

Teacher: L. White		Subject: Math		Time Frame: 2 Weeks (initial introduction)	
Grade: K 1 2 3 4 5 6 7 8 9 10 11 12			Period: Self contained		
GLE #(s): 42, 43		Unit 1 – Graphs, Probability, and Patterns		LCC Activity #:N/A Substitute Activity? Y	
Objective(s)		TLW represent and solve problems using data from a variety of sources (e.g., tables, graphs, maps, advertisements) (D-3-E); TLW match a data set to a graph, table, or chart, and vice versa (D-2-E)			
Materials		Graph paper, smart board, computers, graphing task cards, colored pencils, counters, dice, game boards, snack size skittles (enough for paired assignment), survey slips, 2 Gallon sized Ziploc bag (survey bag)			
Assessment		TLW collect data and successfully create a graph with the data (electronic or paper based). TLW complete peer created assessment on Friday. TLW successfully save electronically created graphs to designated folder. TLW successfully insert graphs into Microsoft Word. TL is able to match graphs with corresponding data. TLW answer/ask at least 3 questions on the class graph of the day in the correct format.			
Higher Order Thinking Questions		Create a list of possible survey topics. Match the graphs with the correct data. Construct a graph to illustrate the given information. Determine the appropriate title for the given graph. Why would it be necessary to display information in a graph? Make a riddle that describes your graph. Keep Guiding Questions in mind throughout lesson (See Curriculum Project Document).			
Home Learning		<p style="text-align: center;">Week One</p> <p>Monday-TLW survey family members by creating a tally chart for their favorite sodas. Tuesday-TLW use graph paper to make a bar graph of the data collected on Monday. Wednesday-TLW generate 5 questions for their graph. Thursday- TLW answer the questions from their partner’s graphing log.</p> <p style="text-align: center;">Week Two</p> <p>Monday- TLW match data given to appropriate graph (worksheet). TLW also write down start and end time. Tuesday- TLW use the homework data (Time it took D5 to complete hwk) to create horizontal bar graphs and generate 5 questions. Wednesday-TLW exchange graphing logs with partner and answer their partners questions from Tuesday. Thursday- Test Practice – TLW show the graphing strategies utilized in class to solve graphing questions.</p>			
Whole Group		Content (What are you teaching?)		Process (How are you going to teach it?)	
Introduction, Set or Hook		Analyzing Charts/Graphs		TTW Display a bag of Miniature Hershey Candy Bars. TTW allow each student to select their favorite type of candy. TTW collect this data by making a tally chart and use this to introduce the purpose and benefits for graphing.	
Modeling (I DO)		Analyzing Charts/Graphs		<p style="text-align: center;">Week One</p> <p>Day 1- TTW Model how to construct a bar graph TTW ask the students to look at the tally chart and explain that there are many ways to display information or data. TTW model construction of a bar graph on grid paper while discussing important vocabulary (scale, title, labels, intervals, etc.) TTW Model Procedure for collecting data (homework assignment). Day 2-4 - TTW model data entry procedure for creating a vertical bar graph using http://nces.ed.gov/nceskids/createagraph/ TTW model how to navigate through the Design, Data, Labels, Preview, and Print/Save tabs. Discuss Vocabulary(x-axis, y-axis, title, vertical/horizontal graphs, source, items, data set) TTW model how to differentiate the color schemes and labels for each graph. Under the Design tab, make sure that the learners indicate no legend for the bar graphs and discuss the purpose (will revisit when we study pie graphs). For Labels make sure the students click no for show label so that the numerical value for each data set is not already given to the students.</p>	

TTW model how to save graphs to specific folders and how to retrieve and attach them to a word document.

Once the graph is created, TTW facilitate discussion and ask for student observations from the graph.

TTW model how to save a graph as clip art and assign it to a particular folder.

TTW model Math Wiz procedure- Open a Microsoft Word Blank Document. The title will be the days date. Next, insert the graph created on <http://nces.ed.gov/nceskids/createagraph/>. Then ask one question related to this bar graph. TTW think aloud questioning process.

