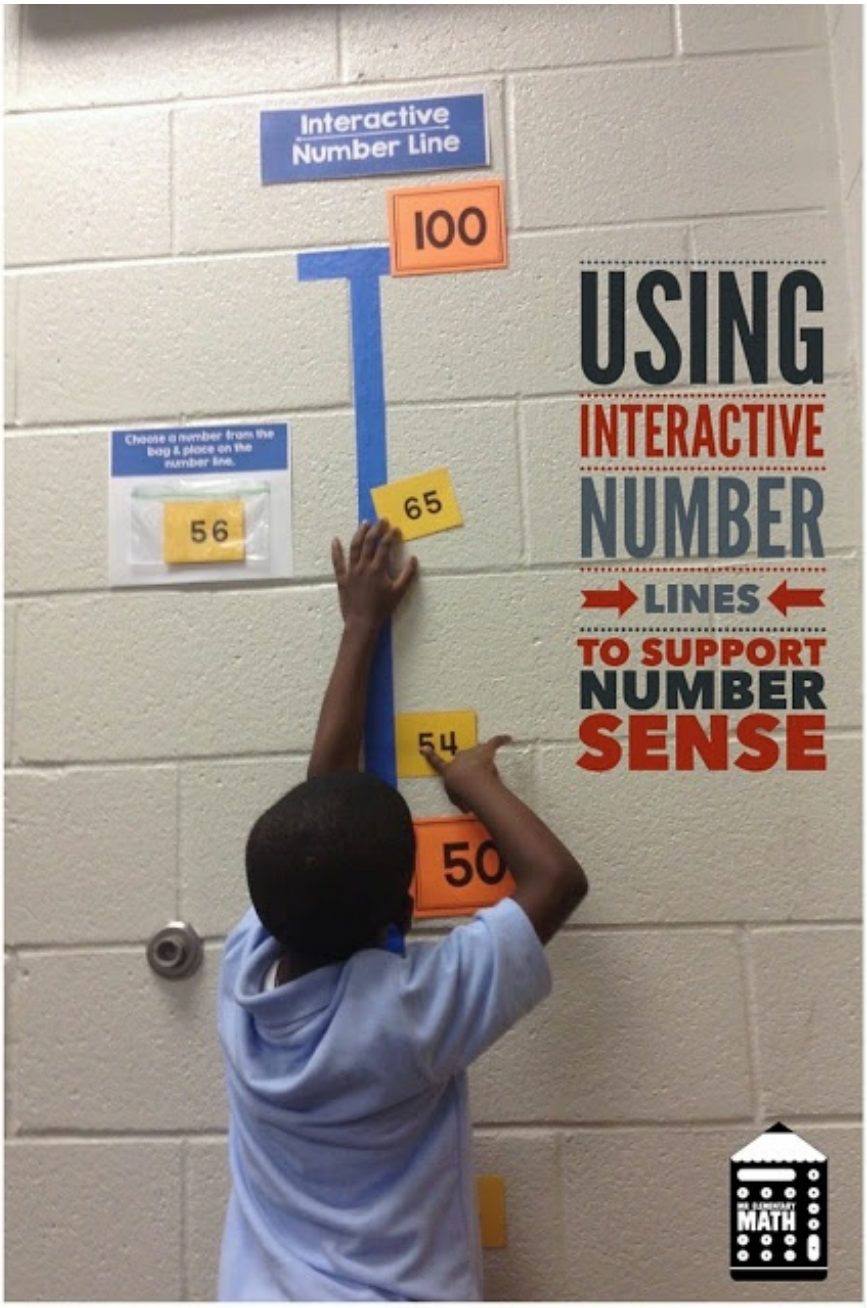
Using Interactive Number Lines to Support Number Sense

Since the beginning of the school year, I've been thinking about ways to build number sense with my students. Check out my earlier post 3 Math Routines to Build Number Sense. I recently stumbled upon an idea about using number lines to help students better understand the relationship between numbers. I thought for days about ways to make a number line that was easily accessible to students and push their thinking.

After some time, I came up with the Interactive Number Line.



