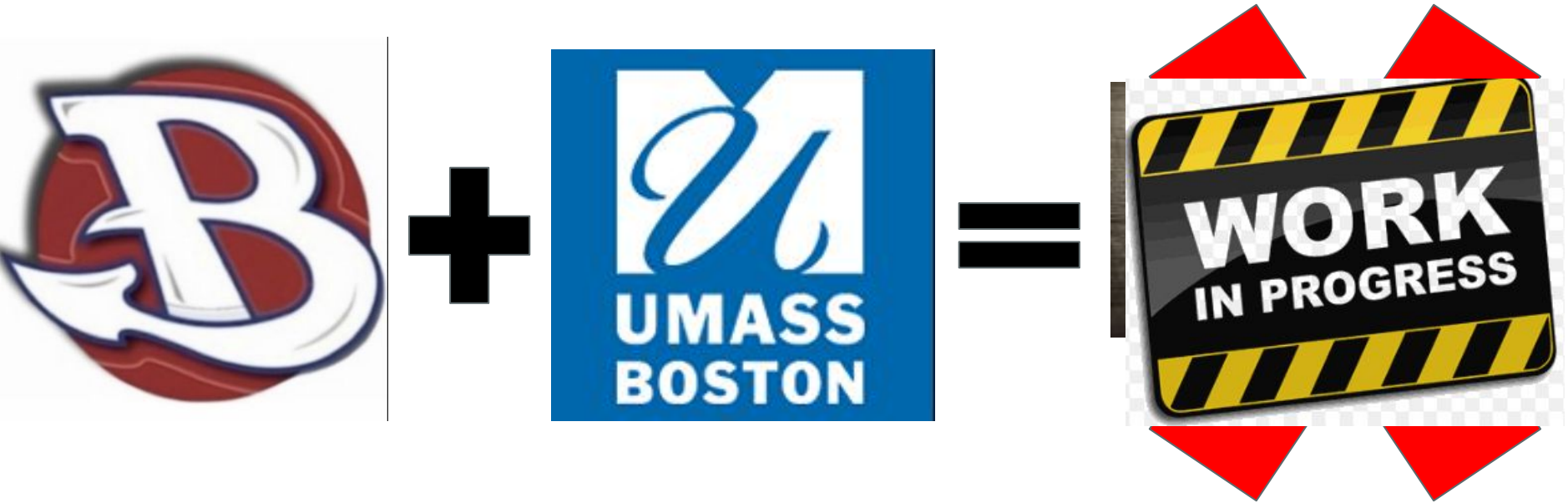


Defining: Number Concept & Number Sense

Carrie Fortunato
NCTM

4/6/17

One District's Journey



Define: Number Concept and Number Sense

Number Concept-

Number Sense-

Burlington's Definition of....

Number Concept-

1. 1:1 Correspondence with Sequencing
2. Number Recognition
3. Subitizing/ Visual Clustering
4. Lexical Entry of Number
5. Decomposition/Recomposition of Numerals

Number Sense-

1. Number Concept
2. Number Combinations
3. Place Value
4. Computation
5. Application of Word Problems

*Adapted from Mahesh Sharma- Professor
at the Center for Teaching Mathematics for
All*

Materials

To Build, to borrow, or to buy?

When Building:

What format? Who helps? What does it take? What is the best way to distribute?

When Borrowing:

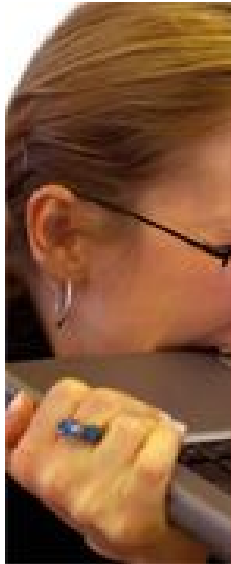
Why adapt? What is wrong with existing materials?

When Buying:

Where do we find evidence-based materials?

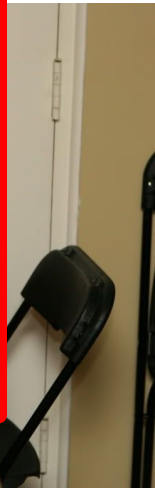
What is the cost?

Are We Missing Anything?



Usability!

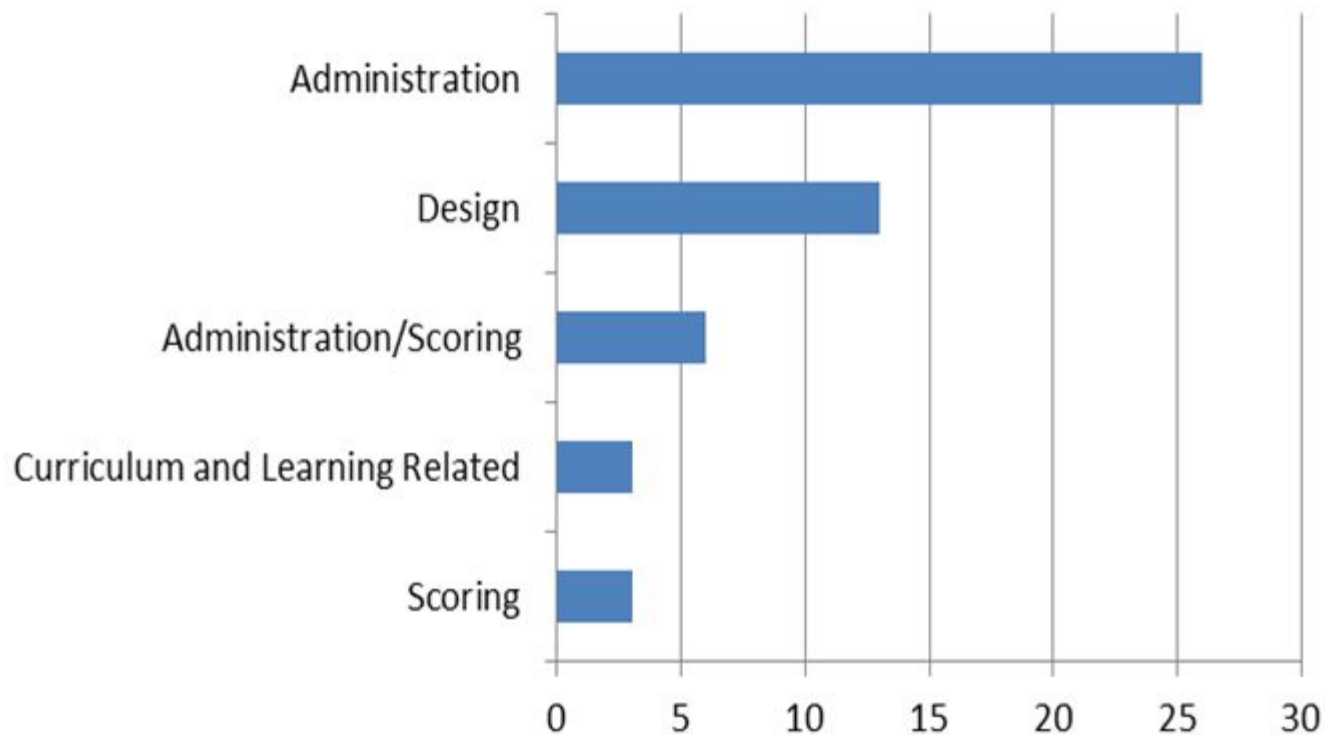
Will teachers even use the assessments? What do we need to do to make them usable?



Buy-In for the eNumeracy System by Measuring **Usability**



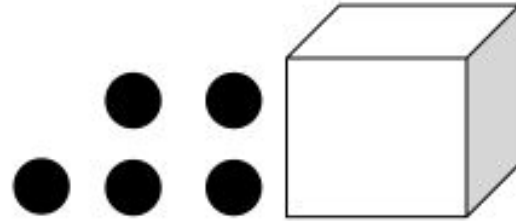
K Teacher Focus Group Results



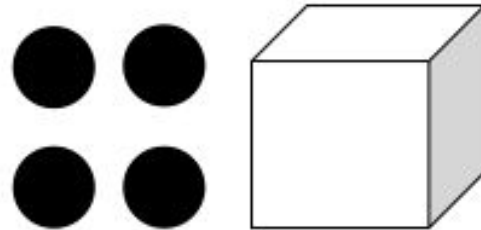
Decomposing Numerals:

Version 1

7

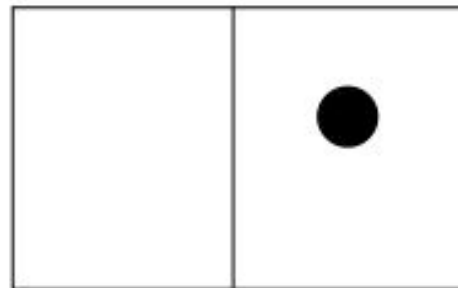
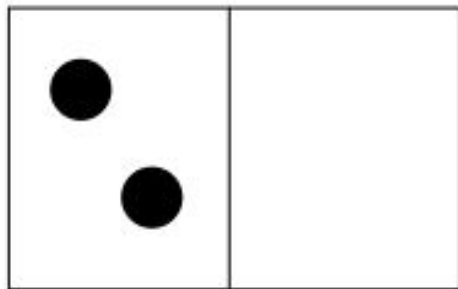


8



Decomposing Numerals:

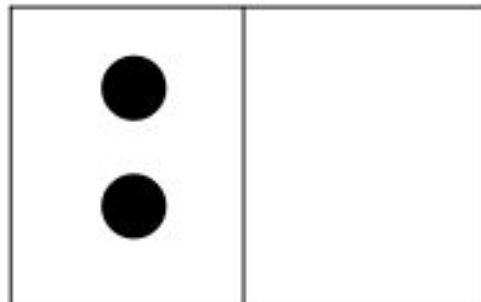
Version 2



Decomposing Numerals:

Version 3

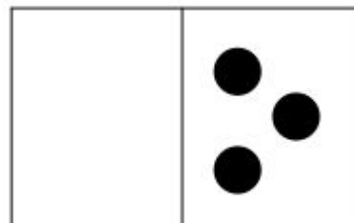
5



Prepare	► The DECOMPOSING NUMERALS demonstration item should be in front of the student.
Say	► The number 4 [point] tells me how many dots altogether. I can only see 3 dots [point]. That means 1 dot goes here [point] because 3 [point] and 1 is 4 [point to the 4].
Do	► Turn the page.

Demonstration Item

4

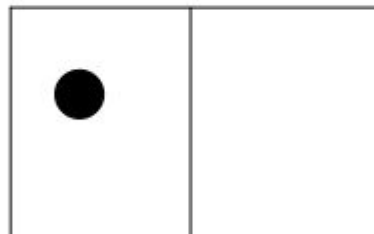




Prepare ►	The DECOMPOSING NUMERALS practice item should be in front of the student.
Say ►	Now it's your turn. How many dots go here? [point] <u>Correct response:</u> Correct. Let's try some more. <u>Incorrect response:</u> Look. There are 3 dots altogether [point]. 2 dots go here [point] because 1 and 2 is 3 [point]. Let's try some more.
Do & Say ► 	Start the timer then turn the page to the first test item. Say, What number goes here? [point]. You may use the prompt "What number goes here?" as many times as necessary.