TTW then explain that the next student will answer the Math Wiz's question. The next student will analyze the data and ask their own question, while the student that follows them will ask a question.

TTW model strategy for analyzing bar graphs while using Study Jams program.

The class will collect data daily and discuss the survey/polling process in their community (school and home).

Day 2-4 Modeling Procedures listed above will be done daily after gathering new data.

Day 4 –TTW review/model surveying process and discuss procedures and expectations of data brought into the room from learning community surveys. TTW review the Math wiz process whole group and model the process for going to the Math Wiz computer in order to give their input on the day's graph while emphasizing the importance of marking off their names after they've contributed.

Day 5 – TTW discuss expectations for assessment procedures. TTW introduce students to the survey bag and allow each student to pull a survey slip from the bag. TTW facilitate the discussion of dos and don'ts when surveying others.

Week Two

TTW review student surveys from the weekend. TLW place these surveys into their Workstation Folders in the Math pocket. TLW use these surveys to create their graphs for the Graph of the Day process. TTW use equalization sticks to determine the name of the Math Wiz for the day. TTW Model/review Graph of the Day process. TTW introduce students to horizontal bar graphs and model the difference between designating the correct graph when creating a graph on <http://nces.ed.gov/nceskids/createagraph/>

The procedures will be the same, however, we will check for understanding and TTW model expectations throughout this unit as the teacher checks for understanding and reviews the students' entries.

Analyzing Charts/Graphs

Week One

Guided Practice (WE DO)

Day 1- TT&SW discuss how to correctly draw a bar graph while viewing ppt.

TT&SW will create a tally chart from Candy Bar data collected whole group. TTW monitor students and facilitate discussion as they assist with creation of the class bar graph while offering appropriate questioning and checking for understanding.

TT&SW discuss purposes for collecting data or other possible surveys

they could take while a student acts as a scribe.
TT & SW Practice using mathematical vocabulary and exposing themselves to the problem solving processes and questioning format as they view and interact with <http://studyjams.scholastic.com/studyjams/jams/math/data-analysis/bar-graphs.htm> website.

TLW take turns using equalization sticks assisting with "Test Yourself" portion of the interactive site.

Day 2- TTW guide the students through the Graph of the Day process. TLW work in pairs and each pair will receive a snack sized bag of skittles. TLW use the colors of candy found in their candy bags to make a tally chart. TLW use this data to create their own personal bar graphs on grid paper (each partner will create their own graph for assessment purposes)

Day 3 – TTW display the graphs and data generated from Monday and Tuesday's homework around the room separately. Each graph will be labeled with a letter and each tally chart will be labeled with a number. TLW attempt to match each graph with the correct data while working within their table groups. TTW guide the students through the Math Wiz process. TTW review process for inserting a picture into Microsoft Word as well as facilitate the discussion on dos and don'ts for working with partners.

Day 4 - TTW allow the first Math Wiz to use the data from their graphing log (homework) to generate a graph on <http://nces.ed.gov/nceskids/createagraph/>. TTW monitor the rotation to and from this computer very carefully to make sure that proper steps are taken.

Day 5 - TTW introduce students to the survey bag and allow each student to pull a survey slip from the bag. TSW put their names on the top of their survey slip and list the steps that they will take to survey others and how they plan to display the data on the back of their slips. Survey topics: **What kind of pizza do you like? What is your favorite meal? What is your favorite dessert? What would you rather do on weekends? What pets do you have at home? How do you get to school?**

Week Two

Use <http://www.primaryresources.co.uk/maths/mathsF1.htm> to review procedures when analyzing a graph.

The class will walk the Math Wiz through the Graph of the Day process.

TT&SW use the Graph of the Day PPT to review process for the Graph of The Day. TTW direct students' attention to aspects of the project that students seem to have difficulty with during this time. This ppt. will be saved in an accessible folder for the Math Wiz to reference if he or she has a problem during center time. This PPT will be located in a folder beside the Math Wiz computer as well for easy access.

