



KENTUCKY CENTER  
FOR MATHEMATICS

# Focus on Place Value with Grayson County MITs

## More Place Value

# Welcome!

Your hosts



**Brandy Dermitt**

Math Interventionist  
Clarkson Elementary

[brandy.dermitt@grayson.kyschools.us](mailto:brandy.dermitt@grayson.kyschools.us)



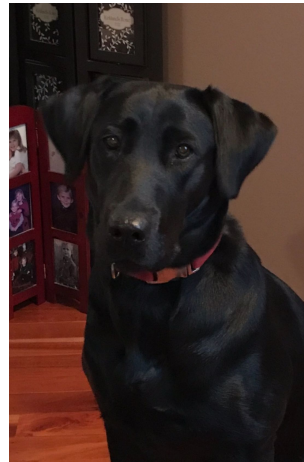
**Sloan Young**

Math Interventionist  
H. W. Wilkey Elementary

[sloan.young@grayson.kyschools.us](mailto:sloan.young@grayson.kyschools.us)

# About Sloan!

- mother of 2, Jessika-25, Hunter-21
- married to Kent for 30 years
- 27th year of teaching, 3rd year as an MIT
  - before becoming an MIT, I taught special education and 5th grade



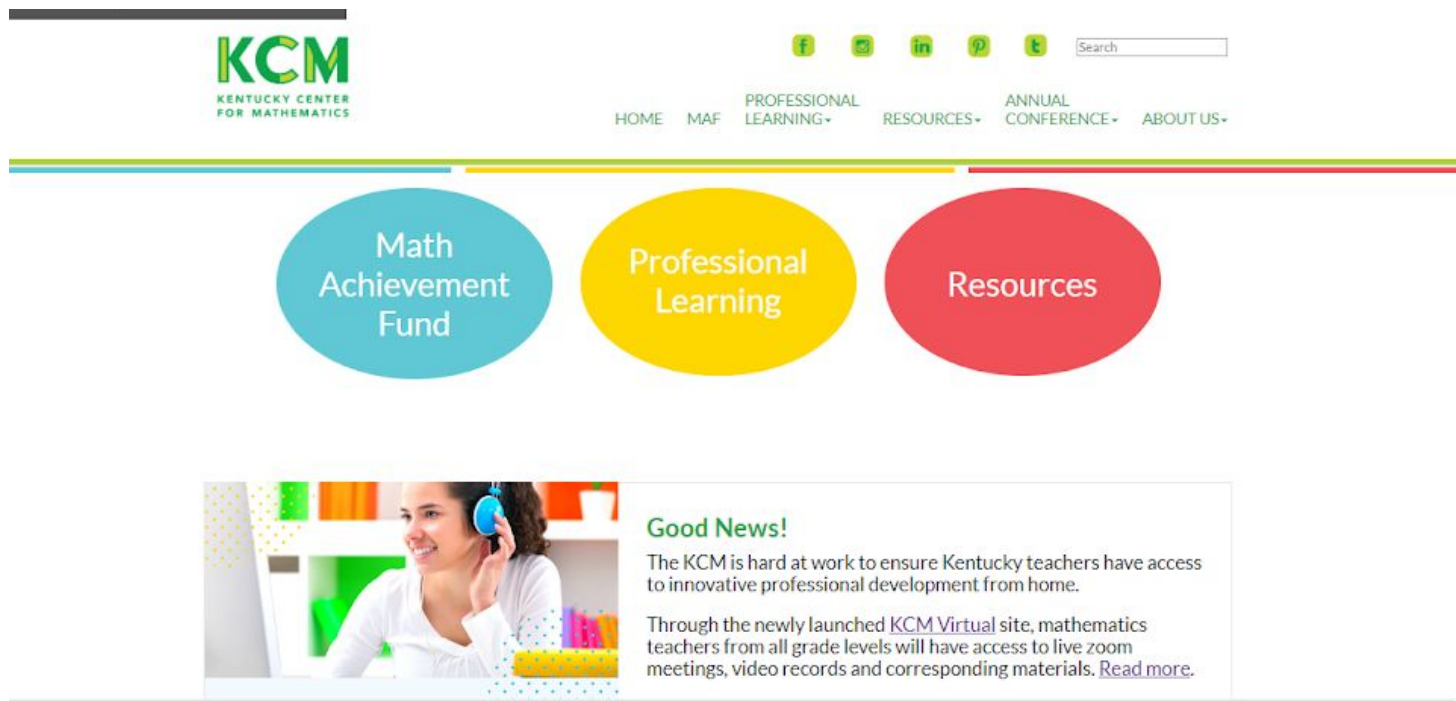
# About Brandy!

