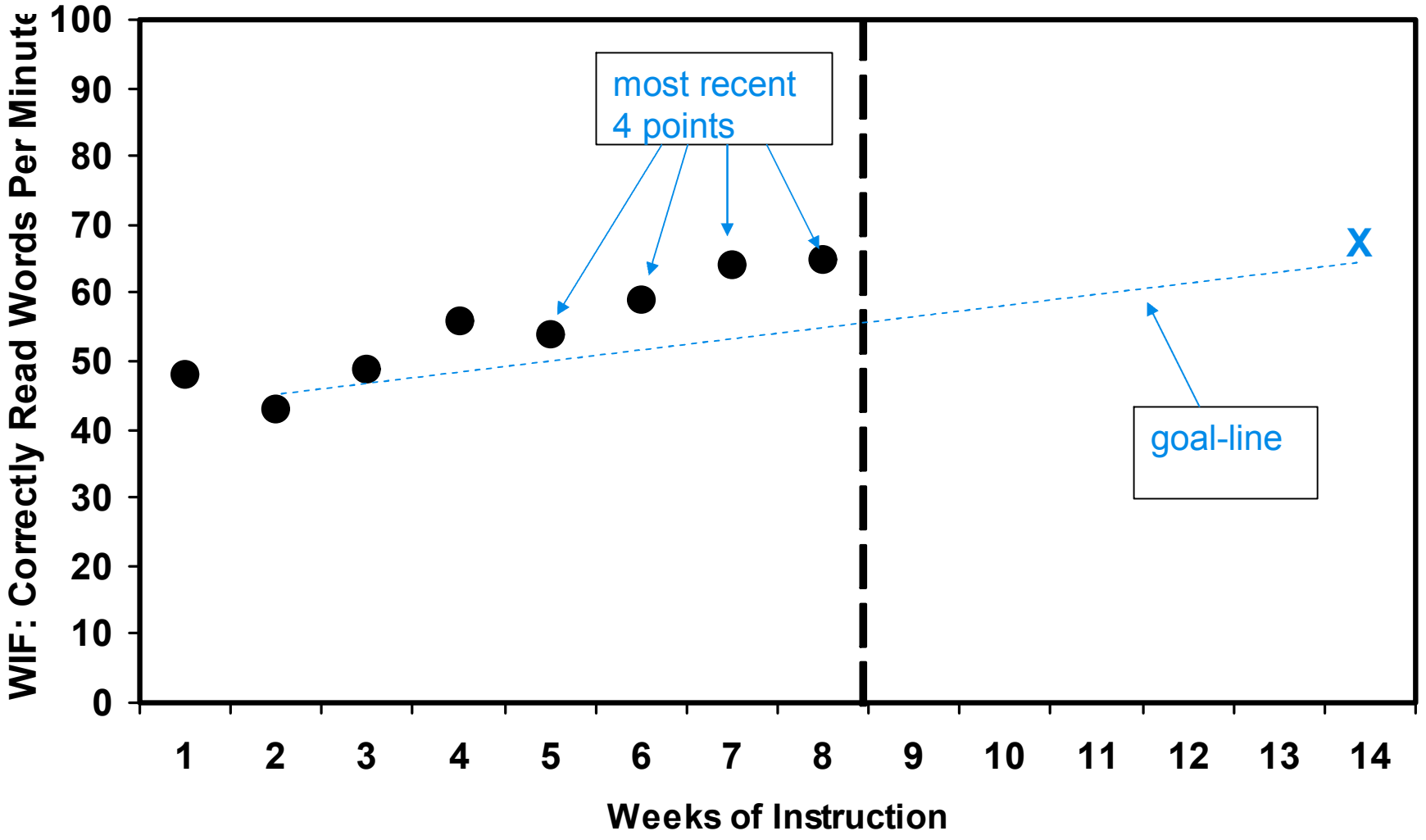
Designing Individualized Programs

Based on 4 most recent

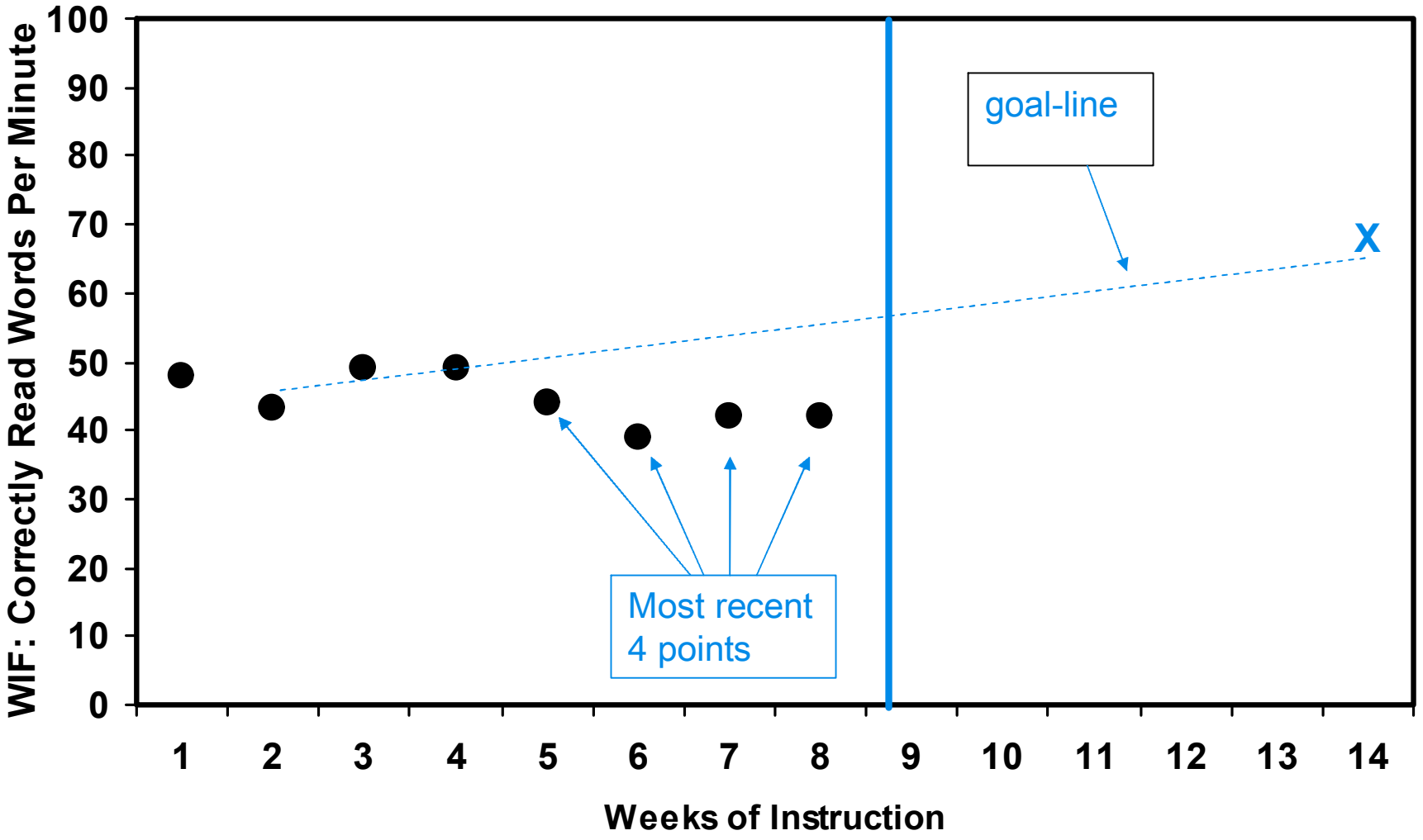
consecutive scores

- If all 4 scores fall above goal-line, increase end-of-year goal.
- If all 4 scores are fall below goal-line, revise instructional program.

Designing Individualized Programs



Designing Individualized Programs



Designing Individualized Programs

- If 4 consecutive scores don't fall above/below goal line, then wait until there are 8 new scores since the last goal or instructional change.
- Based on the 8 new scores, draw a trend line representing student's actual rate of progress.