3

Practice Item

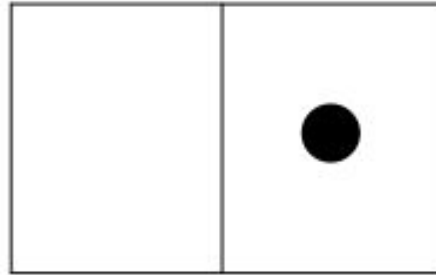


Decomposing Numerals:

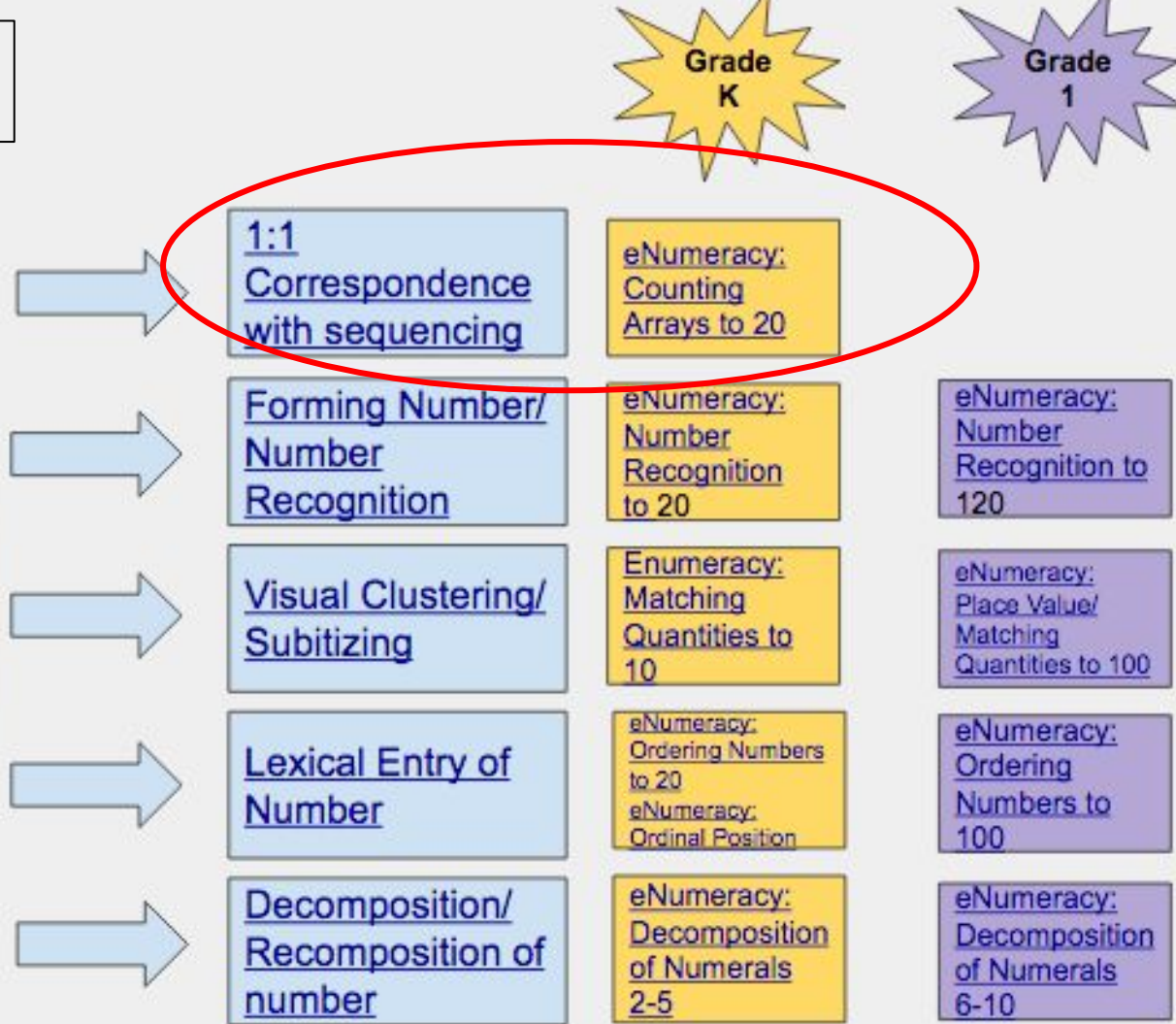
Version **4**

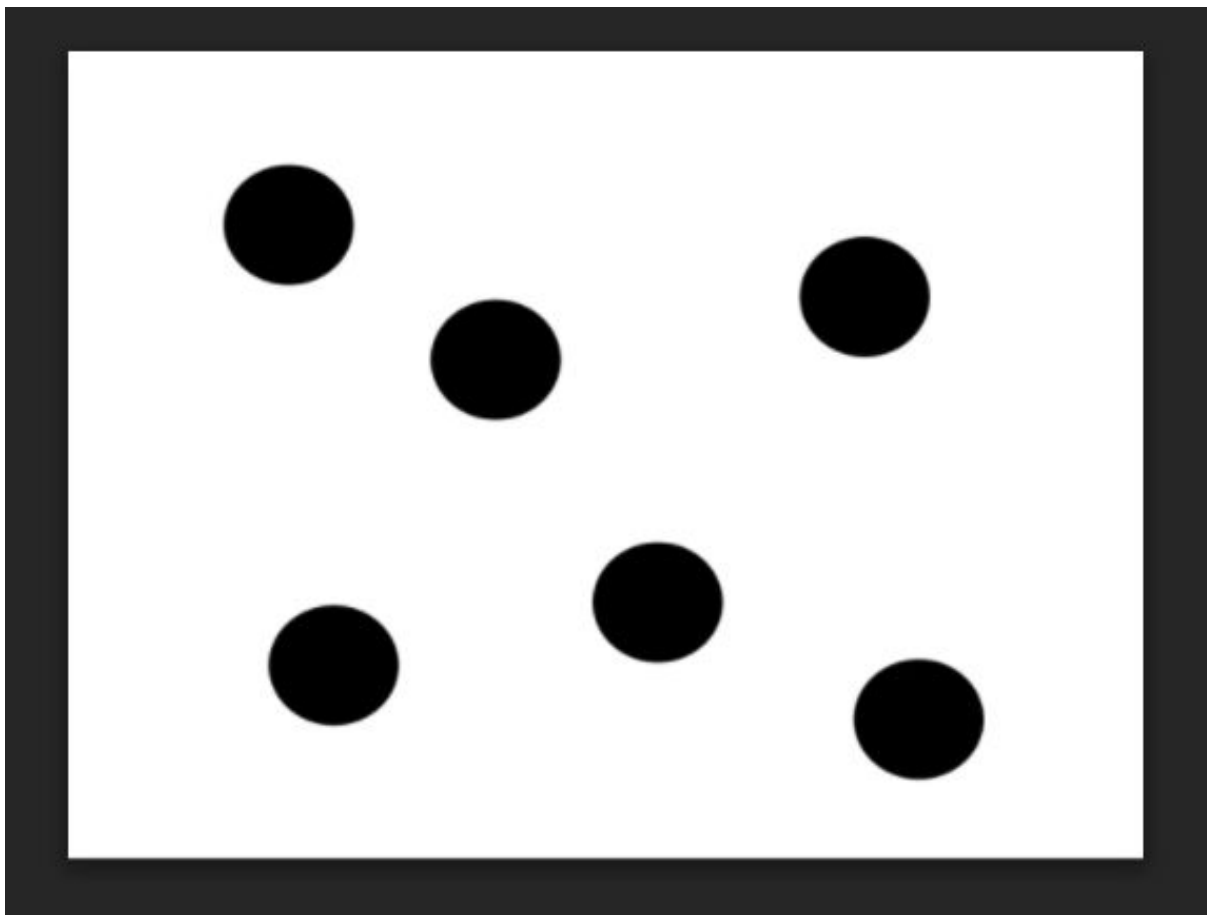
FINAL

4



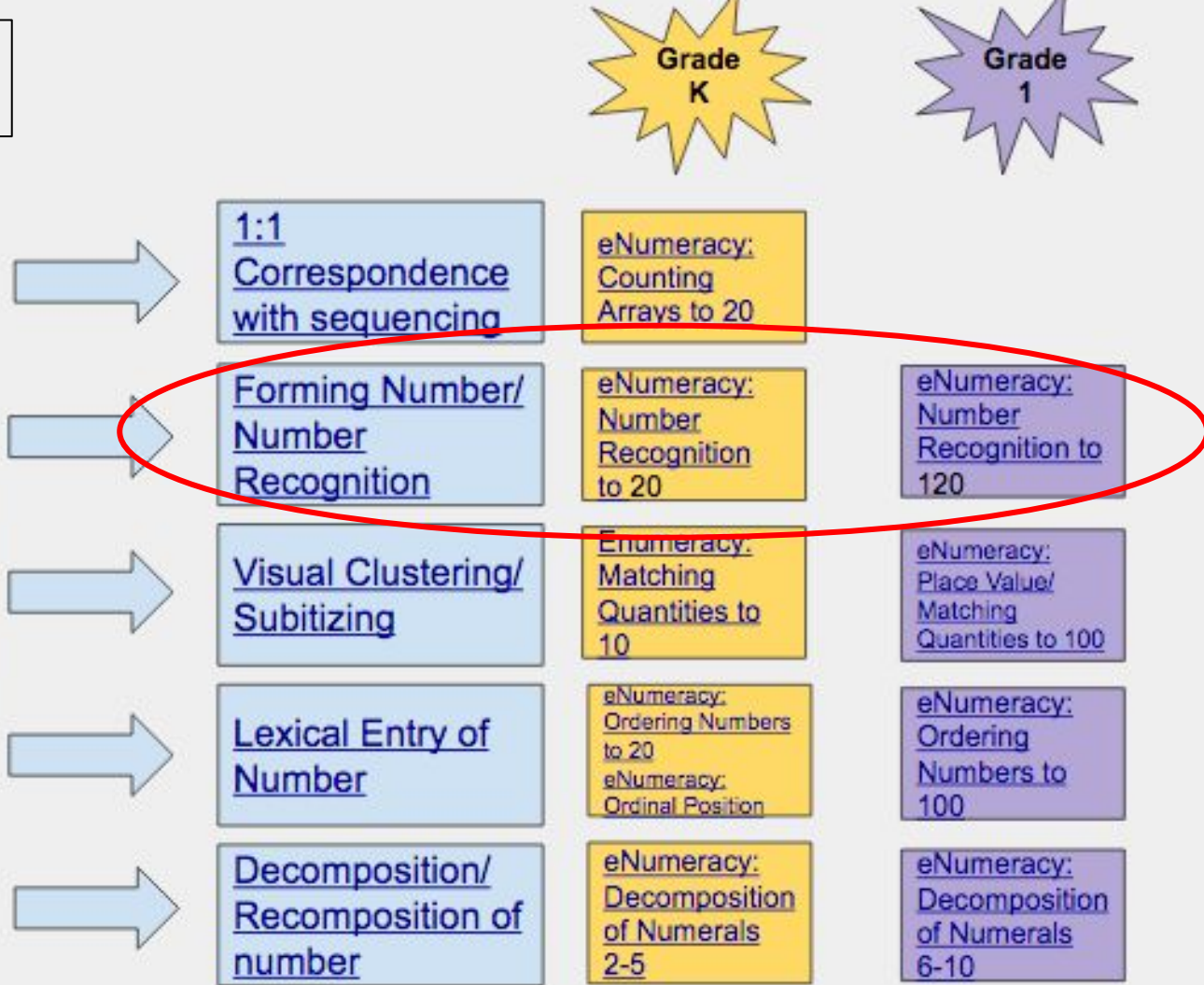
Number Concept





Grade K: Counting Arrays to 20

Number Concept



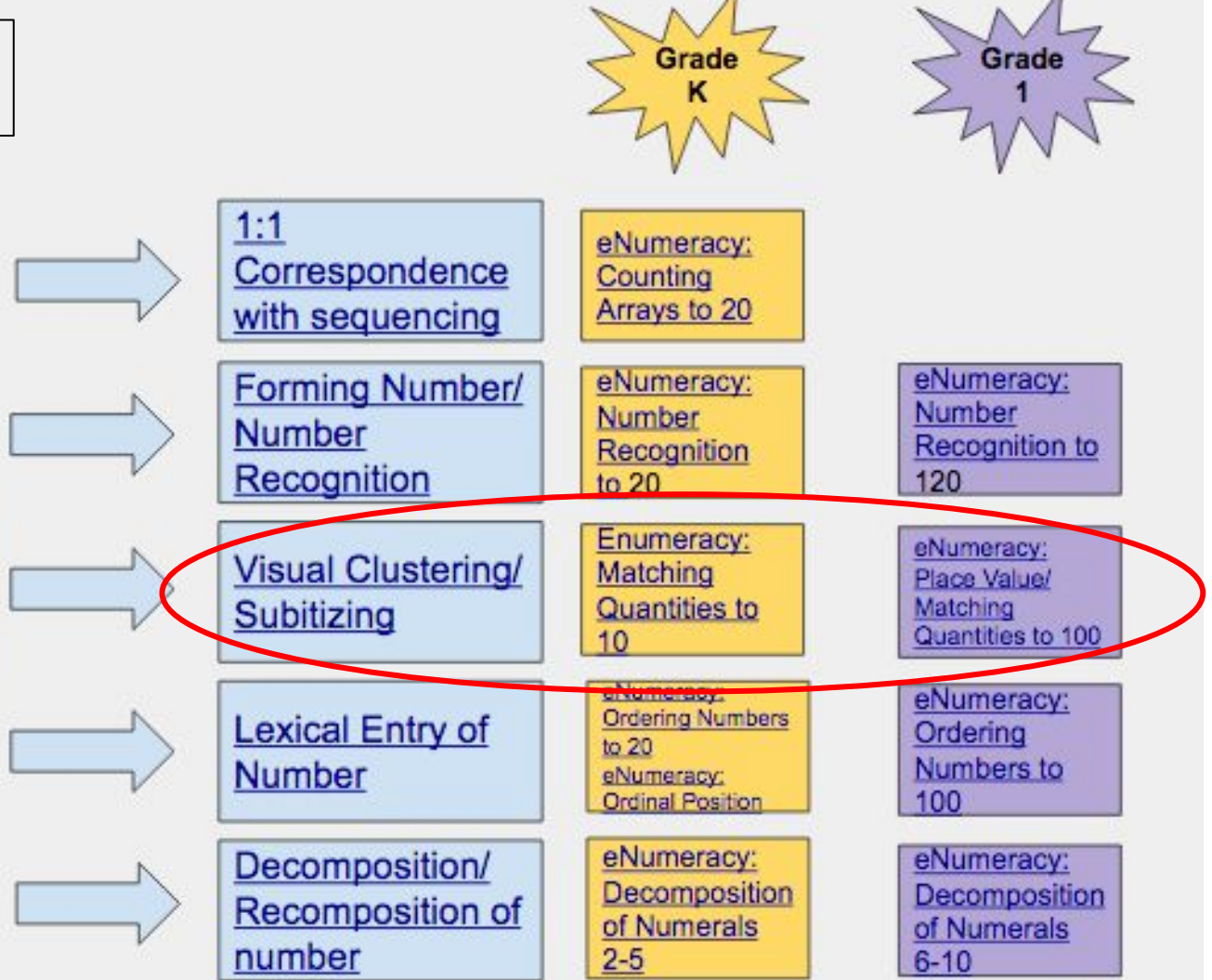
3	18	0	20	4
14	6	17	8	16
1	11	2	19	5
13	9	12	7	15
5	10	8	17	0

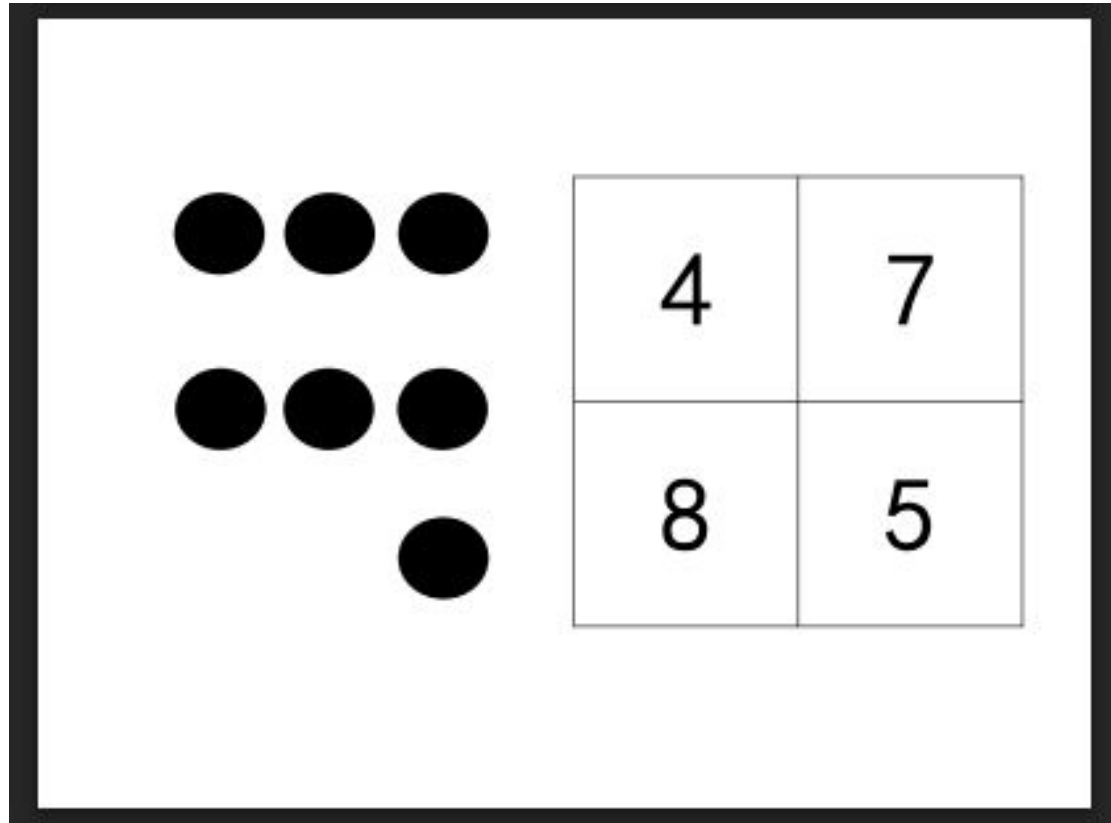
Grade K: Number Recognition 1 to 20

29	64	47	88	111
53	30	105	96	72
87	109	75	62	98
24	50	36	41	113
78	115	49	51	106

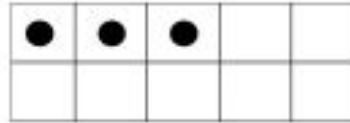
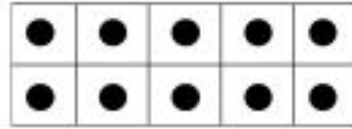
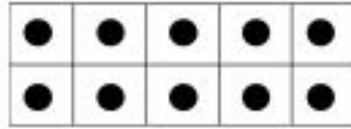
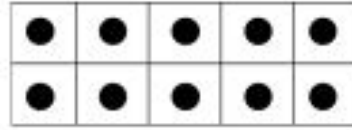
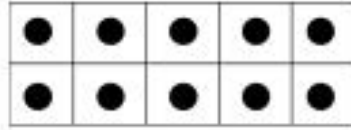
Grade 1: Number Recognition 1 to 120

Number Concept





Grade K: Matching Quantities to 10
(Subitizing)



