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| MSPLesson Plan |
| **NAME: Adam Crabtree** |
| **SUBJECT/GRADE RANGE: Algebra 2** |
| **TOPIC: Rational Functions** |
| **List of appropriate standards that support the lesson.**   * [CCSS.Math.Content.HSF.IF.B.5](http://www.corestandards.org/Math/Content/HSF/IF/B/5/) Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*\* |
| **List of appropriate objectives that guide the lesson.**   * Students will be able to identify a rational functions and it’s appropriate domain and range in a real world context. * Students will be able to generate data algebraically to transfer to a visual representation of a relation (graphically). |
| **An equipment list in table format, stating the quantity and source for each item.**   |  |  |  | | --- | --- | --- | | Equipment | Quantity | Source | | PowerPoint Presentation | Need file for showing | See attached | | Graph Paper | Each student will need a piece with extras provided in case someone messes up. | Teacher provides or student brings to class | | Teacher Information Card | One | Teacher needs information that students will ask for such as the number of juniors and seniors in the building. Other information may be required depending on school. | | Blank Paper | Some at each table for jotting down ideas, showing work, and for putting the assessment on at the end of the lesson. | Teacher or students provides | |
| **List of safety requirements for your lesson. (when applicable)**   * No safety concerns for this lesson are anticipated. |

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| **A detailed plan of instruction including activities, timeline, and questions you plan to ask students.**   |  |  |  | | --- | --- | --- | | ***Engagement*** | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | |  | Prom Ticket Question Think Pair Share: Students will work on a think pair share on the second slide of the Powerpoint. They work on generating ideas on the information that they need to know in order to find the ideal price they need to charge for prom tickets. | What factors need to be taken in account before you can determine the price of prom tickets? | |  |  | |  |  | |  |  | | ***Exploration/Explanation*** | | | |  | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | |  | Prom Function Visual Representation: Students will create a visual of how the price per ticket can be influenced by the estimated number of attendees.  Classroom discussions throughout as needed with questions to the right.  Teacher will ask one group to share their visual with the class and discuss how they generated data to graph. | Represent the function with a visual image.  How can you generate data and organize it into a visual model?  How do we visualize data in our class?  Can you explain your thinking to the class? | | Teacher will explain through discussion how this functions represents a rational function. Class will also discuss what a reasonable domain and range of this function is. | Is this function a relation? How do you know?  What would a reasonable domain and range be for this function?  How do you decide what a reasonable domain and range would be? | |  |  | |  |  | | ***Elaboration*** | | | |  | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | |  | Students will explore a similar problem but with an added twist of an extra charge tacked on to the cost of each ticket. | How does this change/transform the function both graphically and algebraically?  How would this change the reasonable domain and range for this function? | |  |  | |  |  | |  |  | | ***Evaluation*** | | | | See below | | | |
| **Assessments. A copy (or description) of how you will assess whether the students have achieved your objectives along with a key showing how you will evaluate responses.**  Exit ticket is on the last slide of PowerPoint. It asks students to change the function in another profound way. Students will now have a different up front cost to take into account. |
| **Any visual aids and handouts that you will use.**  PowerPoint presentation with guiding questions. |