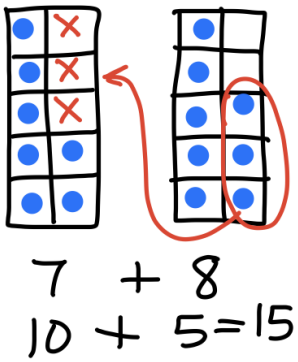
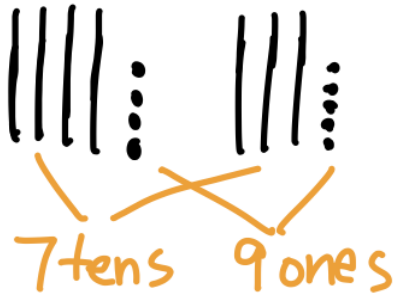
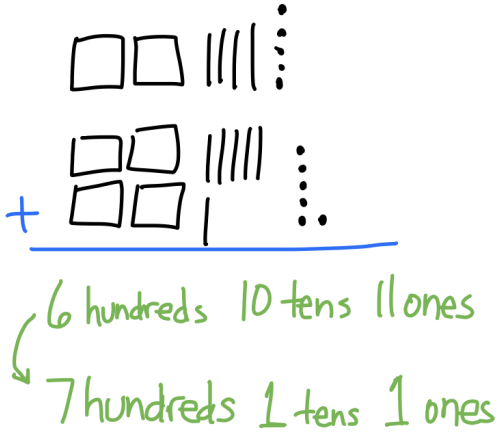
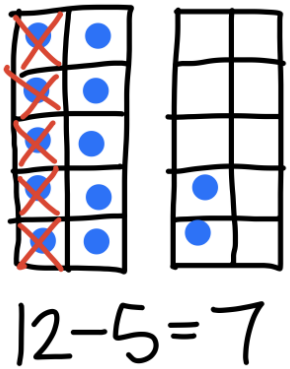
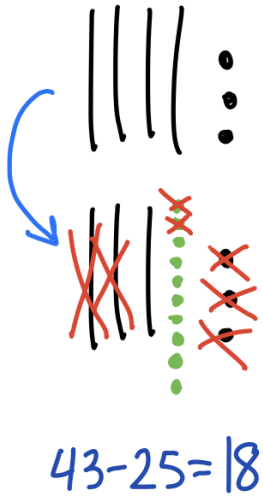
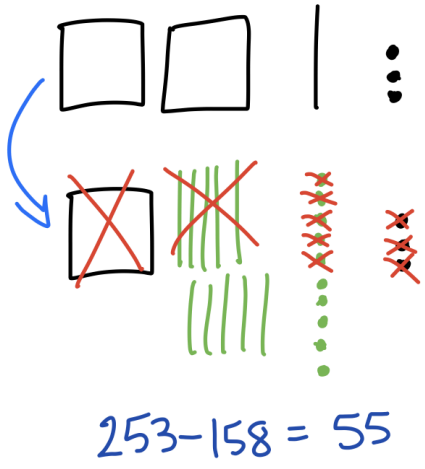
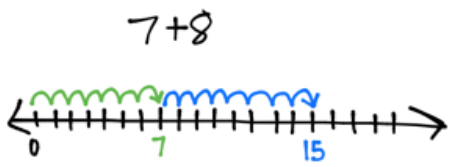
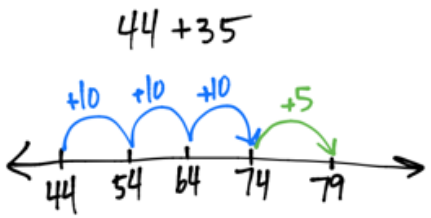
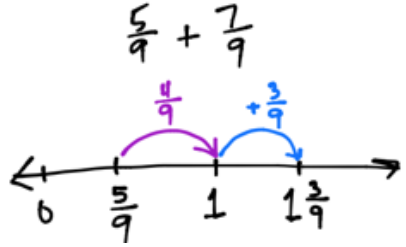
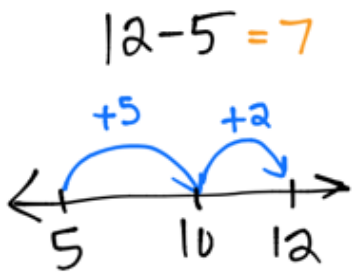
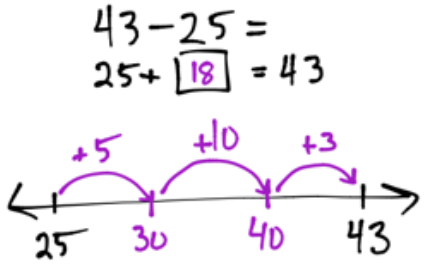
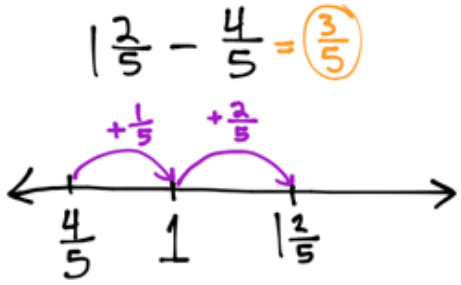
Making Math More Meaningful with Models (MMMMM)