34

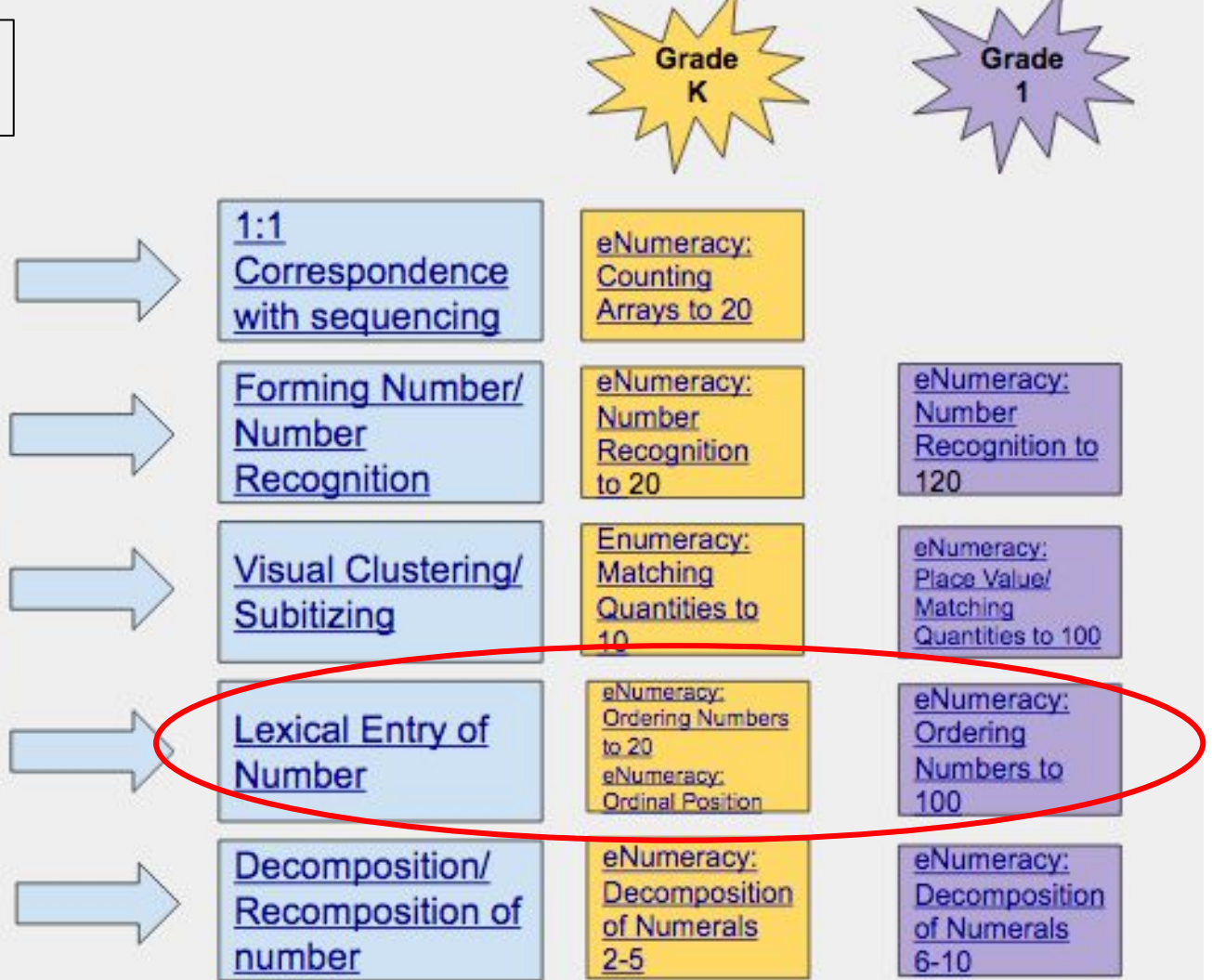
43

33

13

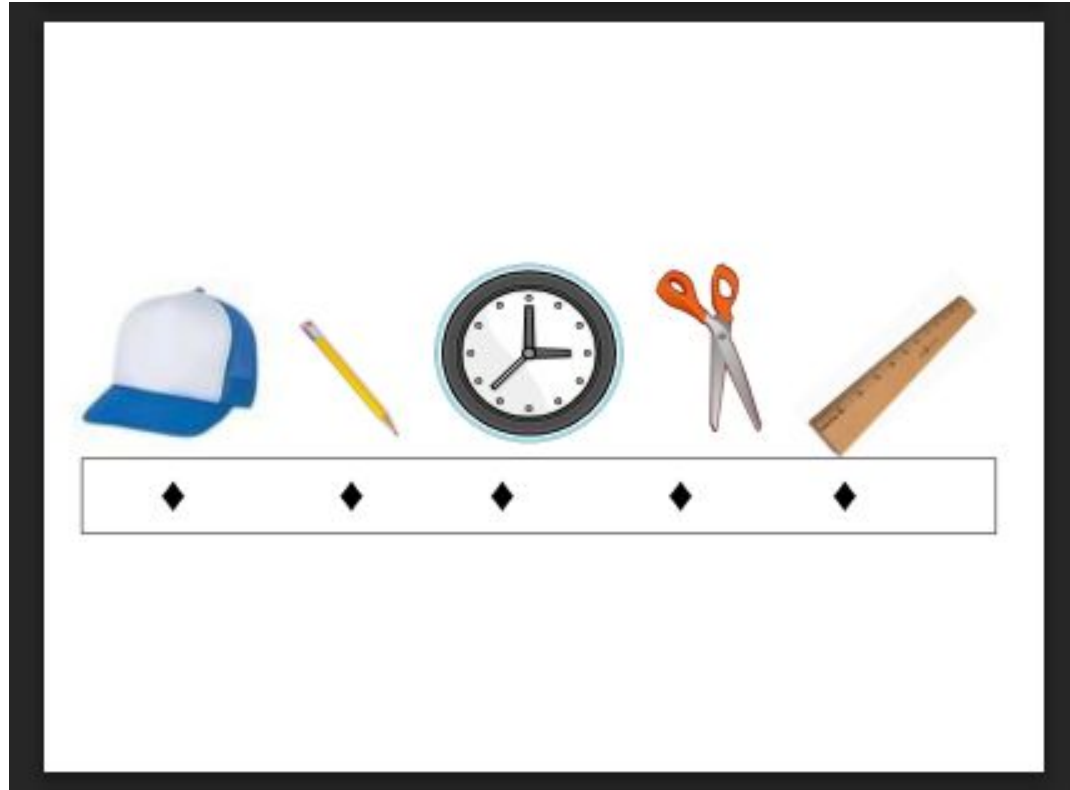
Grade 1: Matching Quantities to 100
Place Value

Number Concept



2	9	7	4	8
—	—	—	—	—

Grade K: Ordering Numbers to 20- # After
(Lexical Entry of number)

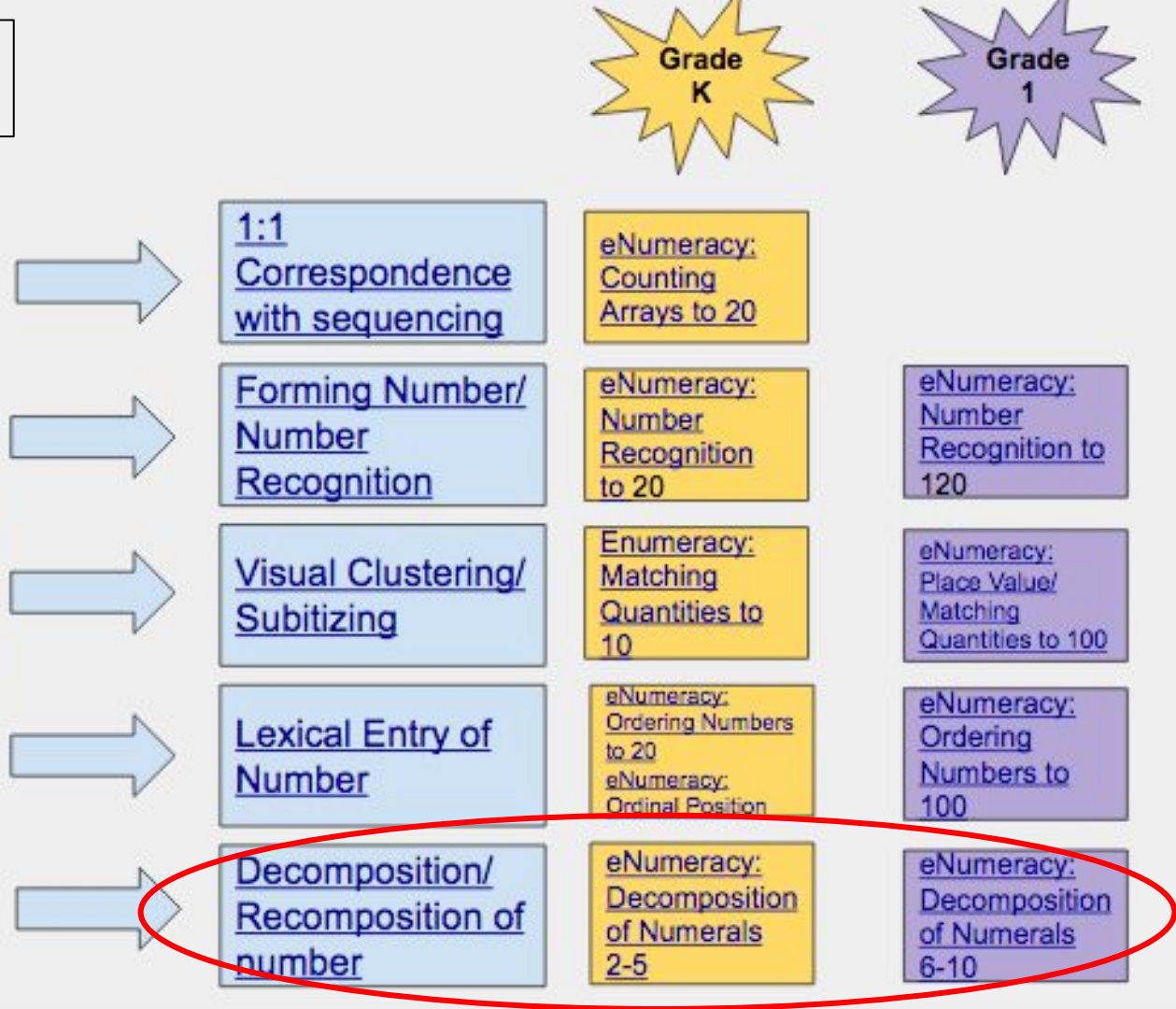


Grade K: Ordinal Position to 5
(Lexical Entry of number)

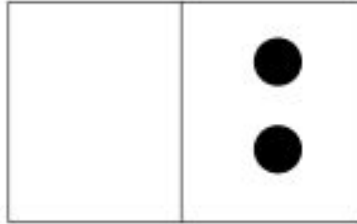
<u> </u> <u>25</u>	<u> </u> <u>39</u>	<u> </u> <u>48</u>	<u> </u> <u>67</u>	<u> </u> <u>82</u>
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Grade 1: Ordering Numbers to 100- # Before
(Lexical Entry of number)