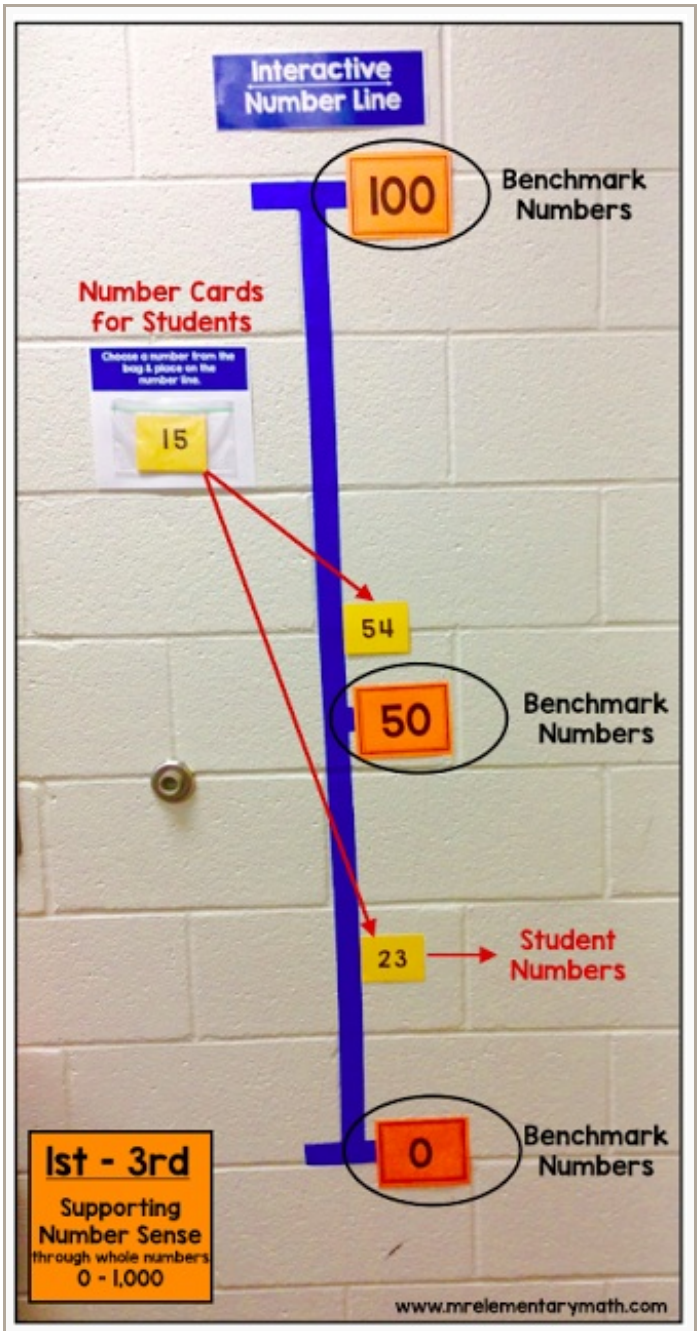
You may be asking, "How can I make my own?" I am so glad you asked because it is pretty simple.

Materials Needed:

- Painter's Tape
- Benchmark Numbers printed on card stock or index cards
- Ziplock bag to store Student Numbers
- Student Numbers printed on card stock or written on post it notes

How to Create an Interactive Number Line:
1 - Use a long strip of painter's tape to form a vertical number line on the wall
2 - Use smaller strips to create hashmarks for benchmark numbers
3 - Place benchmark numbers next to each of the hashmarks using number cards or sticky notes

What is the Purpose of the Interactive Number Line?
Number lines help bridge gaps for students to better understand numbers that come before or after a given number. I love using interactive number lines because the numbers are completely out of sequence. My students develop a deeper understanding of the number system because they are required to put random numbers back into the correct sequence. In this case, I like using a vertical number line because students can "see" the numbers increasing or decreasing.



Ways to use the Number Line:
Counting and understanding relationships between numbers are very important math concepts. Number lines can be used to focus on small bands of numbers.

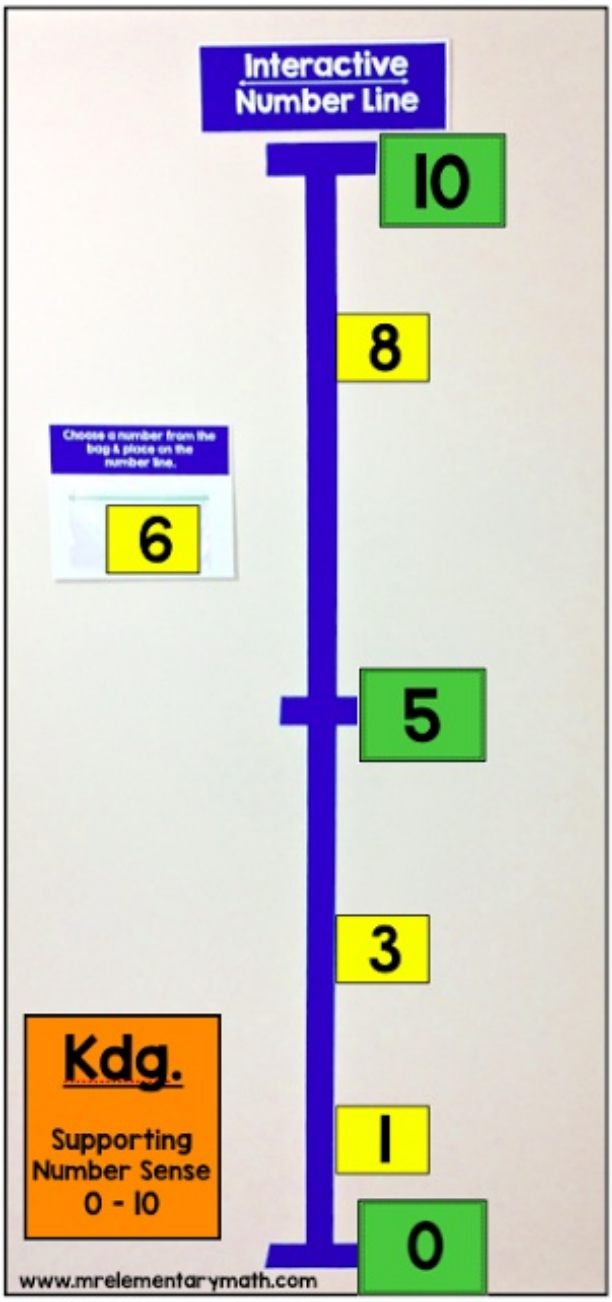
- Kindergarten and 1st grade teachers can focus on the number bands 0 through 20, using 0, 5,10, 15, 20 as benchmarks
- 2nd - 3rd grade teachers can focus on number bands 0 - 1000, using 10s, 100s or multiples of 25 as benchmarks
- 4th - 5th grade teachers can focus on multi-digit whole numbers, decimals or fractions