- mother of 3, Isaac-16, Brayden-11, Breanna-8
- married to Brad for 11 years
- 12th year teaching, 3rd year as an MIT





# KCM Website

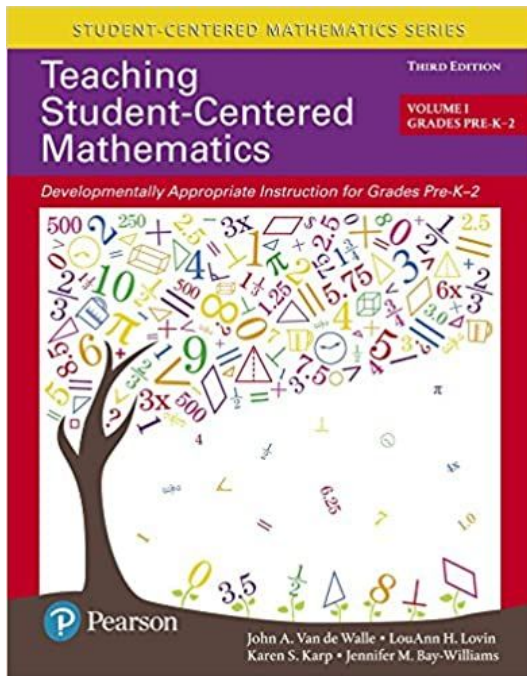


<https://www.kentuckymathematics.org/>

# Agenda

- The Research
- The Standards
- The Progression of Addition and Subtraction (gfletchy)
- Invented Strategies/Number Talks
- Activities from Teaching Student Centered Mathematics
- Share Out

# Research



\*Children are expected to “develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and properties of operations.”

\*Invented Strategies generate procedural proficiency.

# Standards

**2.NBT.5**-Fluently add and subtract within 100 using **strategies** based on place value, properties of operations and/or the relationship between addition and subtraction.

**2.NBT.7**-Add and subtract within 1000.

- \*Use concrete models or drawings

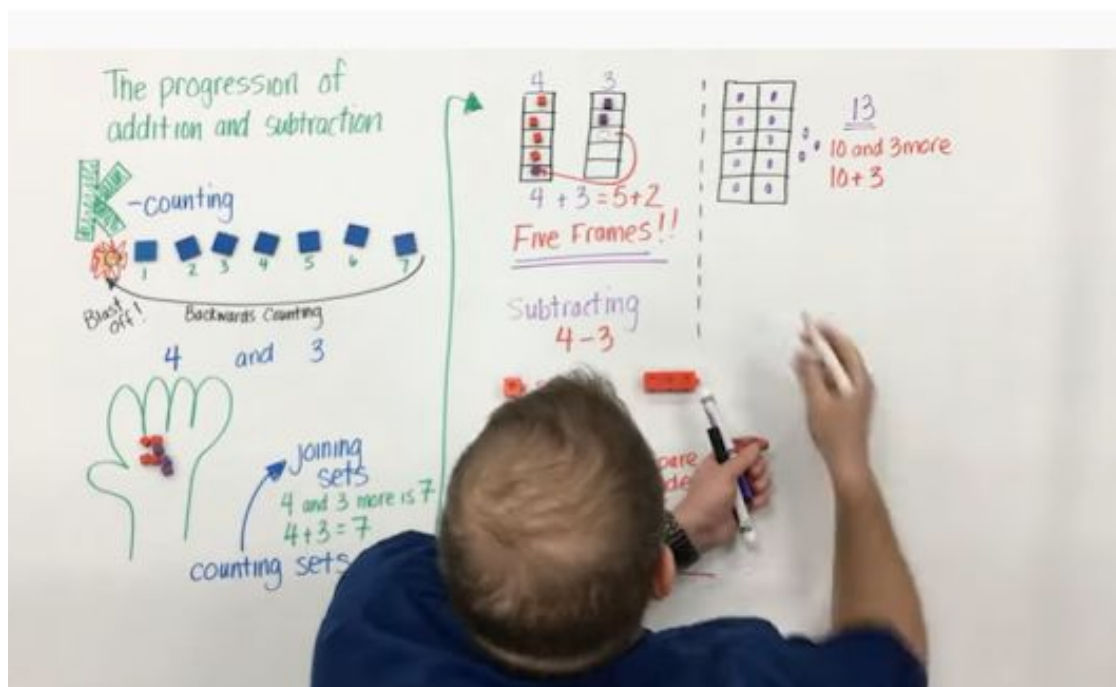
- \***Use strategies based on place value**