Number Concept



5

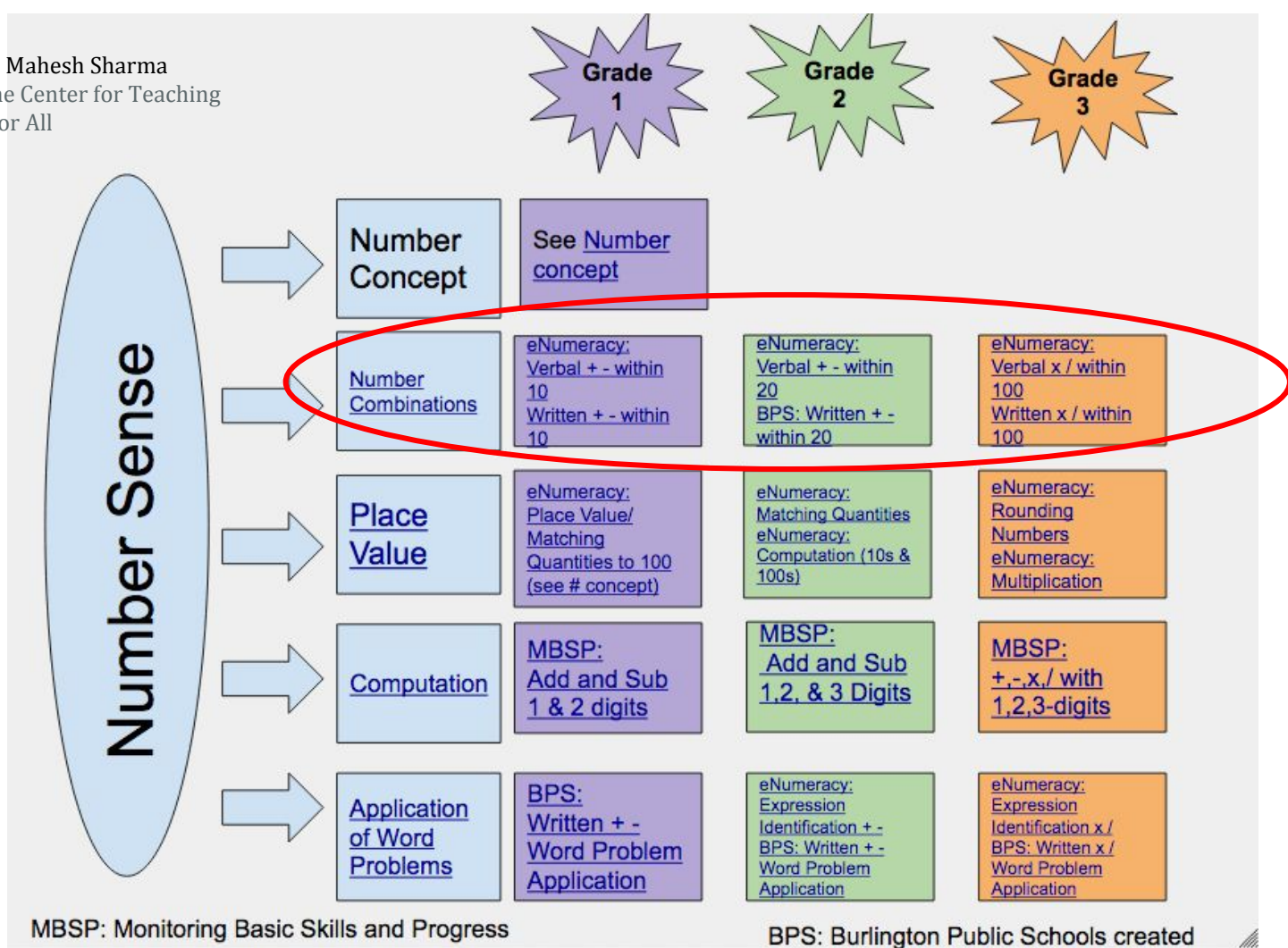


Grade K: Decomposition within 5

10



Grade 1: Decomposition within 10



Name: _____
Burlington Public Schools
First Grade
Time: 1 minutes

Date: _____
Math Fluency Assessment
Addition and Subtraction
Combinations to 10

$9 - 7 =$	$4 + 3 =$	$10 - 9 =$	$2 + 1 =$	$4 - 4 =$
$4 + 1 =$	$7 + 3 =$	$2 - 2 =$	$1 + 3 =$	$7 - 6 =$
$\begin{array}{r} 4 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 2 \\ \hline \end{array}$
$10 - 4 =$	$2 + 3 =$	$5 - 2 =$	$1 + 7 =$	$4 - 2 =$
$2 + 2 =$	$9 - 3 =$	$9 + 1 =$	$6 - 1 =$	$10 - 10 =$
$\begin{array}{r} 8 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ - 4 \\ \hline \end{array}$

Grade 1: Written Number Combinations within 10
(Addition & Subtraction)

EXAMINER SCORING SHEET – VERBAL ADDITION & SUBTRACTION (First Grade)

Student Name: _____ Date: _____ Examiner Name: _____

If the student says the correct answer, **circle the number**. If the student says another number **put an X through the item**, and write in what s/he said.

HESITATION RULE: This is a *fluid skill*, so the **HESITATION RULE** is **3 seconds**.

ITEM	QUESTION	CORRECT ANSWER	
		Addition	Subtraction
1.	What is 4 plus 1?	5	
2.	What is 8 minus 5?		3
3.	What is 2 plus 6?	8	
4.	What is 3 plus 5?	8	
5.	What is 5 plus 5?	10	
6.	What is 7 minus 6?		1
7.	What is 5 minus 2?		3
8.	What is 6 plus 3?	9	
9.	What is 9 minus 5?		4
10.	What is 4 plus 4?	8	
11.	What is 10 minus 7?		3
12.	What is 4 minus 4?		0
13.	What is 6 minus 4?		2
14.	What is 1 plus 6?	7	

TOTAL CORRECT _____ TOTAL TIME _____

Grade 1: Verbal Number Combinations within 10
(Addition & Subtraction)

Name: _____
Burlington Public Schools
Second Grade
Time: 1 minute

Date: _____
Math Fluency Assessment
Addition and Subtraction
Combinations to 20

$8 - 3 =$	$9 + 4 =$	$12 - 6 =$	$4 + 8 =$	$16 - 9 =$
$6 + 3 =$	$10 + 3 =$	$7 - 6 =$	$7 + 5 =$	$6 - 2 =$
$\begin{array}{r} 2 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ - 7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ - 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ + 2 \\ \hline \end{array}$
$11 - 8 =$	$1 + 8 =$	$9 - 7 =$	$6 + 7 =$	$13 - 9 =$
$9 + 8 =$	$11 - 10 =$	$7 + 4 =$	$12 - 5 =$	$10 - 9 =$
$\begin{array}{r} 9 \\ - 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 10 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ + 10 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ - 5 \\ \hline \end{array}$
$12 - 8 =$	$5 + 3 =$	$10 - 5 =$	$4 + 6 =$	$16 - 6 =$
$2 + 3 =$	$12 - 9 =$	$8 + 7 =$	$8 - 2 =$	$4 + 10 =$

Grade 2: Written Number Combinations within 20
(Addition & Subtraction)

EXAMINER SCORING SHEET – VERBAL ADDITION AND SUBTRACTION (Second Grade)

Student Name: _____ Date: _____ Examiner Name: _____

If the student says the correct answer, **circle the number**. If the student says another number **put an X through the item**, and write in what s/he said.

HESITATION RULE: This is a *fluid skill*, so the **HESITATION RULE** is **3 seconds**.

ITEM	QUESTION	CORRECT ANSWER	
		Addition	Subtraction
1.	What is 2 plus 6?	8	
2.	What is 5 minus 2?		3
3.	What is 8 plus 4?	12	
4.	What is 2 plus 4?	6	
5.	What is 7 plus 3?	10	
6.	What is 14 minus 7?		7
7.	What is 11 minus 3?		8
8.	What is 8 plus 8?	16	
9.	What is 11 minus 9?		2
10.	What is 5 plus 8?	13	
11.	What is 9 minus 4?		5
12.	What is 15 minus 9?		6
13.	What is 12 minus 3?		9
14.	What is 8 plus 6?	14	

TOTAL CORRECT _____ TOTAL TIME _____

Grade 2: Verbal Number Combinations within 20
(Addition & Subtraction)

Name: _____
Burlington Public Schools
Third Grade, Progress Monitoring 1
Time: 1 minute

Date: _____
Math Fluency Assessment
Multiplication and Division
Combinations within 100

Property of Burlington, MA Public Schools

$5 \times 5 =$	$18 \div 3 =$	$10 \times 9 =$	$16 \div 2 =$	$64 \div 8 =$
$8 \times 6 =$	$70 \div 7 =$	$7 \times 9 =$	$9 \times 10 =$	$49 \div 7 =$
$72 \div 8 =$	$9 \times 6 =$	$12 \div 3 =$	$3 \times 6 =$	$12 \div 6 =$
$5 \times 8 =$	$45 \div 5 =$	$8 \times 8 =$	$50 \div 5 =$	$8 \times 5 =$
$21 \div 3 =$	$4 \times 5 =$	$32 \div 8 =$	$10 \times 8 =$	$14 \div 7 =$
$6 \times 6 =$	$30 \div 10 =$	$10 \times 2 =$	$2 \times 5 =$	$10 \div 5 =$
$36 \div 6 =$	$7 \times 7 =$	$4 \times 3 =$	$48 \div 8 =$	$9 \times 4 =$
$4 \times 4 =$	$56 \div 8 =$	$90 \div 10 =$	$7 \times 5 =$	$18 \div 6 =$
$8 \times 3 =$	$24 \div 4 =$	$8 \times 9 =$	$24 \div 6 =$	$10 \times 7 =$
$72 \div 9 =$	$3 \times 5 =$	$70 \div 10 =$	$2 \times 6 =$	$24 \div 3 =$

Grade 3: Written Number Combinations within 100
(Multiplication & Division)

EXAMINER SCORING SHEET – VERBAL MULTIPLICATION AND DIVISION (Third Grade)

Student Name: _____ Date: _____ Examiner Name: _____

If the student says the correct answer, **circle the number**. If the student says another number **put an X through the item**, and write in what s/he said.

HESITATION RULE: This is a *fluid skill*, so the **HESITATION RULE** is **3 seconds**.

ITEM	QUESTION	CORRECT ANSWER	
		Multiplication	Division
1.	What is 2 times 4?	8	
2.	What is 24 divided by 6?		4
3.	What is 5 times 5?	25	
4.	What is 15 divided by 3?		5
5.	What is 7 times 9?	63	
6.	What is 8 divided by 2?		4
7.	What is 10 times 7?	70	
8.	What is 64 divided by 8?		8
9.	What is 9 times 3?	27	
10.	What is 6 times 8?	48	
11.	What is 72 divided by 9?		8
12.	What is 4 divided by 2?		2
13.	What is 6 times 7?	42	
14.	What is 40 divided by 10?		4

TOTAL CORRECT _____ TOTAL TIME _____

Grade 3: Verbal Number Combinations within 100
(Multiplication and Division)

$6 \times 5 =$	$63 \div 9 =$	$8 \times 4 =$	$108 \div 12 =$	$18 \div 9 =$
$7 \times 7 =$	$88 \div 8 =$	$3 \times 12 =$	$10 \times 9 =$	$48 \div 8 =$
$63 \div 7 =$	$7 \times 11 =$	$9 \div 3 =$	$2 \times 3 =$	$35 \div 7 =$
$11 \times 5 =$	$24 \div 6 =$	$6 \times 7 =$	$121 \div 11 =$	$9 \times 4 =$
$40 \div 5 =$	$6 \times 11 =$	$36 \div 4 =$	$8 \times 12 =$	$48 \div 12 =$
$7 \times 8 =$	$90 \div 10 =$	$12 \times 7 =$	$6 \times 12 =$	$24 \div 4 =$
$110 \div 10 =$	$2 \times 9 =$	$9 \times 9 =$	$27 \div 9 =$	$10 \times 4 =$
$10 \times 11 =$	$10 \div 5 =$	$33 \div 3 =$	$3 \times 3 =$	$108 \div 9 =$
$7 \times 2 =$	$56 \div 7 =$	$7 \times 6 =$	$16 \div 4 =$	$11 \times 2 =$
$55 \div 5 =$	$3 \times 12 =$	$66 \div 11 =$	$3 \times 5 =$	$32 \div 8 =$