Student differentiation comes into play when you allow specific groups of students who are experiencing difficulty to focus only on their area of need. Consider tailoring the student number cards for specific groups or having multiple number lines around the room for various groups. For example, Group A may need more support with numbers 50 - 100 so I would setup a number line starting with 50 and ending with 100 using 75 as the middle benchmark number. Group B may need to be pushed to work with numbers beyond 1000 therefore that number line would have a beginning number of 1000 and ending number of 2000. In this case, I could use multiples of 100 as benchmarks for the hashmarks like 1100, 1200, 1300, 1400, etc.

You can use an interactive number line as a lesson opener (hook), whole group mini-lesson, center activity or a quick assessment.

How Can I Use Interactive Number Lines with Lower Grade Students?
The numbers 5 and 10 are very important benchmark numbers for kindergarten and 10 is extremely critical for 1st graders. They are also learning the concepts of more and less. Use interactive number lines to help reinforce these concepts. Check out the example below.

How Can I Use Interactive Number Lines with Upper Grade Students?
Number lines can also be used with upper grade students to support fraction and decimal understanding. Using interactive number lines really helps to bridge student misconceptions about these concepts. Check out an example below.
Click here for FREE resources to help you get started creating your Interactive Number Line.



3 Things to Consider when Using Interactive Number Lines:

- Start by having the students make sense of the number line. It was helpful when the kids plotted the benchmark or friendly numbers within the number band before placing the Student Cards on the line. For example, when looking at the number band 0 - 100, the students found it helpful to determine where 10, 20, 30, 40, 50, 60, 70, 80 and 90 should be on the number line. This single step helped a lot because the span from just 0 through 100 was too broad for my students.

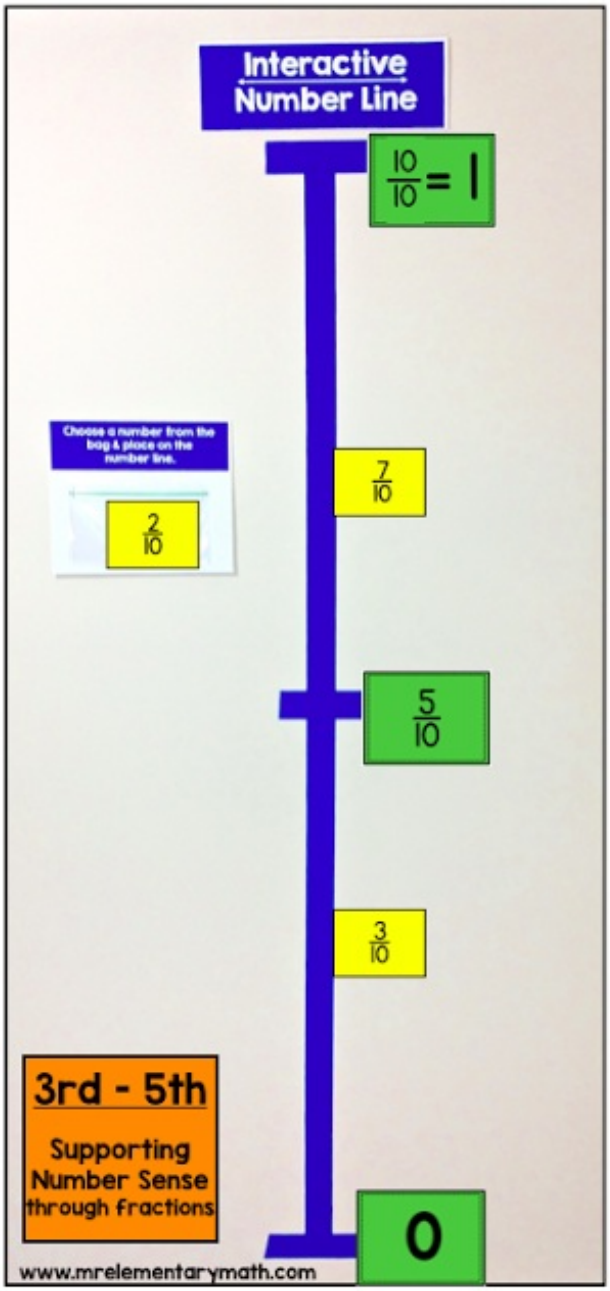
- If your wall is made of cinder blocks, use the lines between each cinderblock as a benchmark. This really supports spatial reasoning and distance between numbers. I didn't do this step the 1st time and some students had problems visualizing the distance between each benchmark. This step worked as a scaffold for the students and me :)

