

Grade: 7

Unit: Data and Statistics – graphing

Lesson Title: Graphing Olympic Data

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| Subject Area(s)             |   | 7 <sup>th</sup> grade Math   |
| Time Needed                 |   | 2 one hour periods   |
| TN standard                 |   | <p><u>Math: 7.5.2</u> Construct, interpret, and use multiple-bar graphs, multiple-line graphs, and circle graphs displaying real-world data.</p> <p><u>Math: 7.5.3</u> Discuss and understand the relationship between data sets and their graphical representations (e.g., bar graphs, line graphs, circle graphs, histograms, stem-and-leaf plots, box plots, and scatterplots).</p> <p><u>Technology: 3.2</u> Students will use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.</p> |
| Learning objectives:        |   | Use the backdrop of the Chinese Olympics to teach students how to create basic bar graphs using Excel software.  |
| Prior Knowledge or Skills   |   | Students have had years of instructions on graphs and have specifically been reviewing graphs over the past week. We have been discussing the Olympics and the country of China since the start of the Olympics.   |
| Materials/Resources Needed: |   | A computer for each student; LCD project and computer for teacher.   |
| Preparation                 |   | Prepare file with data for students to use in creating their graphs; load the file onto each computer.   |
| <b>Procedures</b>           | Attention-getter/Assess prior knowledge | Display a double-line graph with women and men’s scores in the finals for BMX racing in the 2008 Chinese Olympics. Expect students to draw the conclusion that the men were faster because the line for the men is generally higher. Then lead them into the realization that the women were actually faster because their times were less (the line is lower) than the men’s.<br>Sometimes – LESS IS ACTUALLY MORE!   |
|                             | Direct Instruction                      | <ol style="list-style-type: none"> <li>1) Highlight base vocabulary: horizontal and vertical axes; scale; title; plot</li> <li>2) Connect to previous examples of the week.</li> <li>3) Model how to take data and make a simple bar graph. Microsoft Excel.</li> </ol>  |
|                             | Guided Practice                         | Walk the students step-by-step on how to make their own graph – I will use the LCD projection to show students what to do and then they will do the same on their own computer.  |

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|   | Independent Practice  | Students will use separate data on the men's final in swimming to create their own graph. There will be a rubric projected on the LCD projector that will allow students to check their work before having the teacher review their work. |
| Assessment:                                       | Completed graph from independent practice and informal data from guided practice that will help direct reteaching, peer tutoring, and the pace of the lesson.   |   |
| Resources/Credits:                                | Data in the graphs taken from the following website:<br><a href="http://results.beijing2008.cn/WRM/ENG/Schedule/index.shtml">http://results.beijing2008.cn/WRM/ENG/Schedule/index.shtml</a>   |   |
| Differentiation/<br>Accommodations/<br>Extensions | <p>Extensions: Students who finish early will be able to experiment with changing the fonts, colors, and backgrounds of the graphs.</p> <p>I have also prepared additional graphs to use for students drawing conclusions from double-bar graphs and line graphs. We will also be able to switch graph type easily to decide as a group what type of graph is best for different purposes. Finally we can change scale several times and instantly see which is better and for what reason.</p> <p>Peer-tutoring and one-on-one reteach/scaffolding will be the main strategies for accommodating students who may not have the same level of technology literacy as the majority of the class. I will also allow additional time for completion.</p> |   |