

**You do not need to write anything down. Use the physical manipulatives (dental floss, rubber bands, number lines, linking cubes) to represent *multiplication* in different ways:**

1. Represent  $3 \times \frac{1}{2}$  discretely by *iterating* or *placing* objects along the number line.
2. Represent  $3 \times \frac{1}{2}$  dynamically by *stretching* or *lengthening* objects along the number line.

**Use the physical manipulatives (dental floss, rubber bands, number lines, linking cubes) to represent *division* in different ways:**

1. Represent  $3 \div \frac{1}{2}$  discretely by *iterating* or *placing* objects along the number line.
2. Represent  $3 \div \frac{1}{2}$  dynamically by *stretching* or *lengthening* objects along the number line.

Think about the four ways we are focusing on these operations. Which of them do you think would support your students' understanding? Why or why not? Talk to your neighbor and we'll share it out in a few minutes.

1. **Interaction of mathematical objects:** Lengths, Fractions, and Number Line
2. **Relationships between quantities & numbers:** Discrete vs. Continuous *quantities*
3. **Relationships between actions & operations:** *Action* of Multiplication vs. Division
4. **Representations of length measurement:** Dynamic vs. Static *representations*