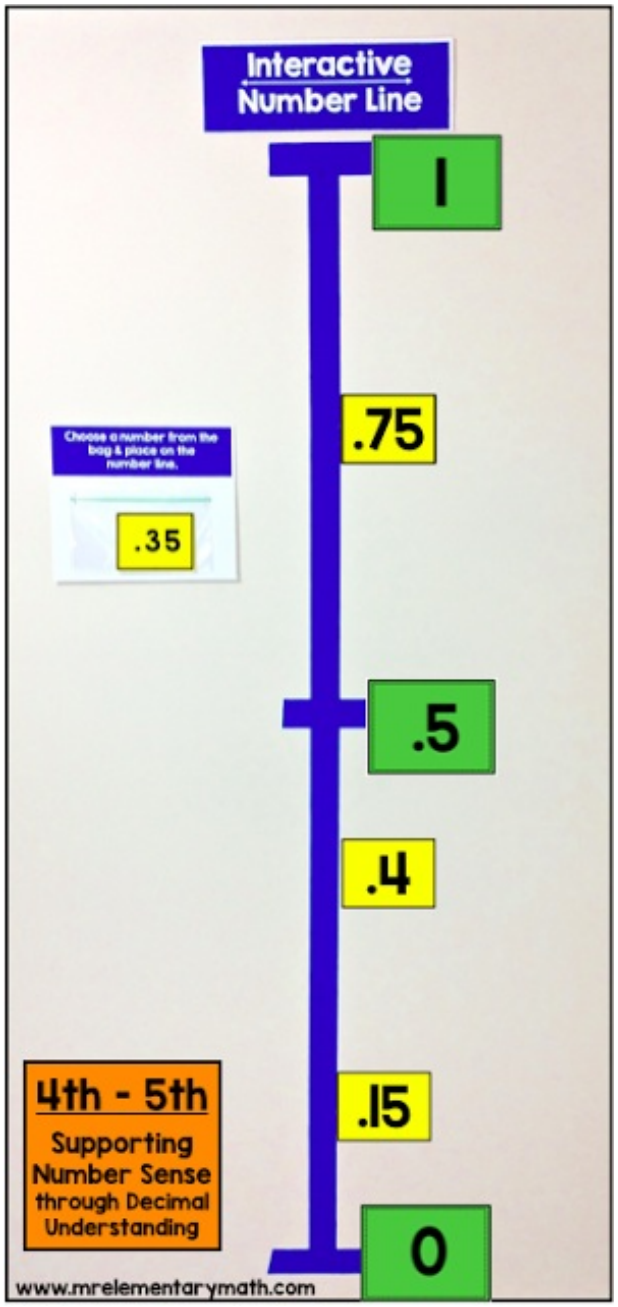
- Use a vertical number line like the picture instead of a horizontal number line. Students really "see" how the larger numbers are represented on top and smaller numbers are toward the bottom. Plus a vertical number line is an EXCELLENT tool to help with the concept of rounding and decimals.

Overall, I love this tool! It would be great to have 2 or 3 of them setup in your classroom, this way students can work together to build their own understanding of numbers.

If you decide to use the Interactive Number Line, let me know how it works in your classroom in the comments section below.

Want more FREE number sense resources? Download Building Number Sense Flip and Go Math Cards


Interactive Number Line
$\frac{10}{10} = 1$
Choose a number from the bag & place on the number line.
$\frac{2}{10}$
$\frac{7}{10}$
$\frac{5}{10}$
$\frac{3}{10}$
3rd - 5th
Supporting Number Sense through fractions
0
www.mrelementarymath.com



Greg
aka
Mr. Elementary Math