Designing Individualized Programs

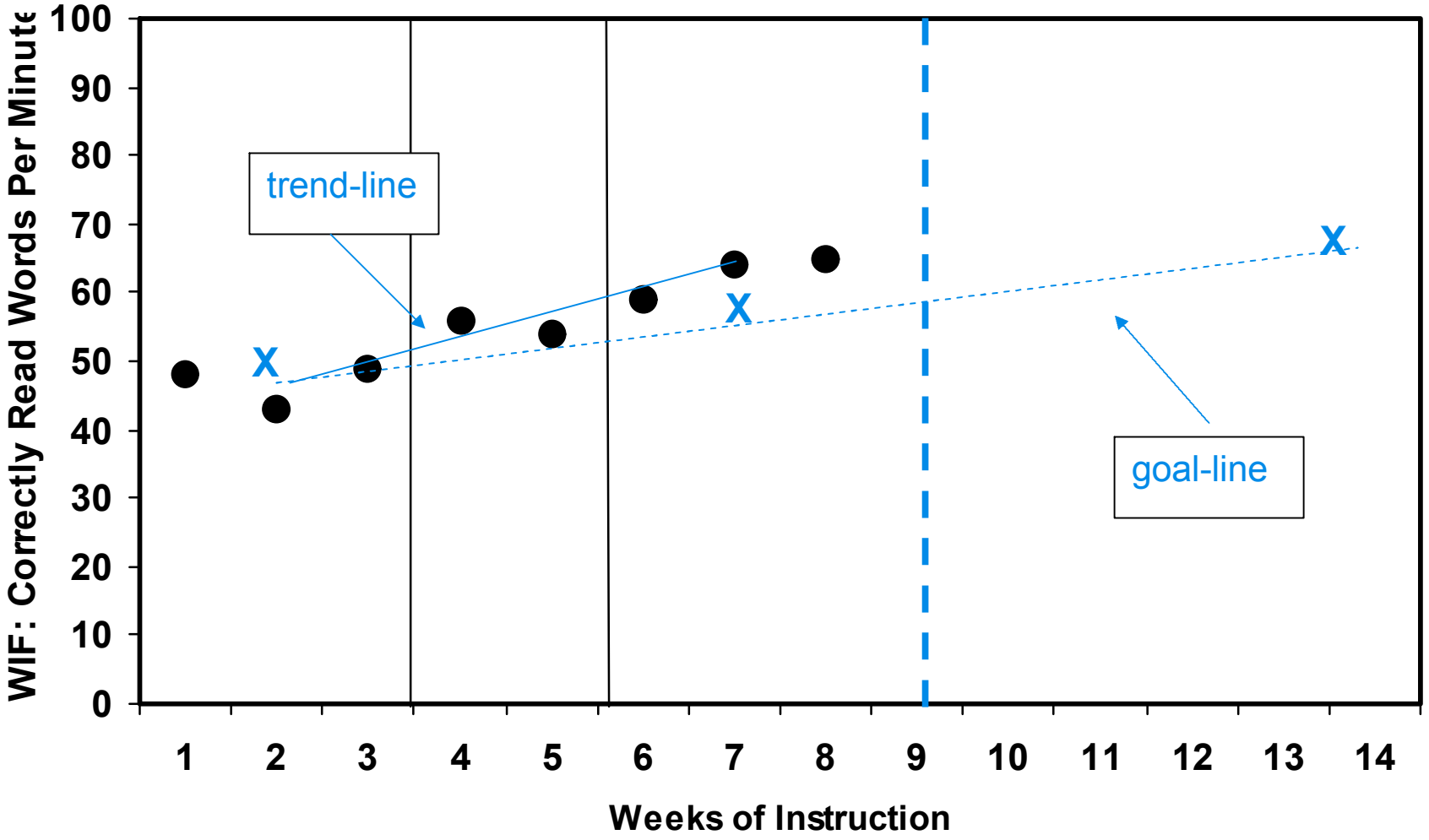
- If working without computer, draw the student's trend-line using the Tukey method (contact flora.murray@vanderbilt.edu for directions).
- CBM computer management programs are available to graph and aid teachers with instructional decisions.
- Various types available for varying fees

