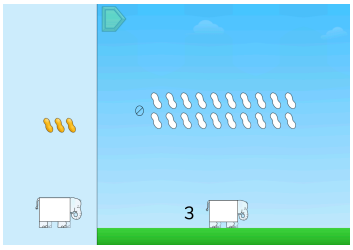
PUZZLE TALK

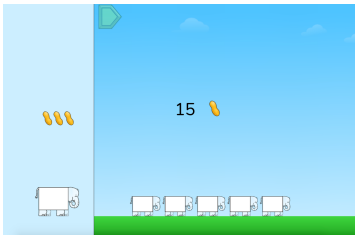
Fifth Grade | **Fraction Division** | **Select Peanut or Elephant Multiplier**

Directions

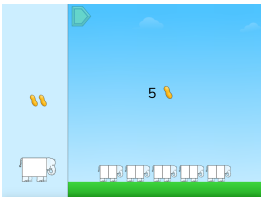
NOTE: Students should participate in this puzzle talk **AFTER** Select Peanuts, Select Elephants and Select Peanuts Per Elephant. The Elephants and Peanuts puzzles in the Fraction Division module should be completed **BEFORE** any puzzle talks in the Fraction Division LI module.



- Give students a whiteboard, dry erase marker and math tools. Display the first puzzle in Level 1. Ask students, "What do you notice?"
- Discuss what students see on the screen and what they are able to select. Ask students, "What is known in this puzzle? What is unknown? How do you think we solve this puzzle?"
- Have students Think, Pair, Share with a partner and determine their solution.
- Try a student's solution and watch the feedback. Ask students, "How could we represent this puzzle with an equation? What is happening in this puzzle? Does this puzzle represent multiplication or division? How do you know?" Work together to write a multiplication equation to represent the puzzle (e.g., If 1 elephant eats 4 peanuts, how many peanuts does 3 elephants eat. 3 x 4 = 12 or 4 x 3 = 12).
- Ask students, "What does each number in this equation represent?" Repeat with a few other puzzles from Level 1 until the first puzzle with a fraction.
- Ask students, "How is this puzzle different? What is happening in this puzzle? How could we represent this puzzle with an equation?" (e.g., If 1 elephant eats 12 peanuts, how many peanuts does 1/3 elephant eat. 1/3 x 12 = 4 or 12 x 1/3 = 4.) Solve the remaining puzzles in Level 1.



- Level 2. Ask students, "What do you notice? What is different about this puzzle? Does this puzzle represent multiplication or division? How do you know?"
- Discuss what they know in the puzzle and what is unknown. Have students Think, Pair, Share with a partner and determine their solution.
- Try a student's solution and watch the feedback. Say to students, "What is happening in this puzzle? How did you determine how many elephants to select?" (For example, If each elephant eats 5 peanuts and we have 20 peanuts total, how many elephants can we feed? How do you know?")
- Ask students, "How could we represent this with an equation?" Model how to write a division equation to match the puzzle (e.g, 20 ÷ 5 = 4). Ask students, "What does each number in this equation represent?"



- Repeat with the next puzzles in Level 2 until you come to a puzzle with a partitioned elephant. Ask students, "How has the puzzle changed? The elephants have been partitioned into how many equal parts? Why?"
- Compare this puzzle to whole number by whole number division and represent the puzzle with an equation (e.g., 2 ÷ 3 = 2/3). Repeat with the remaining puzzles in Level 2.

Sample Questions

- What is known in this puzzle? What is unknown?
- Does this puzzle represent multiplication or division? How do you know?
- How did you solve this puzzle?
- How did you determine how many elephants to select? Peanuts?
- How could you represent this puzzle with an equation?
- What does each number in the equation represent?

What to look for

How does the student:

- determine what is known and unknown in the problem?
- explain whether the puzzle represents multiplication or division?
- explain the strategy used to solve the puzzle?
- represent the puzzle with an equation?
- explain what each number in the equation reprsesnts?
- discuss the relationship between multiplication and division and the role of the numerator and denominator in determining the solution?