PUZZLE TALK

| Fifth Grade	Fraction Division	Select Elephants

NOTE: Students should participate in this puzzle talk **AFTER** they have worked through Select Peanuts and **BEFORE** any other Elephants and Peanuts puzzle talks are completed.

<div style="writing-mode: vertical-rl">Directions</div>

- 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 they know about the elephant on the left. How many pieces does that one elephant eat? Discuss how many peanuts they see on the right.
- Ask students, "How do you think we solve this puzzle?" Have students turn and talk to a neighbor to share their ideas.
- Ask students, "How many elephants will we be able to feed if each elephant eats ___ peanuts and we have ___ peanuts to feed them?"

- Have students Think, Pair, Share with a partner and determine their solution.
- Try a student's solution and watch the feedback. Say to students, "How could we represent this puzzle with an equation? What is happening in this puzzle?" Work together to write a division sentence to represent the puzzle (e.g., If each elephant eats 5 peanuts and there are 15 peanuts, then 3 elephants can be fed because $15 \div 5 = 3$.)
- Ask students, "What does each number in this equation represent?" Repeat with other puzzles from Level 1.
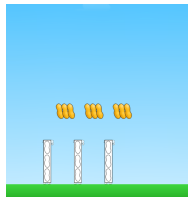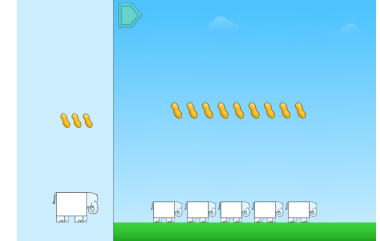

- Display the first puzzle in Level 2 that shows more less peanuts in the sky than what 1 elephant eats. Ask students, "What do you notice? What is different about this puzzle? How many equal parts has the elephant been partitioned into?"
- Discuss what they know about the elephant on the left. How many peanuts does that one elephant eat? Discuss how many peanuts they see on the right. Ask students, "How does the number of peanuts 1 elephant eats compare to the number of peanuts we have? How is this puzzle different from the ones we just solved?" (e.g., If each elephant eats 2 peanuts, how many elephants can 1 peanut feed? How do you know?)
- Have students Think, Pair, Share with a partner and determine their solution.
- Try a student's solution and watch the feedback. Say to students, "How could we represent this puzzle with an equation? What is happening in this puzzle?" Work together to write a division equation to represent the puzzle (e.g., If each elephant eats 2 peanuts and there is 1 peanut, then 1 peanut would feed ½ elephants or $1 \div 2 = 1/2$).
- Ask students, "What does each number in this equation represent? How did you determine what denominator to use for the fraction in this equation?"

- Repeat with a few other puzzles in Level 2. Ask students, "What do you notice about the division equation and the answer?" Help students to see that another way to read the fraction ½ is "1 divided by 2" or ¼ is the same as "1 divided by 4".
- Display the first puzzle in Level 3 that shows more peanuts in the sky than 1 elephant eats.
- Discuss what they know about the elephant on the left. How many pieces does that one elephant eat? Discuss how many peanuts they see on the right. Ask students, "How many elephants will we be able to feed if each elephant eats ___ peanuts?" (e.g., If each elephant eats 4 peanuts, how many elephants will 6 peanuts feed? How do you know?)
- Have students Think, Pair, Share with a partner and determine their solution.

- Try a student's solution and watch the feedback. Say to students, "How could we represent this puzzle with an equation? What is happening in this puzzle?" Work together to write a division equation to represent the puzzle (e.g., If each elephant eats 4 peanuts, how many elephants will 6 peanuts feed? $4 \div 6 = 4/6$).
- Ask students, "What does each number in this equation represent? How did you represent your solution if the elephants were not partitioned into the denominator of your solution? (e.g., The solution was 12/8 but the elephant is partitioned into fourths. Students must understand that it takes 2 one-eights to make 1 one fourth so 12/8 would be the same as 6/4.)
- Discuss students' strategies for determining an equivalent fraction as needed.
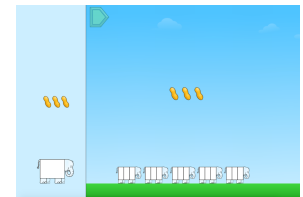
Sample Questions	• How many elephants will this number of peanuts be able to feed? How do you know? • How could we represent this puzzle with an equation? • What does each number in the equation represent? • How did you determine the denominator? • How many equal pieces are needed to make 1? • How do you know these fractions are equivalent?

What to look for	How does the student:
	  • determine the number of elephants that can be fed with the given number of peanuts?
	  • explain why the solution is a whole number or a fraction?
	  • represent the puzzle with an equation?
	  • explain what the denominator of the fraction in their equation represents?
	  • explain that the puzzles reprsesent a whole number divided by a whole number?