# My New BFF, the Number Line

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# Welcome

- Meet everyone at your table
- Share what you expect from this session

## Play!  Play!  Play!

# Kindergarten

- Number line isn't explicitly addressed but students are expected to count and organize items in a **line.**

- MCCK.CC.5  Count to answer "how many?" questions about as many as 20 things **arranged in a line,** a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

# First

- 1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

- 1. NBT. 4 add within 100, including adding a two-digit number and a one-digit number, and adding a two digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, and adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

- 1.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value; properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

# Second Grade

Relate addition and subtraction to length

MCC2.MD.5 Use add and subtraction within 100 to solve problems involving lengths that are given in the same units, e.g. by **using drawings(such as drawings of rulers)** and equations with a symbol for the unknown to represent the problem.

MCC2.MD6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences with **100 on a number line.**

# Third

- 3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

- Fuel the brain
- Jump maker

# Fractions
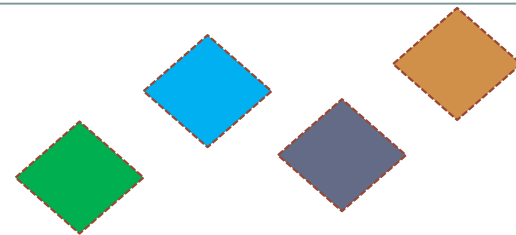
- 3.NF.2 Understand a fraction as a number on the **number line**; represent fractions on a **number line diagram.**

    a. Represent a fraction 1/b on a **number line diagram** by defining the interval from 0 to 1 as the whole and partitioning it into b parts.

    b. Represent a fraction a/b on a **number line diagram** by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the **number line.**

# 3<sup>rd</sup> and 4<sup>th</sup> Time

- 3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g.; **by representing the problem on a number line diagram**

- * continued in fourth (4.MD.2)

Use the four operations to solve word problems involving distances, **intervals of time**, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. **Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.**

# Fourth Grade

- 4.NF.2 Compare two fractions with different numerators and different denominators, e.g.; by creating common denominators or numerators, or by comparing to a benchmark fraction such as ½. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, <, and justify the conclusions, e.g.; **by using a visual fraction model.**

- 4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

- a. Understand a fraction a/b as a multiple of 1/b.

- d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g.; by using visual fractions referring to the same whole and having like denominators; **e.g.; by using visual fraction models** and equations to represent the problem.

- *Extended in fifth (5.NF.4)

# Mental Comparisons

- 5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g.; by **using visual fractions** to estimate mentally and assess the reasonableness of answers.  For example, recognize an incorrect result 2/5 + ½ = 3/7, by observing that 3/7 < ½.

- Number line generator

# Thank you! Hand2Mind

- Interval Time Kits                    IN78384     $12.95
- Fraction Number Lines          IN78382     $15.95
- Fraction Tower Cubes           IN5249      $11.95
- Fraction rulers (10)              IN76856     $26.95
- Cuisenaire rods  Kit (12 sets)     INP01515    $139.95
- UniLink cubes                   IN46482     $8.50
- F.U.N. Empty Number Line Card Set   IN85258     $36.99
- Color tiles ManipuLite          IN315       $11.95

[www.hand2mind.com](http://www.hand2mind.com)

# Human Number Line

## USING THE CARDS, CREATE A NUMBER LINE GOING FROM THE LEAST TO GREATEST.

# Resources

- North Carolina Department of Public Instruction- Instructional support Tools

- [www.ccssmath.org](www.ccssmath.org)

- Hand2mind.com

# Email to get presentation and materials lists

## MCINTYREK@FULTONSCHOOLS.ORG

# Pattern block templates

- http://www.prekinders.com/pattern-blocks/
- http://www.prekinders.com/christmas-pattern-blocks/
- http://raebear.net/goodies/patternblocks/