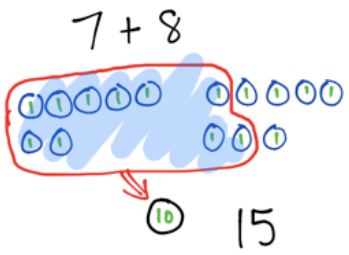
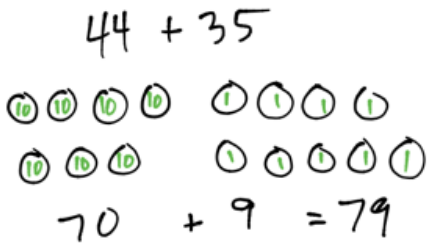
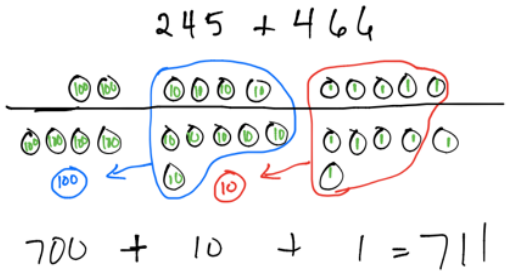
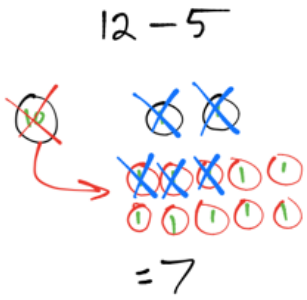
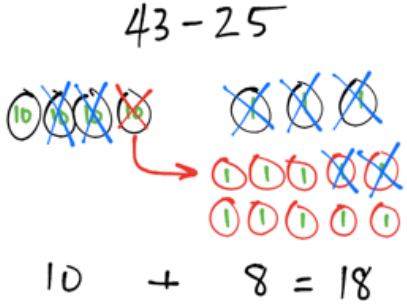
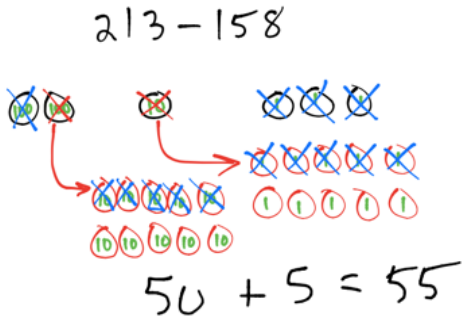
http://bit.ly/MMMMMDuane

