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| MSPLesson Plan |
| **NAME: Rachel Davis** |
| **SUBJECT/GRADE RANGE: 8th Grade Pre-Algebra** |
| **TOPIC: Comparing Lines and Linear Equations** |
| **List of appropriate standards that support the lesson.**   * 8.F.B.4 * 8.F.B.5 |
| **List of appropriate objectives that guide the lesson.**   * I can interpret the rate of change and initial value of a linear function in terms of the situation it models. * I can describe the functional relationship between two quantities by analyzing a graph. |
| **An equipment list in table format, stating the quantity and source for each item.**   |  |  |  | | --- | --- | --- | | Equipment | Quantity | Source | | Copies of graphs | For each student | http://map.mathshell.org/lessons.php?unit=8230&collection=8 | | Copies of “The Race” Pre/Post | For each student | http://map.mathshell.org/lessons.php?unit=8230&collection=8 | | Copies of collaborative activity card sets | For each group | http://map.mathshell.org/lessons.php?unit=8230&collection=8 | | Copy if PDF lesson | For teacher | http://map.mathshell.org/lessons.php?unit=8230&collection=8 | | Color pencils | For each student |  | | Observation Sheet | For Each Student | included | | Copies of “The Walk” | For each student | http://map.mathshell.org/lessons.php?unit=8230&collection=8 | |
| **List of safety requirements for your lesson. (when applicable)**   * none |

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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 | | Pre-test to be done day before  \_\_\_\_\_\_  10 min | Give students a copy of “The Race” pre-test | Analyze students’ responses for misunderstandings | |  | Make a short list of questions that will guide understanding while moving through the lesson | |  |  | | Show students a sand-filled timer/hour glass. Allow them to make observations as to what happens to the bottom portion as the top portion empties. |  | | ***Exploration*** | | | |  | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | | 60 min | Give each student six copies of blank containers (these can be on the same page to conserve paper) |  | | Each student should color each container to show the progression of the linear graph | Teacher may have to demonstrate what is expected by modeling a slightly different problem on the board before "exploration" begins. | | Upon finishing the coloring, give students 6 copies of blank graphs, with axis labels, and have students graph the bottom container as it fills. | Remind students to look at the graphs that were given to them to help guide them as to how to fill out the blank graphs. | | Once students finish, have students get into groups and discuss their observations. Observations should be recorded on observation sheet |  | |  | Give groups card matching collaborative activity. Students should match the containers with the graphs that represent the emptying/filling of the container. |  | |  | Students will record matchings |  | |  | Upon all groups finishing, groups will leave matches on their tables and rotate around the room to compare their answers to other groups. |  | |  | Upon returning to their tables, groups will discuss if they need to make any changes to their matches. |  | | ***Explanation*** | | | |  | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | | 20 min | Discuss results of matching collaborative activity |  | |  |  | |  |  | |  |  | | ***Elaboration*** | | | |  | | | | Timing | Activities | Planned Questions & Expected Answers/Misconceptions | | 20 min | Give students a copy of “The Walk” to apply their learning to a different real-world situation. | How is the matching activity related to the questions that are being asked on "The Walk" | |  |  | |  |  | |  |  | | ***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.**  Students will complete the Post-Test side of "The Race." Students will be assessed on their ability to correctly identify and explain all parts of the post-test. Crucial points to look for: using slope and the steepness of the line as part of their reasoning in answering the questions; writing equations in correct slope-intercept form; correctly graphing both Emma and Maggie's distance from the finish line. |
| **Any visual aids and handouts that you will use.**  Files and links are included. |