**Planning for Mathematical Discourse – Algebra I – The Full Parking Lot**

|  |  |
| --- | --- |
| **Teacher Completes Prior to Task Implementation** | **Teacher Completes During Task Implementation** |
| **Anticipated Student Response/Strategy***Provide examples of possible correct student responses along with examples of student errors/misconceptions* | **Assessing Questions – Teacher Stays to Hear Response***Teacher questioning that allows student to explain and clarify thinking* | **Advancing Questions – Teacher Poses Question and Walks Away***Teacher questioning that moves thinking forward* | **List of Students Providing Response** *Who? Which students used this strategy?* | **Discussion Order - sequencing student responses** * *Based on the actual student responses, sequence and select particular students to present their mathematical work during class discussion*
* *Consider ways to ensure that each student will have an equitable opportunity to share his/her thinking during task discussion*
 |
| **Anticipated Student Response:** Guess and check.\*This strategy will obtain a correct solution, but would not be course appropriate for mathematical understanding. | What assumptions did you make about the number of wheels?What’s going on in this situation? | How can you take your original trial and get closer without trying all options?What are you noticing? |  |  |
| **Anticipated Student Response:** Drawing a picture – 20 spaces w/ number of wheels per space.\*This strategy will obtain a correct solution, but would not be course appropriate for mathematical understanding unless there is further support. | How did you decide what to draw?What’s going on in this situation? | How could you simplify your picture?How many wheels have to be in every space? | **Student E****Student F** |  |
| **Anticipated Student Response:** student chart samplePossible Misconception: students might start with 10 and 10, but go up in both columns, forgetting there are only 20 parking spaces. | How did you decide where to begin your table?How many parking spaces are you allowed? | How can you take your original trial and get closer without trying all options?Do you see any patterns in your table? | **Student E**\*This student does not actually make a table, but explains how they did begin their process with 10 of each type of vehicle. |  |
| **Anticipated Student Response:** Solve an equation/or a system of equations using substitution: $4x+2\left(20-x\right)=66$Possible Misconception: students may struggle to define their second vehicle type in terms of the first. | Explain how you came up with the parts of your equation.Why did you choose to define motorcycles (or cars) in terms of the other vehicle? | Is this the only equation that would work?How can you use the number of parking spaces within the equation? | **Student A****Student C** |  |
| **Anticipated Student Response:** Write and solve a system of equations by graphing:$$\{x+y=20 4x+2y=66 $$Possible Misconception: Students often see how to relate the number of wheels, but struggle with the first equation. | What do your variables represent?How many parking spaces do you have to work with? | Can you solve this system in more than one way?How can you incorporate the number of parking spaces in an equation? | **Student D** |  |
| **Anticipated Student Response:** Write and solve a system of equations by elimination:$$\{x+y=20 4x+2y=66 $$Possible Misconception: Students often see how to relate the number of wheels, but struggle with the first equation. | What do your variables represent?How many parking spaces do you have to work with? | Can you solve this system in more than one way?How can you incorporate the number of parking spaces in an equation? | **Student B** |  |