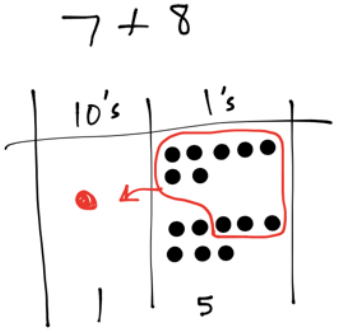
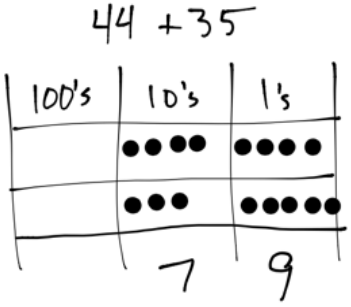
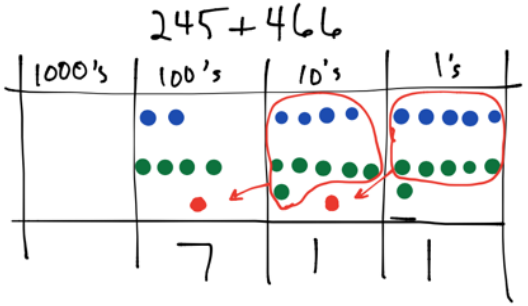
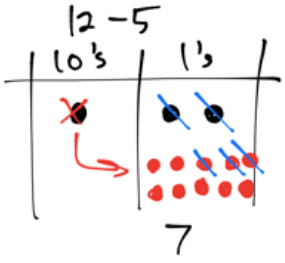
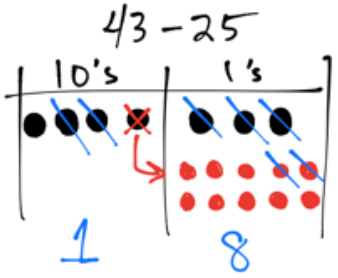
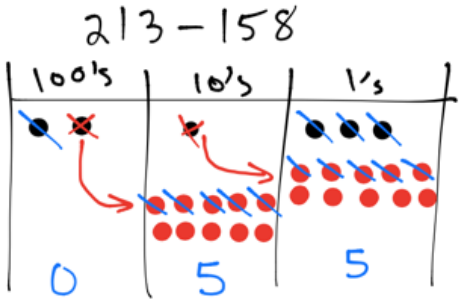
Too often we push our students directly to abstract algorithms without first giving students the prerequisite experience with models such as empty number lines, number bonds, arrow method, area model, etc. Perfect for addressing Common Core math standards.

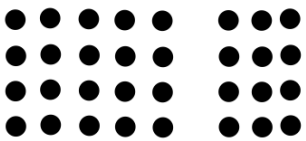
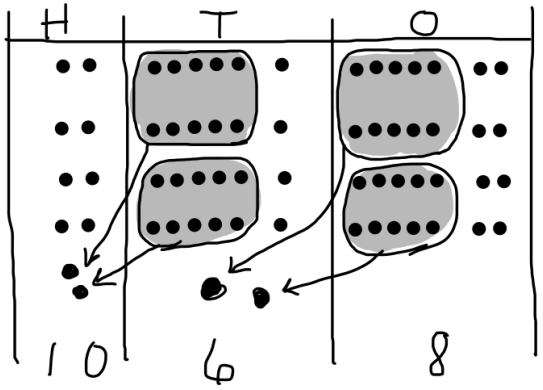
Number Bonds	K/1	2/3	4/5
Addition	7 + 8	44 + 35	5/9 + 7/9
Subtraction	12 - 5	43 - 25	1 ⅖ - ⅘

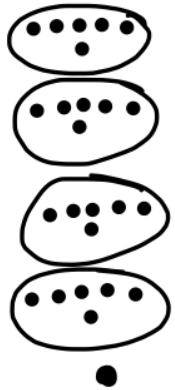
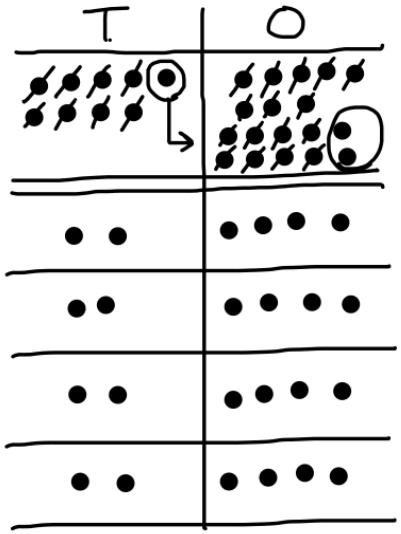
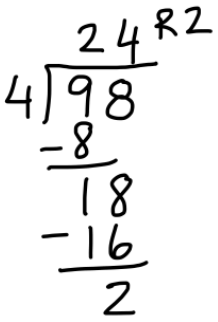
Base Ten Blocks	K/1	2/3	4/5
Addition	7 + 8 	44 + 35 	245 + 466 
Subtraction	12 - 5 	43 - 25 	213 - 158 

