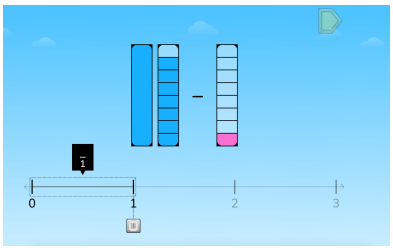
PUZZLE TALK

Fifth Grade	Unlike Denominators Addition and Subtraction	Scale Fraction Visual

Materials

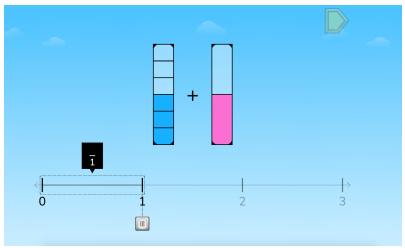
whiteboards and dry erase markers
fraction tools such as fraction strips, connecting cubes, blocks or Cuisenaire rods

Directions



- Give students whiteboards and dry erase markers. Display the first puzzle from Level 1. Ask students "What do you notice?" Have students turn and talk to a neighbor and discuss how they think they should solve the puzzle.
- Discuss the size of partitions and denominators as you move the cursor to select how the number line will be partitioned.
  - Discuss why they select a particular denominator to partition the number line
  - Ask students, "Could a different denominator be selected? How could we prove it?"

- Have students build a bar model from a puzzle with fraction strips, connecting cubes, blocks, or Cuisenaire rods and use the bar model to represent how they solved the problem.
  - Discuss and record the equations for how students solve the puzzles. (e.g., 1 + 1 + 2/4 + ¼ + ½)
  - Discuss and record the equations shown in the puzzles.
  - Include different ways to write the fractions and mixed numbers.
- Repeat with the remaining puzzles in Level 1



Sample Questions

- How did you determine how to divide/partition the number line?
- How did you determine your solution?
- Did you need to convert the fractions to a common denominator?
- How did you find a common denominator?
- Why do fractions need to have a common denominator before we add or subtract them?

What to look for

How does the student:

- use fraction equivalence to help them solve the problems?
- break down the mixed numbers to help them add or subtract the numbers?
- model what is happening in the puzzle?
- express their answer? (Do they use a mixed number? Fraction?)