Grade 4: Written Number Combinations within 144
 (Multiplication and Division)

Name: _____
Burlington Public Schools
Fifth Grade
Time: 1 minute

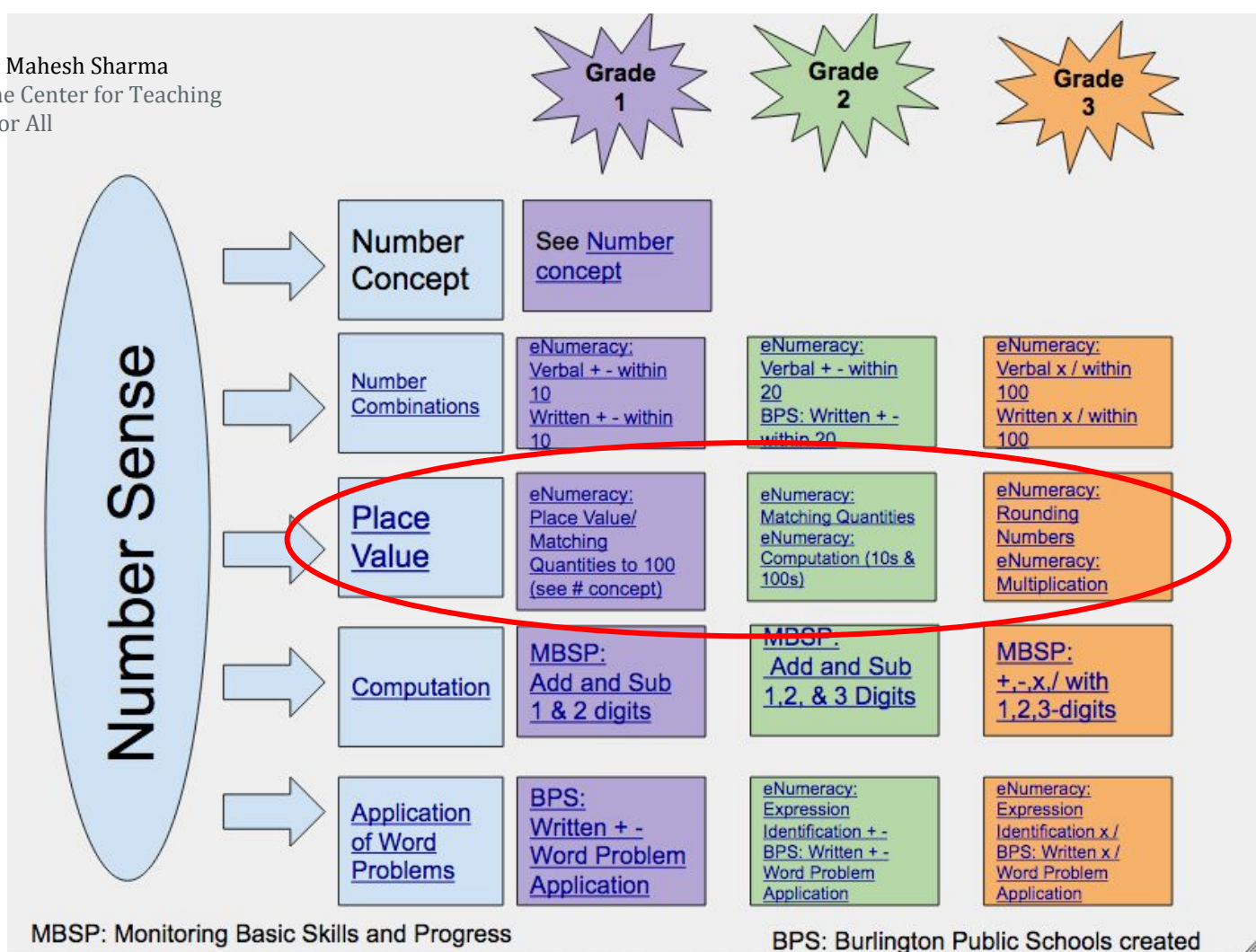
Date: _____
Math Fluency Assessment
Addition, Subtraction,
Multiplication and Division

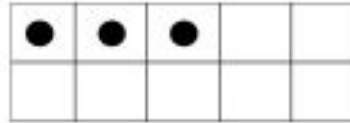
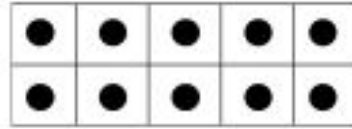
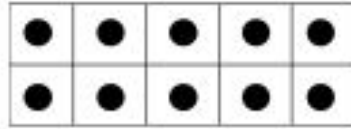
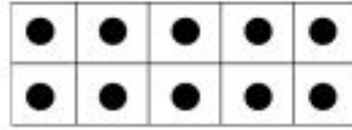
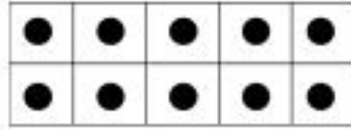
$6 + 3 =$	$4 - 3 =$	$9 \times 10 =$	$30 \div 6 =$	$8 - 5 =$
$4 + 6 =$	$72 \div 8 =$	$12 \times 11 =$	$7 + 4 =$	$16 - 7 =$
$24 \div 3 =$	$7 \times 9 =$	$15 - 10 =$	$56 \div 8 =$	$5 + 7 =$
$9 \times 4 =$	$13 - 9 =$	$9 + 8 =$	$33 \div 3 =$	$4 \times 5 =$
$17 - 8 =$	$8 + 7 =$	$55 \div 5 =$	$8 \times 10 =$	$12 - 9 =$
$9 + 3 =$	$9 \times 12 =$	$60 \div 6 =$	$9 \times 7 =$	$27 \div 9 =$
$10 - 8 =$	$7 + 7 =$	$5 \times 12 =$	$72 \div 6 =$	$10 + 2 =$
$11 \times 3 =$	$9 - 5 =$	$88 \div 11 =$	$6 + 5 =$	$10 - 4 =$
$7 \times 4 =$	$110 \div 11 =$	$2 + 8 =$	$9 - 8 =$	$7 \times 11 =$
$6 \div 3 =$	$2 + 4 =$	$6 \times 8 =$	$9 + 9 =$	$9 - 4 =$

Progress Monitoring – 1

Property of Burlington, MA Public Schools

Grade 5: Written Number Combinations
(All Operations)





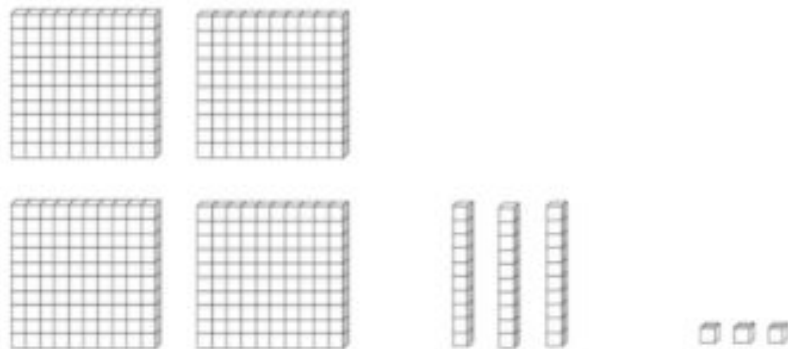
34

43

33

13

Grade 1: Matching Quantities to 100
Place Value



$200+80+1$	$100+50+6$
$400+30+3$	$300+30+1$

Grade 2: Matching Quantities (standard/expanded)
(Place Value)

652	805	33	900	796
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**Grade 2: Computation 10s and 100s (more/less)
(Place Value)**

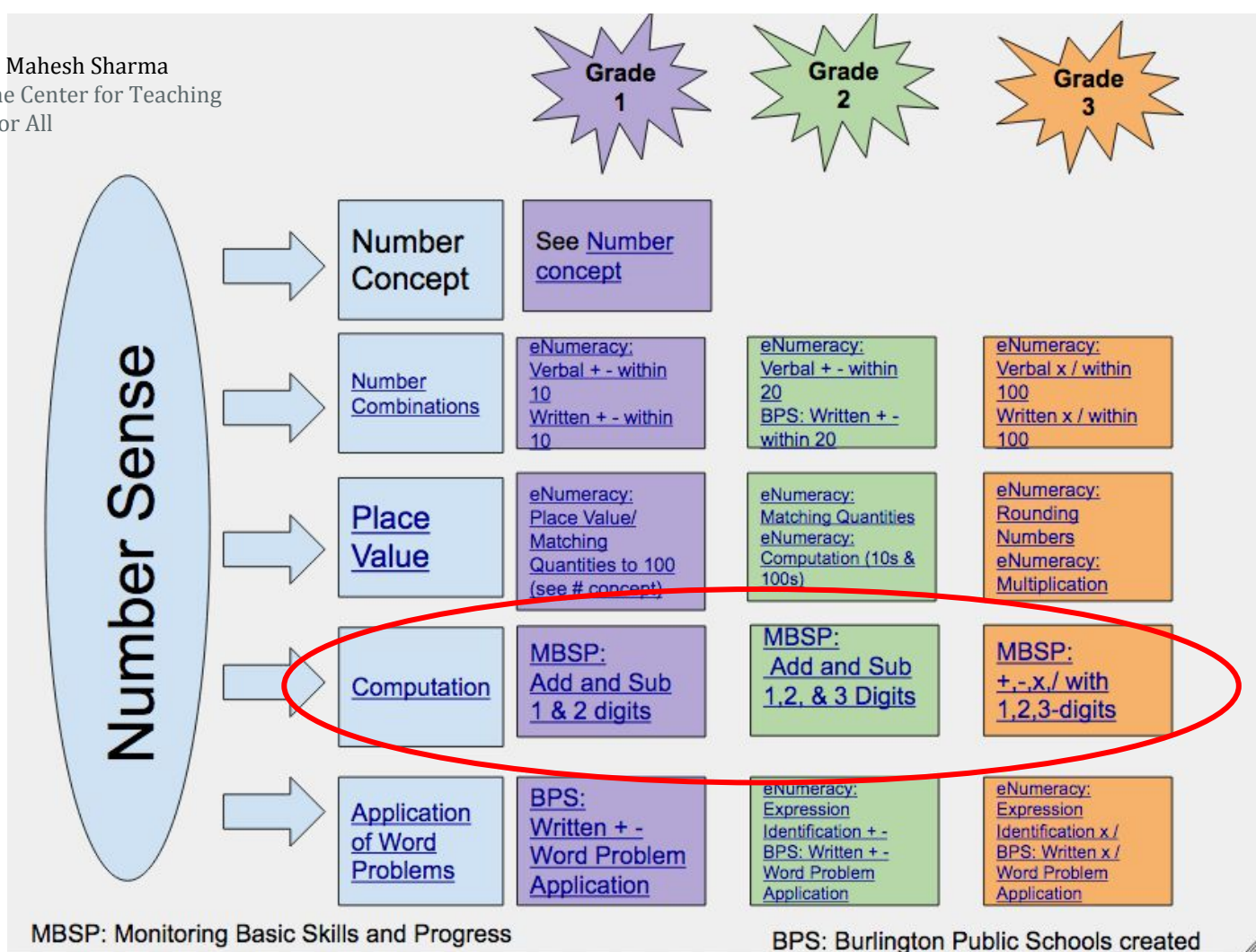
736	440	971	249	89
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Grade 3: Rounding Numbers to 10s and 100s
(Place Value)

$$5 \times 4 = 20$$

$$5 \times 40 = \boxed{}$$

Grade 3: Multiplication
(Place Value)