Number Line	K/1	2/3	4/5
Addition	7 + 8 	44 + 35 	5/9 + 7/9 
Subtraction	12 - 5 	43 - 25 	1 ⅖ - ⅘ 

Place Value Disks	K/1	2/3	4/5
Addition	7 + 8 	44 + 35 	245 + 466 
Subtraction	12 - 5 	43 - 25 	213 - 158 

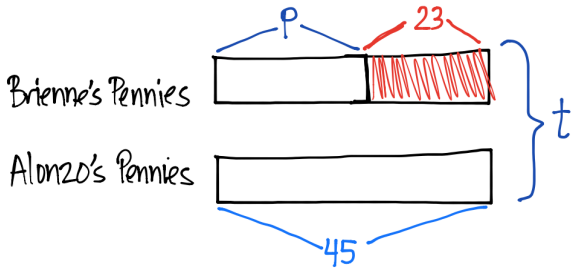
Chip Model with Place Value Chart	K/1	2/3	4/5
Addition	7 + 8 	44 + 35 	245 + 466 
Subtraction	12 - 5 	43 - 25 	213 - 158 

Number Disks with Place Value Chart	Grade 3	Grade 4
Multiplication	4 groups of 8  4 x 5 + 4x3 20 + 12 32 4 x 8 = 32	4 groups of 267  200 + 60 + 7 x 4 800 + 240 + 28 1,068 4 x 267 = 1,068
Grade 5	 2800 + 840 + 98 = 3,738	200 + 60 + 7 x 10 + 4 800 + 240 + 28 + 2000 + 600 + 70 2800 + 840 + 98 3,738

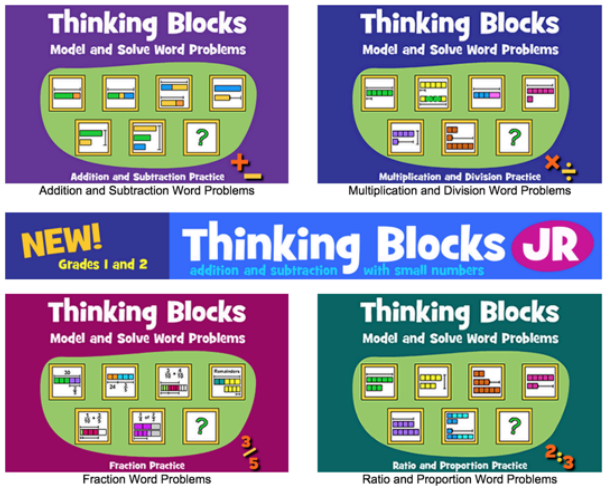
Number Disks with Place Value Chart	Grade 3	Grade 4 and Grade 5
Division		 

Tape Diagrams (Singapore Bar Model) - Awesome for grades 2 through 8!

Brienne has 23 fewer pennies than Alonzo. Alonzo has 45 pennies. How many pennies do Alonzo and Brienne have altogether?



Videos for how to use tape diagrams to model (and solve) word problems:



http://www.mathplayground.com/thinkingblocks.html

Web tools to creating tape diagrams:

- Addition Problems with Tape Diagrams
- Multiplication Problems with Tape Diagrams
- Fraction Problems with Tape Diagrams
- Ratios and Proportions with Tape Diagrams
- A generic tool for practicing tape diagrams

8-Step Method for Solving Word Problems