PUZZLE TALK

| First Grade ➡	Addition and Subtraction Situations with Unknowns ➡	Pie Monster Addition

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Standards	1.CC.OA.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ___ - 3, 6 + 6 = ___.
Game Description	Select the number of pies on the ground or on the table to equal the number of pies on the monster's back when added to the given pies that are already on the table or the ground. Also, may need to select the number of pies on the monster's back to show the total number of pies shown on the table and the ground. Use the model to solve addition and subtraction problems. Includes missing addend.
Suggested Puzzles	Level 4 Level 4 Level 4
Materials	Game mats, 2 color counters, paper and pencil, dry erase markers, whiteboards
Directions	● Play Level 1 of the Pie Monster Addition game to introduce students to the game. Have an informal discussion about what they notice happening in the puzzle. ● Make game mats, paper, white boards and 2 color counters available for students as math tools. ● Project a puzzle from Level 4. Have the students model the problem and solution using their math tools. ● Have students explain to a neighbor how their model represents the problem and solution. Select different students to share (look for different types of strategies) and discuss as a class.
Sample Questions	● What is the question this puzzle is asking us to solve? ● How did you solve the puzzle? ● Explain how your model represents the puzzle. ● Can you write an equation to represent this puzzle?
What to look for	How does the student: ● solve the puzzles? (Are they thinking flexibly about addition and subtraction? Do they struggle with specific problem types? (ex. result unknown, change unknown, start unknown)) ● write an equation to represent the problem? (Great opportunity to connect the visual to the symbolic and reinforce the meaning of equality as "same as".)
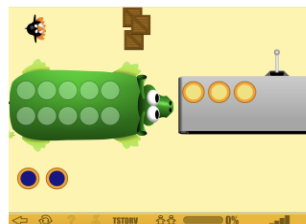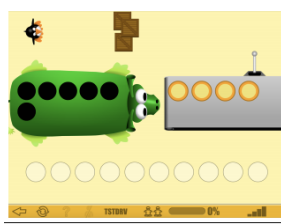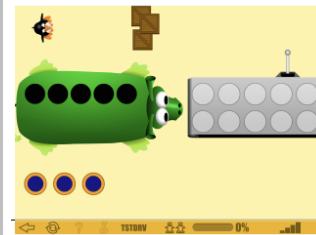
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- Show students a puzzle. Have them create a word problem from the puzzle.
- Place students in pairs and give them a game mat. Have them play some puzzles in Pie Monster Subtraction. Have them take turns rolling a number cube (1-6). Each student will select what he/she wants the number they rolled to represent and draw it on the game mat. (Ex. Student A rolls a 3 and draws three pies on the monster. Student B rolls a 5 and draws five pies on the conveyor belt). Once both students have drawn their pies on the game mat, they will work to solve the problem and represent it with an equation.

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