Designing Individualized Programs

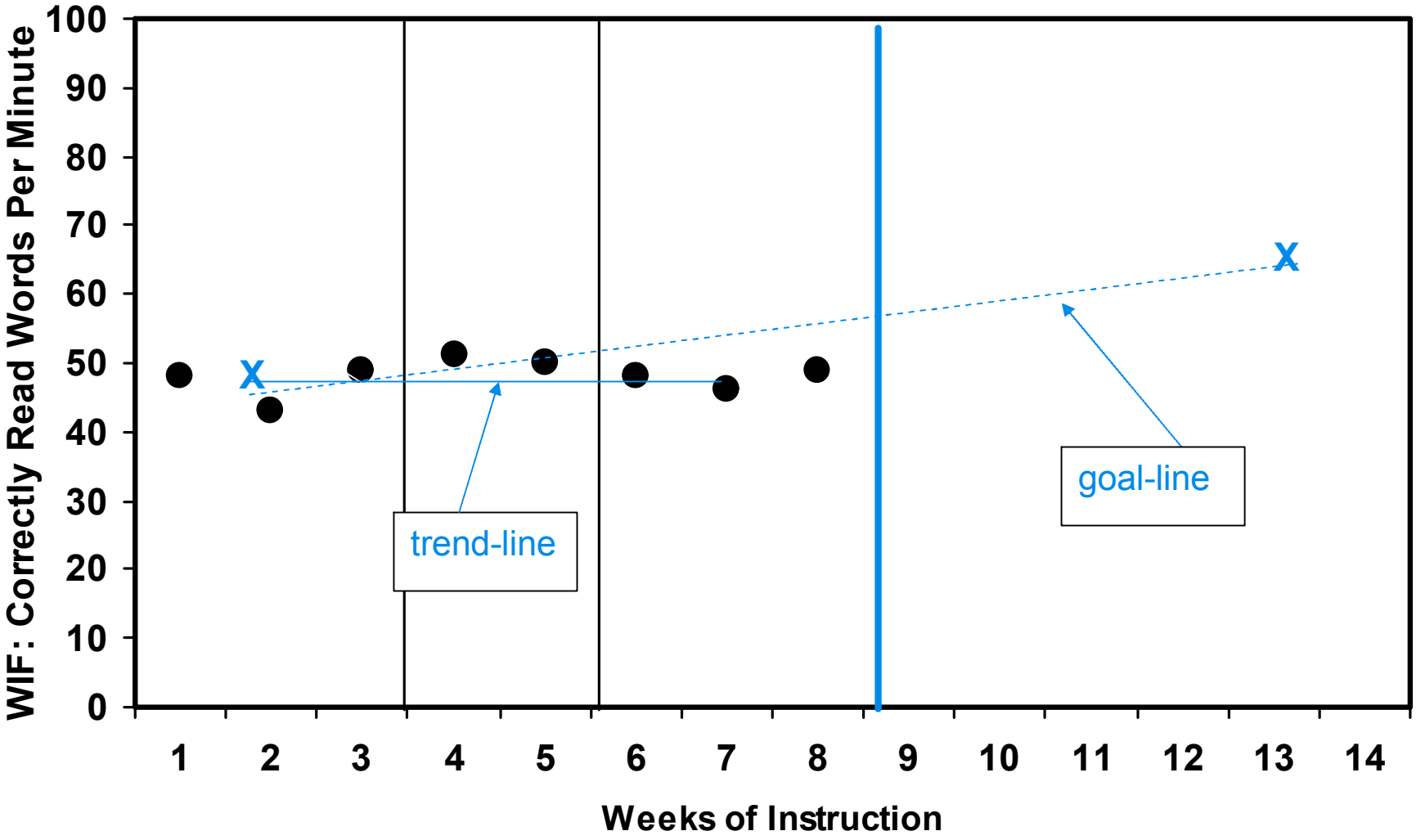
Compare the trend line to the goal line

- If trend line is steeper than goal line, increase goal.
- If trend line is flatter than goal line, revise the instructional program.
- If trend line equals goal line, make no change at that time.