- \*Understand that in adding or subtracting 3-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds



# The Progression of Addition and Subtraction

Graham Fletcher



A green grid pattern is located in the top right corner of the slide, extending diagonally from the top edge towards the center.

# How can we help students to progress?

# Invented Strategies

Teaching Student Centered Mathematics, Volume 1, 3rd Edition, pg. 243

An *invented strategy* is any strategy, other than the standard algorithm, that does not involve the use of physical materials or counting by ones.

# Invented Strategies

Teaching Student Centered Mathematics, Volume 1, 3rd Edition, pg. 243

## Benefits:

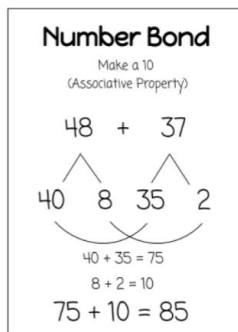
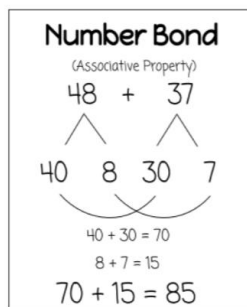
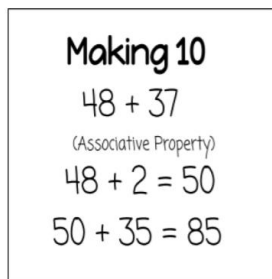
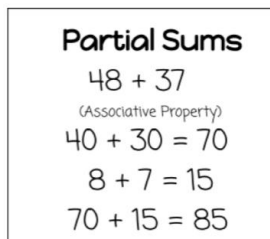
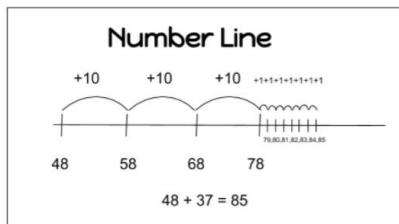
- Children make fewer errors
- Less reteaching is required
- Children develop number sense
- Invented strategies are the basis for mental computation and estimation
- Flexible Methods are often faster than the standard algorithms
- Strategy invention is itself a significantly important process of doing mathematics



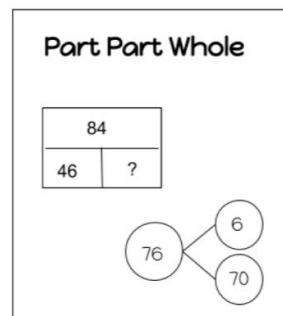
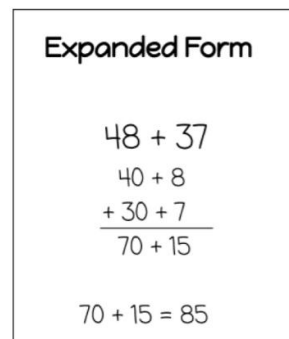
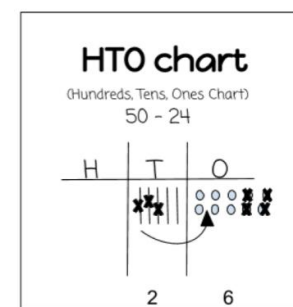
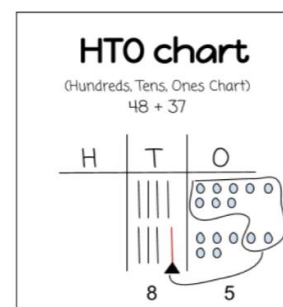
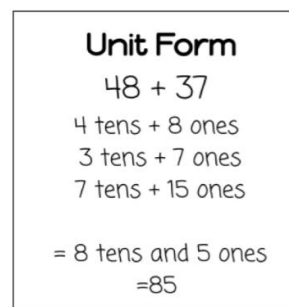
# Invented Strategies cont.

