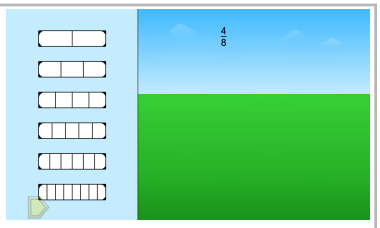
Puzzle Talk - Grade 3

Fraction Bricks (Level 1)

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 3 > Fraction Equivalence and Ordering > Fraction Bricks > Level 1
- **Topic:** Select equivalent partitioned rectangles
- **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 fraction manipulatives, whiteboards, and dry-erase markers



click here for puzzle

Notice and Wonder

- Display the first puzzle from Level 1.
- Ask students, "What do you notice? What do you wonder about this puzzle?"
- Allow a few students to share their thinking with the whole class.

Predict and Justify

- Ask students to think about how they might solve this puzzle. After having a moment to think individually, ask students to turn to a neighbor and share an idea. Ask students to share an idea that they heard and would like to try.
- Students should provide mathematical reasoning for the idea they want to try. This might include using fraction manipulatives to build the fraction shown on the screen.
- As students share their strategies, list these ideas for the class to consider.

Test and Observe

- Select one of their solutions to try.
- Solve the puzzle and have students describe what happened.

Analyze and Learn

- Use the animation controls to replay and examine what happens in the puzzle.
- Ask students to compare what happened to what they thought would happen. Then ask follow-up questions such as these:
  - What did we learn from the feedback?
  - Why was there more than one partitioned rectangle that solved this puzzle? Can you think of another partitioned rectangle that would also work? Explain.
  - How did you use what you know about the numerator and the denominator to solve this puzzle? Explain.
  - Can you describe the mathematics that is happening in this puzzle?
  - Continue with puzzles from Level 1.
- Students can write the fractions they are building on whiteboards to see if there is a pattern between the fractions that fill the hole. They can build a fraction that they predict will NOT fill the hole. Ask them to provide justification for why this solution would not solve the puzzle.
- Ask students, "What do you notice about what the denominator of the fraction tells us about the size of the pieces? What do you notice about what the numerator of the fraction tells us about the number of pieces (unit fractions) that will be used?"
- Ask students: "How can we prove that the fractions that fill the hole are equivalent?" Have them share their different strategies.