Password: ACT

Name: _____ Date: _____

A $\begin{array}{r} 0 \\ + 3 \\ \hline \end{array}$	B $\begin{array}{r} 7 \\ + 3 \\ \hline \end{array}$	C $\begin{array}{r} 0 \\ + 7 \\ \hline \end{array}$	D $\begin{array}{r} 54 \\ + 33 \\ \hline \end{array}$	E $\begin{array}{r} 7 \\ + 2 \\ \hline \end{array}$
F $\begin{array}{r} 10 \\ - 0 \\ \hline \end{array}$	G $\begin{array}{r} 9 \\ + 0 \\ \hline \end{array}$	H $\begin{array}{r} 0 \\ + 9 \\ \hline \end{array}$	I $\begin{array}{r} 6 \\ - 0 \\ \hline \end{array}$	J $\begin{array}{r} 8 \\ - 5 \\ \hline \end{array}$
K $\begin{array}{r} 10 \\ - 1 \\ \hline \end{array}$	L $\begin{array}{r} 8 \\ - 1 \\ \hline \end{array}$	M $\begin{array}{r} 10 \\ - 7 \\ \hline \end{array}$	N $\begin{array}{r} 1 \\ 7 \\ + 1 \\ \hline \end{array}$	O $\begin{array}{r} 6 \\ - 2 \\ \hline \end{array}$

Grade 1: MBSP Computation
(Monitoring Basic Skills Progress, Fuchs and
Hamlett, Pro-ed)

Password: BOY

Name: _____ Date: _____

A $\begin{array}{r} 13 \\ - 7 \\ \hline \end{array}$	B $\begin{array}{r} 6 \\ + 7 \\ \hline \end{array}$	C $\begin{array}{r} 529 \\ - 24 \\ \hline \end{array}$	D $\begin{array}{r} 15 \\ - 8 \\ \hline \end{array}$	E $\begin{array}{r} 35 \\ - 21 \\ \hline \end{array}$
F $\begin{array}{r} 69 \\ + 20 \\ \hline \end{array}$	G $\begin{array}{r} 8 \\ + 9 \\ \hline \end{array}$	H $\begin{array}{r} 44 \\ - 9 \\ \hline \end{array}$	I $\begin{array}{r} 7 \\ + 9 \\ \hline \end{array}$	J $\begin{array}{r} 1 \\ 4 \\ + 7 \\ \hline \end{array}$
K $\begin{array}{r} 68 \\ + 13 \\ \hline \end{array}$	L $\begin{array}{r} 18 \\ - 9 \\ \hline \end{array}$	M $\begin{array}{r} 43 \\ - 35 \\ \hline \end{array}$	N $\begin{array}{r} 21 \\ + 9 \\ \hline \end{array}$	O $\begin{array}{r} 70 \\ - 8 \\ \hline \end{array}$

Grade 2: MBSP Computation
(Monitoring Basic Skills Progress, Fuchs and
Hamlett, Pro-ed)

Password: HAT

Name: _____ Date: _____

A $\begin{array}{r} 919 \\ - 37 \\ \hline \end{array}$	B $\begin{array}{r} 839 \\ + 77 \\ \hline \end{array}$	C $7 \overline{)14}$	D $\begin{array}{r} 66 \\ - 49 \\ \hline \end{array}$	E $5 \overline{)35}$
F $2 \overline{)18}$	G $\begin{array}{r} 27 \\ - 18 \\ \hline \end{array}$	H $\begin{array}{r} 0 \\ \times 0 \\ \hline \end{array}$	I $1 \overline{)2}$	J $\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$
K $3 \overline{)21}$	L $\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$	M $\begin{array}{r} 1 \\ \times 3 \\ \hline \end{array}$	N $\begin{array}{r} 400 \\ - 209 \\ \hline \end{array}$	O $\begin{array}{r} 4 \\ \times 0 \\ \hline \end{array}$

Grade 3: MBSP Computation
(Monitoring Basic Skills Progress, Fuchs and
Hamlett, Pro-ed)

Password: BUS

Name: _____ Date: _____

A $\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$	B $4 \overline{)64}$	C $\begin{array}{r} 909 \\ \times 6 \\ \hline \end{array}$	D $6\frac{2}{3} + 4 =$	E $\frac{2}{5} + \frac{2}{5} =$
F $7 \overline{)29}$	G $\begin{array}{r} 8 \\ \times 1 \\ \hline \end{array}$	H $\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	I $5 \overline{)40}$	J $9 \overline{)36}$
K $\begin{array}{r} 483 \\ - 95 \\ \hline \end{array}$	L $\frac{4}{11} - \frac{1}{11} =$	M $\begin{array}{r} 85509 \\ + 31474 \\ \hline \end{array}$	N $\begin{array}{r} 249 \\ \times 8 \\ \hline \end{array}$	O $8 \overline{)16}$

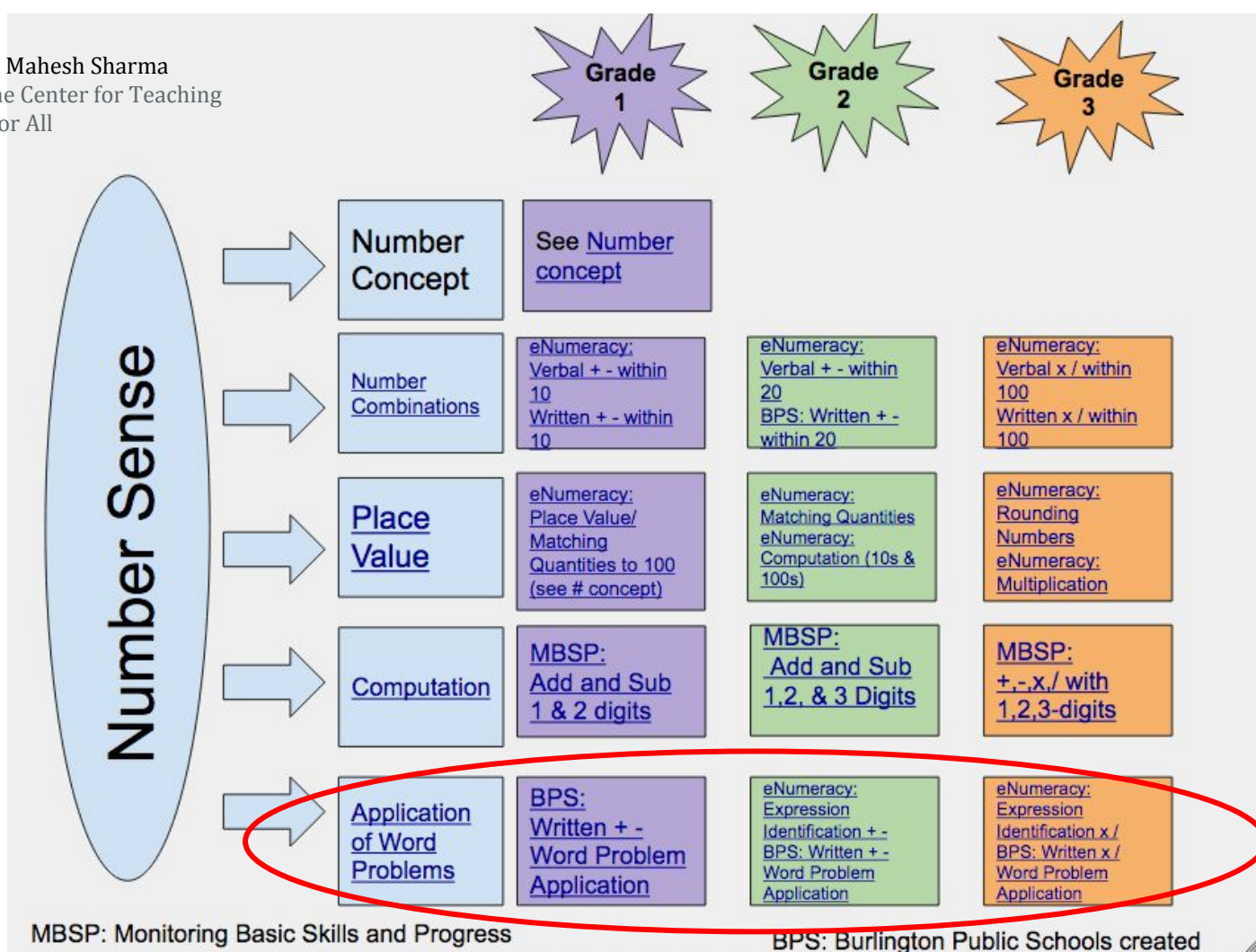
Grade 4: MBSP Computation
(Monitoring Basic Skills Progress, Fuchs and
Hamlett, Pro-ed)

Password: ANT

Name: _____ Date: _____

A $\frac{1}{3} - \frac{1}{5} =$	B $\frac{2}{3} + \frac{1}{3} =$	C $\begin{array}{r} 53355 \\ - 50568 \\ \hline \end{array}$	D <i>Reduce/simplify</i> $\frac{3}{6} =$	E $6\frac{1}{3} - 2\frac{2}{3} =$
F $\begin{array}{r} 704 \\ \times 69 \\ \hline \end{array}$	G <i>Rename as mixed:</i> $\frac{33}{4} =$	H $6\frac{3}{5} + 3\frac{3}{5} =$	I <i>Rename as improper:</i> $8\frac{5}{7} =$	J $\begin{array}{r} 877 \\ \times 32 \\ \hline \end{array}$
K $6 \overline{)840}$	L $9 \overline{)634}$	M $\frac{1}{7} + \frac{8}{21} =$	N $\begin{array}{r} 58676 \\ 2444 \\ 5231 \\ + 257 \\ \hline \end{array}$	O $\begin{array}{r} 6.22 \\ + 7.7 \\ \hline \end{array}$

Grade 5: MBSP Computation
(Monitoring Basic Skills Progress, Fuchs and
Hamlett, Pro-ed)



2.) Some students took the bus to go home.

At the first stop, 5 students got off.

Now there are 3 students on the bus.

How many students were on the bus in the beginning?

Number Sentence: _____

Answer: _____

**Grade 1: Written Word Problem Application
(Addition and Subtraction)**

3.) Juanita is 12 years old.

Juanita has 15 more pencils than markers.