Examples of strategies our kids have  
“invented”

2nd Grade Addition and Subtraction Strategies

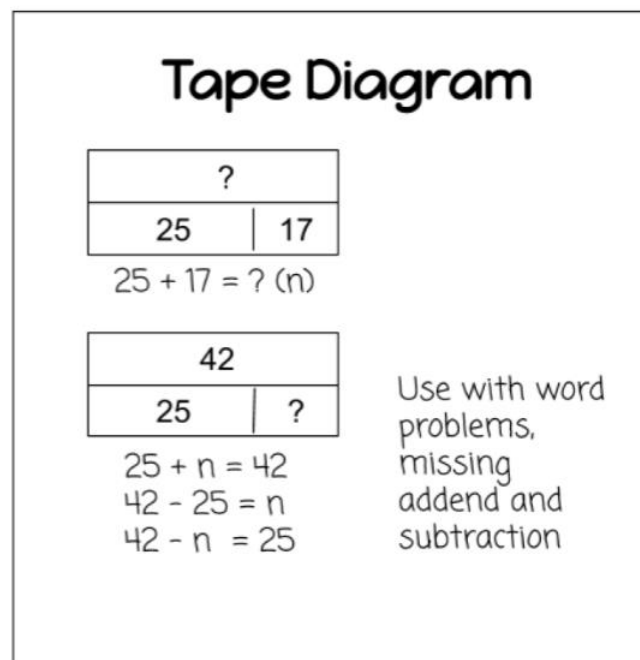
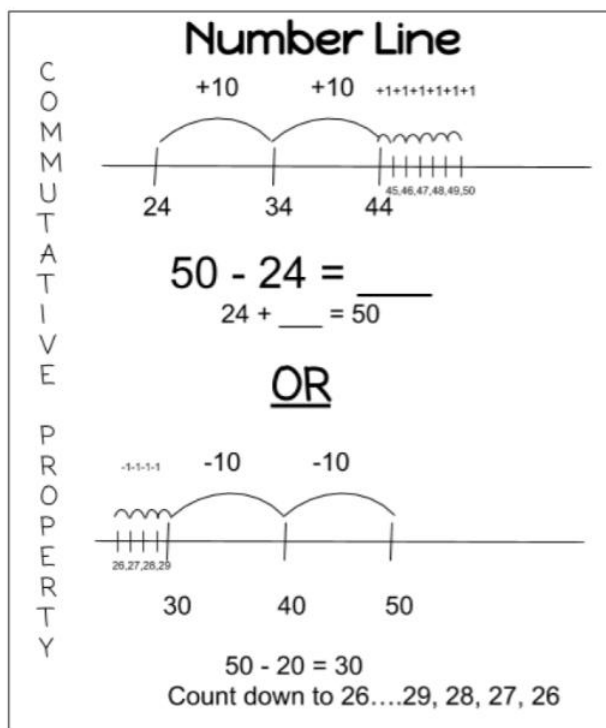


2nd Grade Addition and Subtraction Strategies



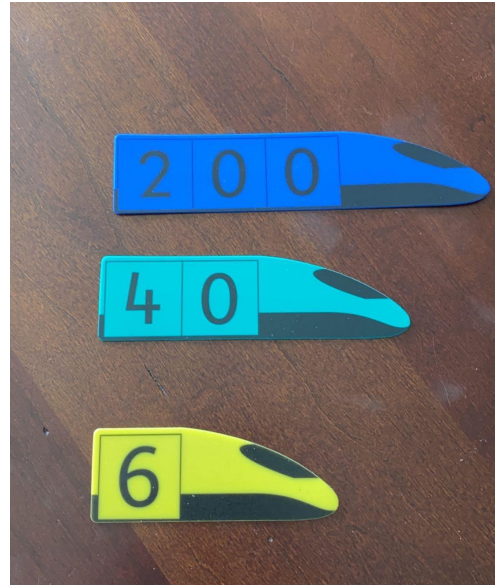
# Invented Strategies cont.

