

# Puzzle Talk - Grade 5

## Number Line Equivalence (Level 1)

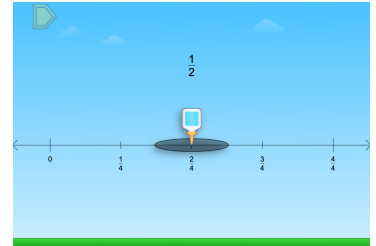


**ST Math**  
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These facilitation suggestions are what a student-led discussion might look like when looking at puzzles in Level 1. Depending on how students respond, it likely would take one session for Level 1.

### Description

- **Puzzle Location:** Grade 5 > Common Denominators and Equivalent Fractions > Number Line Equivalence > Level 1
- **Topic:** Find equivalent fractions
- **Purpose of the Puzzle Talk:** Focus on student thinking and developing problem solving skills using guiding questions for each step in the Problem Solving Process
- **Preparation:** View the [Game in a Minute](#) video
- **Gather Materials:** Provide students with a whiteboard and a dry-erase marker with an eraser



[click here for puzzle](#)

### Notice and Wonder

- Display the first puzzle from Level 1.
- Ask: "What do you notice about this puzzle? What do you wonder about this puzzle?"
- Allow students to share out.

### Predict and Justify

- Ask students to think individually about how they could solve the puzzle, then turn and share with a partner before sharing as a class.
- Students should provide mathematical reasoning for the idea they want to try. They can sketch ideas on the whiteboard to represent the puzzle and justify their thinking.
- As students share their strategies, engage them in conversation about fractions on a number line including the meaning of the numerator and denominator.
- List students' ideas and strategies for the class to consider.

### Test and Observe

- Select one of the students' strategies.
- Solve the puzzle and have students describe what happened.

### Analyze and Learn

- Ask students to think about how what they saw happen compares to their prediction.
  - If the answer was incorrect, discuss what was learned and what they think is best to try next. Have students share why that is the best way to solve the puzzle.
  - If the answer was correct, how can they take what they learned and apply it to the next puzzle?
- Show a puzzle that does NOT have the fraction in the sky labeled on the number line.
- Have students turn and talk to a partner about where they think they should place the fraction in the sky on the number line and why.
- Share students' strategies for finding the equivalent fraction on the number line. Select a strategy to try. Discuss it before trying. What does the class think will happen?
- Ask: "What are some ways that you could prove that these fractions are equivalent?"
- Try the strategy and observe the feedback.
- You can use the animation controls to pause the puzzle while students check if their answer matches the puzzle on the screen. Discuss how this might provide evidence for why the solution will work or not work.
- Repeat with additional puzzles in Level 1.