# Let's Count On Math™ Number Line System - Grade 2+ Kit

**Kit Contents:**

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| Number line pieces: | 0 to 10 (1) | 11 to 20 (1) | 21-30 (1) | 31-40 (1) | 41-50 (1) |
| | 51-60 (1) | 61-70 (1) | 71-80 (1) | 81-90 (1) | 91-100 (1) |
| Number strips: | “1” (10) | “2” (10) | “3” (10) | “4” (10) | “5” (10) |
| | “6” (10) | “7” (10) | “8” (10) | “9” (10) | “10” (10) |

**Purpose:**

To help students develop a deeper understanding of numbers (positive integers) and operations by physically representing and manipulating quantities. The number line system enables students to see patterns, build mathematical relationships, and develop flexible counting strategies that support addition, subtraction, multiplication, division, and later mathematical concepts.

**Thinking - encourage students to ask:**

1) What are we counting? (Ones? Repeated numbers?)
2) How are we counting? (Adding? Subtracting? Multiplying? Pattern? To make equivalents?)

**Using the Number Line System:**

1) At carpet time, other whole class, or teaching time: position the parts of the number line you wish to use on the board at an appropriate height. The teacher or students place number tiles below the number line at the dots to demonstrate various math operations.
2) Place number strips below and above the number line to demonstrate that there are multiple ways to arrive at the same value.
3) Sums to a number. Place a number strip on the board and ask students to use other pieces to make that value. Depending on your objectives, limit them to using only two pieces, or allow other combinations.
4) Use as a station during math centres time.
   A. Place number line strips on the board and have them explore quantities on the number line.
   B. Have multiple 10s (or other number) on the board and have several students explore equivalent combinations to 5.
5) With the additional negative integer kit demonstrate negative integer operations.

**Free 0-100 number line to print and post in your classroom**. See QR code on flip side

**Find the Counting. Find the Meaning.**

**Sample Learning Activities:**

1) Counting groups - use the number strips to demonstrate addition (and subtraction)
2) Skip counting - place multiple tiles of the same number on the number line. Look at the the boundary markers between the ends of number strips as the markers for reciting multiples.
3) Demonstrate multiplication - after placing strips for skip counting, write 1, 2, 3, 4, etc. below the number strips. Now recite one 6 is 6, two 6s is 12, three 6s is 18, etc. Or ask, “How much are three 6s equal to?”
4) Model division (2 ways) - For 15 ÷ 3. Start at 15 on the number line.
    a. For partitive division (How many are in each of the 3 groups?) show that 15 shared equally between three groups, each group would get 5 by placing three “5” strips.
    b. For quotitive division (How many groups of 3 are there?) show a “3” strip can be removed five times from 15.
5) Model division with remainders - To model 35 ÷ 6. Start at 35 (or mark that as the starting point on the board and place “6” strips towards zero to show how many 6s can be removed from 35. Show that after five 6s are removed there is still 5 is remaining. As we are dividing by 6, it is 5/6 remaining to be removed.
6) Demonstrate multiples and LCMs for two numbers, e.g., LCM for 4 and 6. Place “4” strips below the number line. Place “6” strips above the number line. Highlight the points where the ends match up.
7) Model “unknown” questions, e.g., A number plus 5 makes 12. What is the number? (Start at 12 and place a 5 tile - see that seven is remaining. Ask what strip would complete the number?)
8) Visually demonstrate the commutative principle for addition and multiplication:
    1) Demonstration of ways to make 5, have students place 1+4 and 2+3 on the board, ask if there are other ways to make 5 using only 2 strips? 4+1 and 3+2. Demonstrate other part-part(-part)-whole combinations
    2) Model 3x4 by placing three “4”s below the number line. Then ask what would represent 4x3, place four “3”s above. They both equal 12 but they are not the same, i.e., they are physically different. (Very much like making change: One $10 bill = 5 Twoonies = two $5 bills = 10 Loonies)
9) Use the number strips to demonstrate that even numbers are symmetrical (split into two equal/even halves) and that odd numbers cannot be symmetrically split using only whole numbers. Demonstrate that 2n+1 (where n is any one of the number strips) will always make an odd number.
10) Use multiples of the same number strip to demonstrate fractions of the whole. Where applicable use larger or smaller strips to model equivalent fractions, e.g., four “3”s below. two “6”s above, six “2”s, and look at fractions of 12 and their equivalents.
11) Show perfect squares - show the 1 tile is a square. Two 2s, three 3s, four 4s, etc. continue to make a square.

| **Website:** **www.LetsCountOnMath.com** | **YouTube:** **@LetsCountOnMath** |
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| Lesson ideas, classroom resources, printable materials, and product information. | Short demonstrations, teaching tips, and classroom activities covering many K-12 learning outcomes. |

**Find the Counting. Find the Meaning.**