When their name is chosen TLW complete the Graph of the Day process (if questions arise, TLW "ask three before asking me" by soliciting assistance from 3 peers quietly before asking me for help because during this time I will be working with other students)

The Math Wiz/Graph of the Day computer will be the computer that is connected to the projector, this way it is easier for everyone to monitor

		<i>this process and assist when needed.</i>
Independent Practice (YOU DO)	Analyzing Charts/Graphs	<p style="text-align: center;">Week One</p> <p>Day 1-2 -TLW practice analyzing charts and graphs while using game boards and graphing task cards. TLW practice manipulating vertical bars on a bar graph to match the given data using http://www.quizville.com/usingBarGraphs.php TLW complete and discuss (textbook, workbook, or handout) graphing assignment. TLW add to their journals possible surveys they could take to use a bar graph to illustrate. TLW (Teacher group) use graphing write and wipe game cards to review graphing and data analysis process.</p> <p>Day 2-TLW work in pairs and explore http://nces.ed.gov/nceskids/createagraph/ website to create their own graphs and save them to the designated folder at both students' first names. TTW monitor students during this process. When this portion of the process is completed, TLW complete Rally Coach Graphing activity (TLW be instructed to only use the taught strategy to analyze the two graphs and circle/underline the important words or operation indicators in each question). If time permits, TLW use graphing task cards and game boards to analyze graphs and answer related questions.</p> <p>Day 3- TLW retrieve the chart that they created yesterday and insert it into a Microsoft Word Document. TLW come up with 5 questions that can be answered from looking at their graph underneath their graphs. TLW work in pairs to complete Rally Coach Graphing activity they began yesterday with partner.</p> <p>Day 4 – TLW complete their first Graph of the day during center time. As the students rotate to the computer center, they take turns going to the Math Wiz computer as well (The Microsoft Word document with the graph of the day will remain up the entire time. The students rotate to the computer center anyway, but will not go to the Math Wiz computer until it's their turn to contribute to the graph of the day. As they contribute, they'll draw a line using a Vis-à-vis marker through their name so the class is aware who's participated as they rotate through the center). TLW Complete handout within their small group this process (Work Station 1). TLW play a graphing board game (Workstation 2). TLW use button bags to create tally charts/matching bar graphs.</p> <p>Day 5 – TLW complete quiz (Skittles graph with questions created by the students on Day 3 and 4). The learners will not receive the graphs and questions that they created. When they finish, TLW complete their Fast Math program or Flash Masters independently. TLW begin surveying classmates for their community surveys when all students have finished their assessments (brief period of time remaining before transition).</p> <p style="text-align: center;">Week Two</p> <p style="text-align: center;">This process will be ongoing and will remain a Work Station throughout the semester. The students will be required to transition to the computer center for Fast Math and the designated program to strengthen the students' understanding of the weekly skill, and while their group is at this center, they will take turns giving their input on</p>

		<p>the Graph of the Day.</p> <p>Other Sites to be used at the Computer Workstation during this Unit:</p> <p>Creating a Tally Chart for data given: http://www.bbc.co.uk/education/mathsfile/shockwave/games/datapick.html</p> <p>Answering questions from a given graph: http://www.scienceacademy.com/BI/</p> <p>Interactive game creating graph, then answer related questions while multiple graphs are displayed: http://pbskids.org/cyberchase/games/bargraphs/bargraphs.html</p> <p>Multiple Choice Bar Graph: http://www.softschools.com/math/data_analysis/bar_graph/activities/favourite_colors_bar_chart/</p> <p>Struggling Learners- Making Charts and graphs based on given data: http://www.brainpopjr.com/math/data/tallychartsandbargraphs/picturemaker/</p>
<p>Closure (Checking for Understanding)</p>	<p>Analyzing Charts/Graphs</p>	<p>The class will check for understanding by reviewing the students' entries. TTW facilitate the discussion of the class entries and the students will signal thumbs up or thumbs down if they agree.</p>