2nd Grade Addition and Subtraction Strategies



# Activities

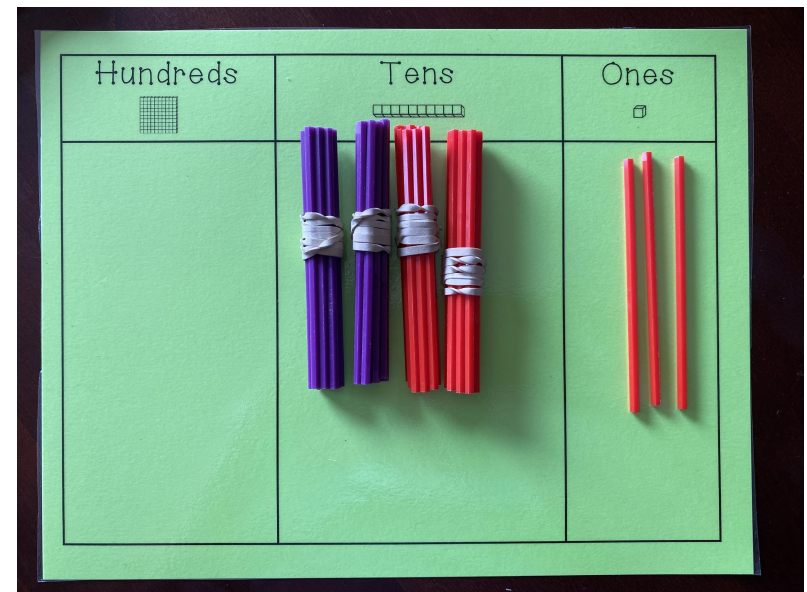
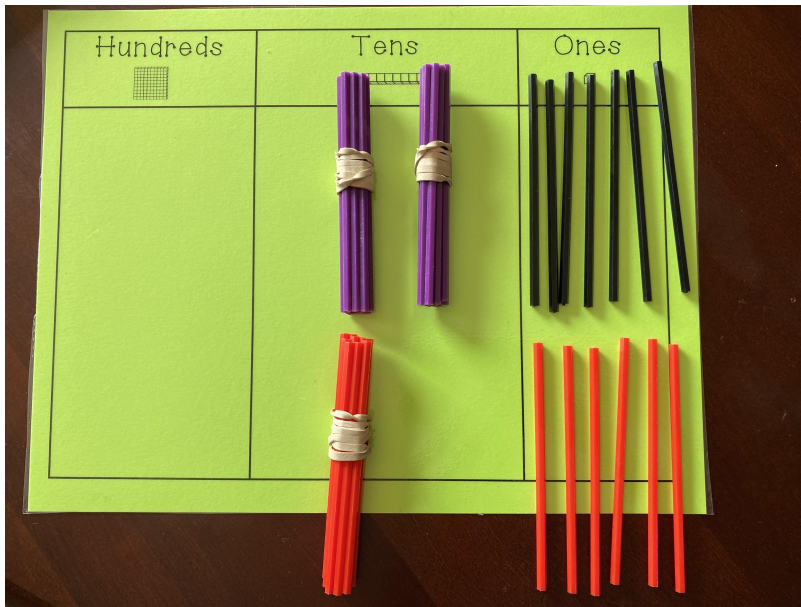
## Arrow Cards



# Activities

**Equal Representations=  
Deeper Understanding**

$$\begin{array}{r} 27 + 16 \\ 2 \text{ tens } 7 \text{ ones} \\ 1 \text{ ten } 6 \text{ ones} \\ \hline 3 \text{ tens } 13 \text{ ones} = 4 \text{ tens } 3 \text{ ones} \end{array}$$





# Activities

## Multiple Representations of a Number

**57**

5 tens    7 ones  
4 tens    17 ones  
3 tens    27 ones  
2 tens    37 ones  
1 ten    47 ones  
0 tens    57 ones