Designing Individualized Programs



Designing Individualized Programs

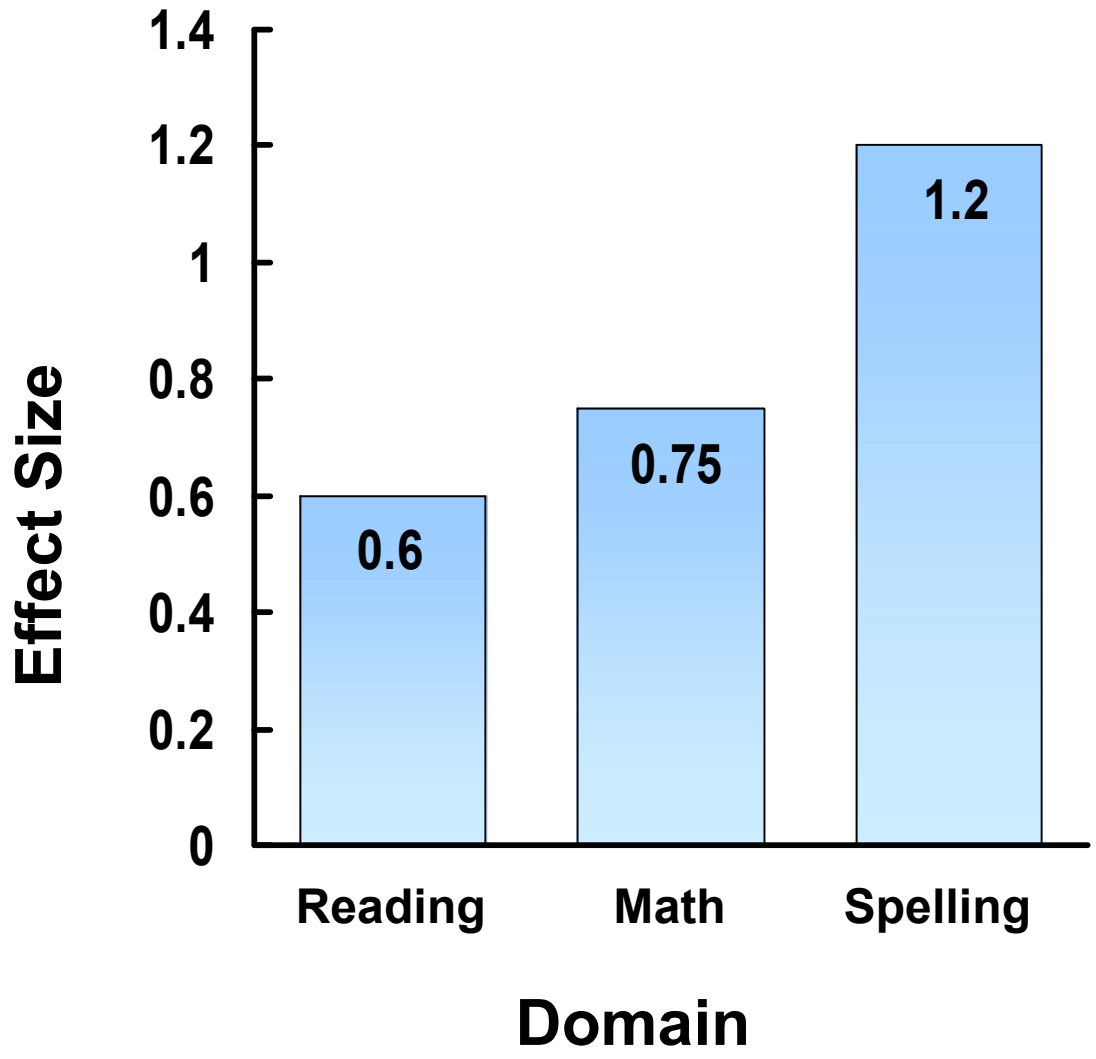


Special Educators Who Use CBM in This Way

- Design superior instructional programs that are more individualized
- Employ more ambitious goals
- Effect dramatically superior student learning outcomes

These effects have been documented with numerous randomized controlled field studies in reading, math, and spelling.

Effect Sizes When Teachers Use CBM to Guide Instruction



CBM Materials

- McGraw-Hill: Web-based math and reading systems
- Pro-Ed, Inc.: Math computation and concepts/applications tests (Monitoring Basic Skills Progress; you need the "kits" for directions)
- Vanderbilt University: reading tests (flora.murray@vanderbilt.edu)
- www.studentprogress.org

In Sum …, CBM

- Is a research-validated form of progress monitoring
- Is a signature feature of effective Tier 3 for individualizing instruction for students who do not respond to validated tutoring protocols at Tier 2
- Is essential for documenting response (i.e., improvement) at all three tiers of instruction