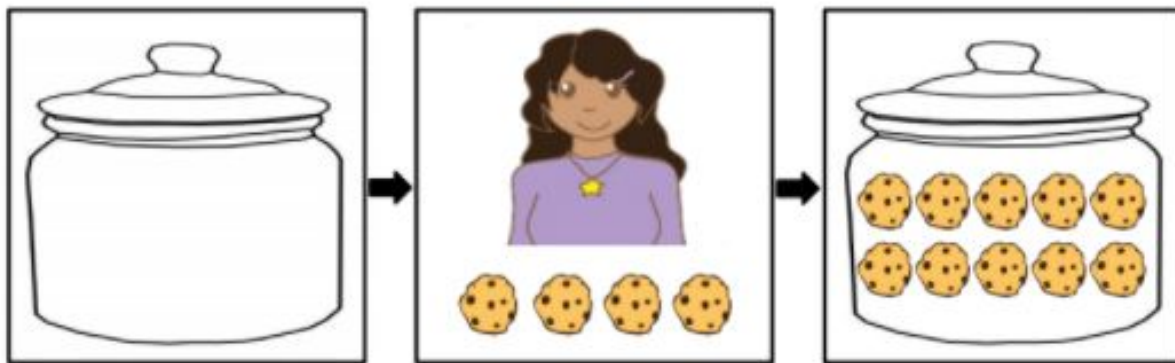
She has 49 pencils.

How many markers does she have?

Number Sentence: _____

Answer: _____

**Grade 2: Written Word Problem Application
(Addition and Subtraction)**



$10 - 6$	$10 - 4$
$10 + 4$	$7 + 4$

Grade 2: Expression ID Word Problem Application
(Addition and Subtraction)

6.) An elastic is 8 inches long.

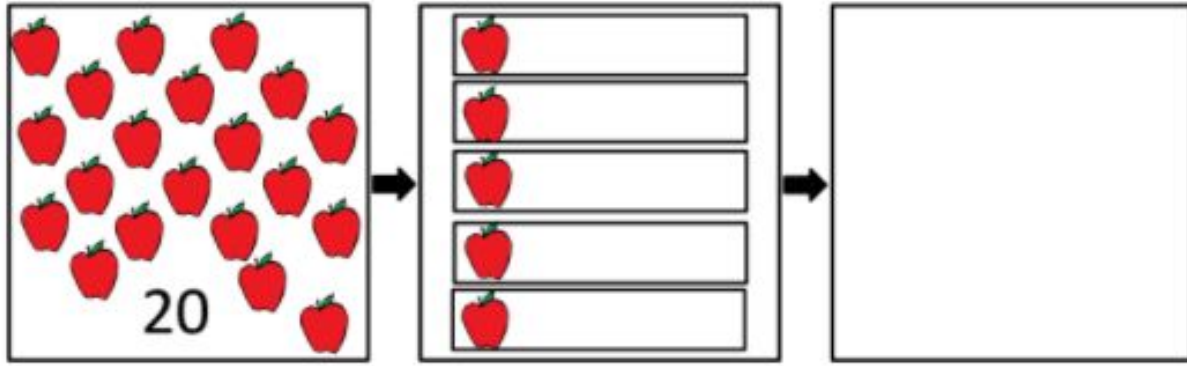
It is stretched to be 3 times as long.

How long is the elastic now?

Number Sentence: _____

Answer: _____

**Grade 3: Written Word Problem Application
(Multiplication and Division)**



$20 - 5$	$20 \div 4$
$20 \div 5$	20×5

Grade 3: Expression ID Word Problem Application
(Multiplication and Division)

- 1.) The 4th graders are going on a field trip.
There are 25 students in each class.
9 students can fit into a van.
How many vans are needed for 75 students?

Equation: _____

Answer: _____

Grade 4: Written Word Problem Application
(Multiplication and Division)

- 7.) Three jars are being used to collect rainwater.
The jars have 17 fluid ounces, 21 fluid ounces, and 25 fluid ounces.
If the total amount of water was redistributed equally between the 3 jars,
how many fluid ounces would be in each jar?

Equations: _____

Answer: _____

**Grade 5: Written Word Problem Application
(Multiplication and Division)**



GRADE K
SYDNEY

Decomposing Numerals : Scoring Sheet

EXAMINER SCORING SHEET – DECOMPOSING NUMERALS (Kindergarten)

Student Name: _____ Date: _____ Examiner Name: _____

If the student says the correct answer within 3 seconds, then circle the correct answer. Put an X through the answer if they do not say the correct answer.

HESITATION RULE: This is a fluid skill, so the HESITATION RULE is 3 seconds.

ITEM	HESITATION PROMPT	CORRECT ANSWER
1.	Point to the box and say, How many dots go here? (4)	(2)
2.	Point to the box and say, How many dots go here? (5)	X
3.	Point to the box and say, How many dots go here? (2)	(1)
4.	Point to the box and say, How many dots go here? (4)	(3)
5.	Point to the box and say, How many dots go here? (5)	(2)
6.	Point to the box and say, How many dots go here? (3)	(1)
7.	Point to the box and say, How many dots go here? (5)	(0)
8.	Point to the box and say, How many dots go here? (5)	(4)

CORRECT NUMERALS DECOMPOSED _____

TOTAL TIME _____



ITEM	HESITATION PROMPT	CORRECT ANSWER
1.	Point to the box and say, How many dots go here? (4)	(2)
2.	Point to the box and say, How many dots go here? (5)	X H 4
3.	Point to the box and say, How many dots go here? (2)	(1)
4.	Point to the box and say, How many dots go here? (4)	X 4
5.	Point to the box and say, How many dots go here? (5)	X H ✓
6.	Point to the box and say, How many dots go here? (3)	(1)
7.	Point to the box and say, How many dots go here? (5)	X 5
8.	Point to the box and say, How many dots go here? (5)	X H ✓
CORRECT NUMERALS DECOMPOSED <u>3</u> TOTAL TIME <u>49</u> sec		

To Calculate Accuracy:

Total Correct ÷ Total Items X 100=
% Correct (Accuracy)

$$3 \div 8 \times 100 = 37.5 \%$$

38% Accuracy

To Calculate Fluency:

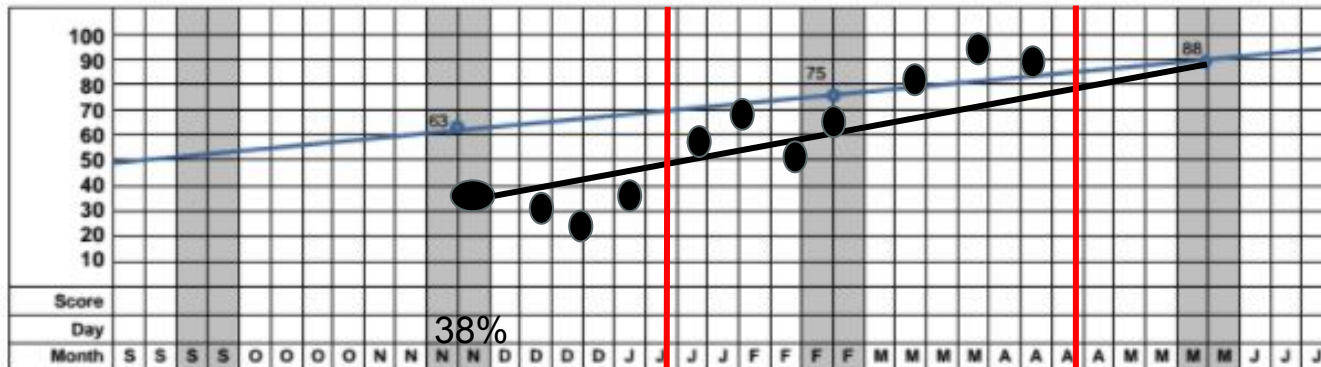
RPM= Rate per minute

Total Correct ÷ Total time in seconds
X 60 = RPM (Fluency)

$$3 \div 49 \times 60 = 3.67$$

4 RPM

ITEM	HESITATION PROMPT	CORRECT ANSWER
1.	Point to the box and say, How many dots go here? (4)	(2)
2.	Point to the box and say, How many dots go here? (5)	X H 4
3.	Point to the box and say, How many dots go here? (2)	(1)
4.	Point to the box and say, How many dots go here? (4)	X 4
5.	Point to the box and say, How many dots go here? (5)	X H ✓
6.	Point to the box and say, How many dots go here? (3)	(1)
7.	Point to the box and say, How many dots go here? (5)	X 5
8.	Point to the box and say, How many dots go here? (5)	X H ✓
CORRECT NUMERALS DECOMPOSED <u>3</u>		
TOTAL TIME <u>49</u> sec		

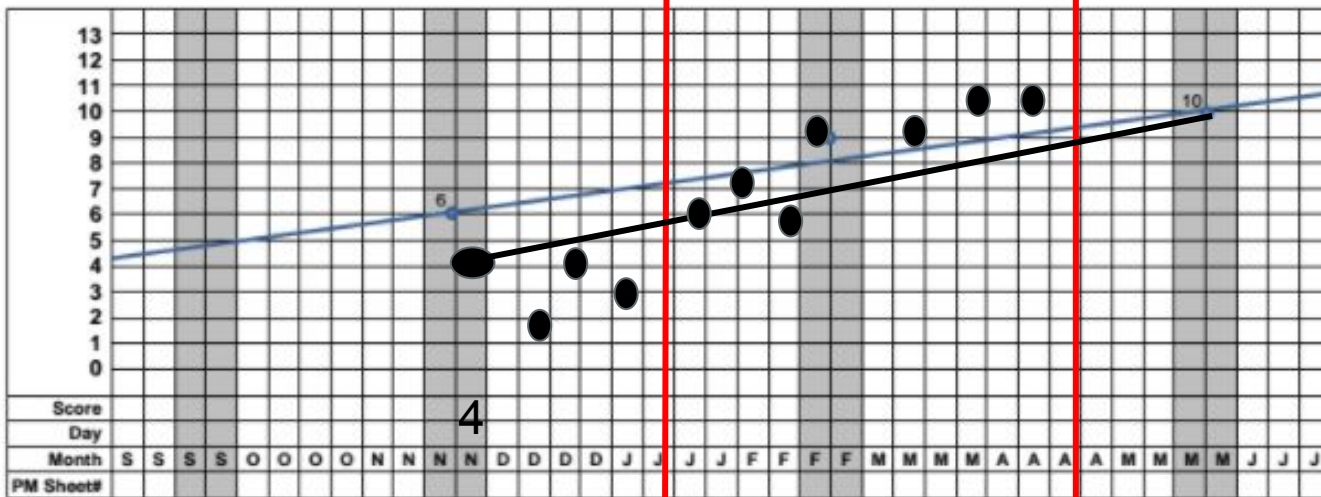


Intervention:

Quick Look Intervention

Cuisenaire Rods

Exit Fluency (RPM)



www.bpsenumeracy.wordpress.com

Burlington Public Schools

Massachusetts

2017



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