**Planning for Mathematical Discourse – Algebra II – Function of a Ride**

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| **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*
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| **Anticipated Student Response:** **Parts 1 - 4**Guess and check: Students can check by opening the graph in Desmos and trying different points.\*This strategy would still require some estimation of values. | What assumptions did you make about the function?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:** **Parts 1 - 4**Analyzing the given graph and estimating.Students would need to explain their process. | How did you decide what to draw?What’s going on in this situation? | How could you simplify your process?Can you explain what you did to a friend? | **A, B, C, D** |  |
| **Anticipated Student Response:** **Part 5**The verbal description of the ride does not really have multiple strategies although students will use a variety of language.Possible Misconception: Students might write their description only using the vertical distances rather than the horizontal distances. | 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? | **A, B, C, D** |  |
| **Anticipated Student Response:** **Parts 6 & 7**Matching the graph on Desmos. Students might use the general form of a parabola with values or sliders and just make adjustments until their graph is a close match and then use that equation to make a prediction.Possible Misconception: Students might have difficulty with the transformations of a quadratic function. | Explain how you came up with your equation.How did you know what changes to make to the equation? | Is this the only equation that would work?Are you happy with how your equation’s graph matches the original?Can you find a closer match to the graph? |  |  |
| **Anticipated Student Response:** Choosing points and performing a quadratic regression. Student could choose values for the points A, B, and C to perform the regression and then use the equation to make a prediction.Possible Misconception: Students might struggle with the value to use for the points. | How many points did you choose?How did you decide what values to use? | Is this the only equation that would work?Are you happy with how your equation’s graph matches the original?Can you find a closer match to the graph? | **A, C** |  |