**241**

2 hundreds    4 tens    1 one  
1 hundred    14 tens    1 one  
0 hundreds    24 tens    1 one  
23 tens    11 ones  
22 tens    21 ones  
(and many other)

# Activities

**Which One Doesn't Belong?  
Why? Defend your answer.**

256

53

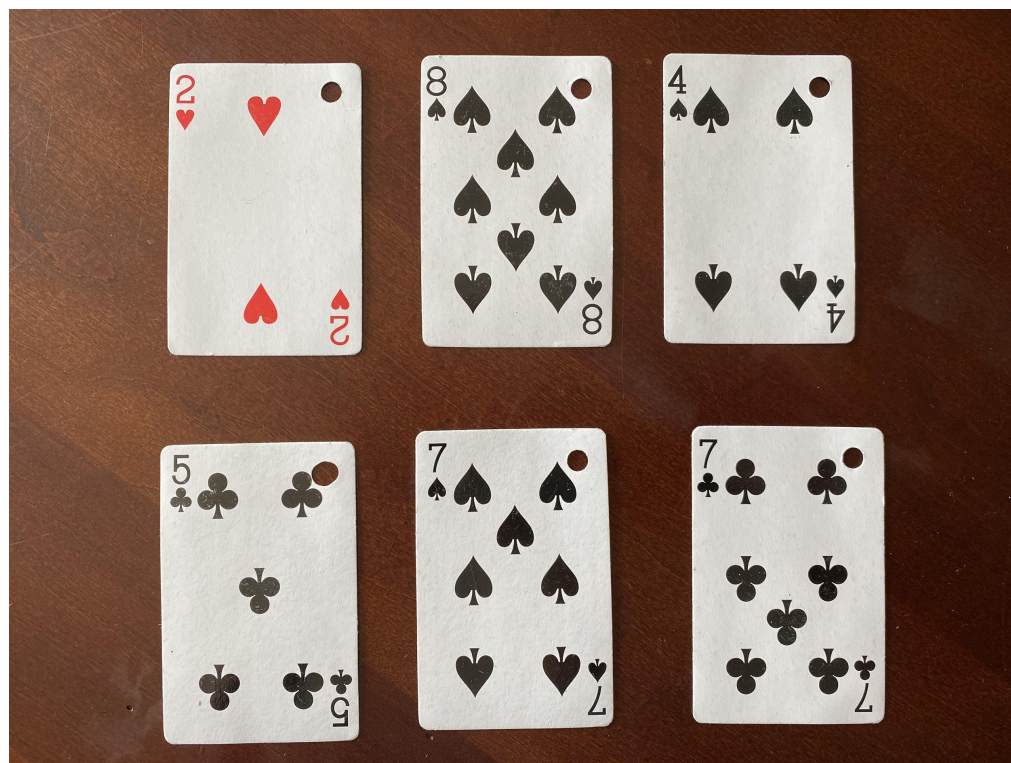
137

529

# Activities

## Power Number

- \*Make largest number using 3 cards.
- \*Make the smallest number you can using 3 cards
- \*Each card can only be used one time.
- \*Extension: Subtract the smallest number from the largest number.



# Upcoming Virtual Professional Learning

APRIL 13 - 17  
2:00-2:30 PM EST



## Focus on Place Value!

w/ KY Math Leaders

Monday, April 13 - Place Value to 10

Tuesday, April 14 - Place Value to 100

Wednesday, April 15 - More Place Value to 100

Thursday, April 16 - Place Value with Multi-digit Numbers

Friday, April 17 - Place Value with Decimals



# Visit Our Website

[https://www.kentuckymathematics.org/kcm\\_virtual.php](https://www.kentuckymathematics.org/kcm_virtual.php)



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## KCM Virtual



At this time of social distancing due to COVID-19, the KCM wants to do our part to support Kentucky teachers, students and mathematics education. So we are providing free online mini-classes to educators. No registration is required. Just click "Join Live Session" to participate in the live class via Zoom or, if you aren't available at the class time, click "View Recorded Session" to view the recorded session when it becomes available.

# KCM is here to support you!

Contact Us



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