NUMBER LINES MATH MAT

Use the Number Lines Math Mat to engage students in conversations about numbers and fractions as numbers on a number line. Here are some examples of great ways to use the number lines to promote math exploration and discussion.

What Do You Notice? (K-1)

- Give each student a Number Lines Math Mat. Ask students to look at the number lines and find one thing that is the same about all three number lines and one thing that is different about all three number lines.
- Ask students to share their ideas with a partner and then discuss their findings as a whole class.
- Focus the class discussion on questions such as, "What do the arrows represent? What do you notice about the spaces between each number on the number lines? All 3 number lines begin with 0, but does a number line HAVE to begin with 0? What number comes next on each number line? How do you know?"

What If I. . .? (Gr. 1-2)

- Give each student a Number Lines Math Mat, whiteboard, dry erase marker, and math tools. Give students a few minutes to look over the number lines and share a few things that they notice about the number line.
- Explain to students that you are going to ask them, "What If I...?" questions and they will change their number lines to match the What If question. Students can use whiteboards and math tools as needed to determine how to change or work on the number lines.
- After you ask each question, discuss whether or not the number line is still correct and how they know, how they know they represented addition or subtraction, etc.
- Ask students questions such as, "What If I...:
  - Add 10 to each number on the number line?
  - Add 100 to each number on the number line?
  - Double each number on the number line?
  - Use a number line to solve an addition problem?
  - Use a number line to solve a subtraction problem?
  - Add the next number onto each number line?

How Many Ways? (Gr. 2-3)

- Give each student a Number Lines Math Mat. Discuss what students know and notice about the number lines.
- Ask students to turn and talk with a partner and discuss all of the things a number line can be used to represent.
- Have students share their thinking. Discuss each idea and use the number lines on the game mat to prove that a number line could represent each idea.
- Students might suggest number lines could be used to:
  - Count by ones
  - Represent addition, subtraction, multiplication problems
  - Determine elapsed time
  - Denote the scale on a bar graph
  - Skip count
  - Compare numbers

Can We Compare? (Gr. 3-5)

- Give students a Number Lines Math Mat and a dry erase marker.
- Ask students to compare the number lines and discuss how they are the same and how they are different.
- Ask students to partition each number line into halves.
- Ask students questions such as, "What do you notice about the halves on each number line? Do they each represent *halves*? If so, why are they not the same?"
- Discuss that fractions must come from the same whole in order to be compared. The spaces on all three number lines are not the same, so the fractions cannot be compared.
- Ask students to think of real world examples of when you need to know the size of the whole to know the size of the fractional pieces (e.g., a king sized candy bar vs a snack size candy bar, a small pizza vs a large pizza, etc.).
- Ask students, "What happens to the size of the fractions as we move from the top number line to the bottom number line? Why?"
- Discuss that the size of the whole decreases as you move from the top number line to the bottom number line therefore the size of the fractional pieces decreases too.
- Repeat with thirds or fourths to further explore.