

UNIT OF STUDY #9 Graphing & Probability

Title: Graphing & Probability		Subject/Course: Math	Length: 1 wk.
Topic: Graphing		Grade: 4	Designer: Carrie Holt Tammie Nelson Shaundra Flanery
UNIT GOALS AND EXPECTATIONS			
IMPORTANT CONCEPTS: <ul style="list-style-type: none"> Information can be shown in graphs. Certain types of graphs are more appropriate than others based upon the type of data presented. When surveys are conducted, choices should be given. The outcomes of probability experiments can be recorded in graphs. 		ESSENTIAL QUESTIONS: <ul style="list-style-type: none"> How can information be gathered, recorded, and organized? How does the type of data influence the type of display? What aspects of a graph help people understand and interpret the data easily? What kinds of questions can and cannot be answered by a graph? How is the probability of an event determined and described? 	
STUDENT LEARNING EXPECTATIONS: <ul style="list-style-type: none"> DAP.14.4.1a Create a data collection plan after being given a topic and collect, organize, display, describe, and interpret simple data using frequency tables DAP.14.4.1c Create a data collection plan after being given a topic and collect, organize, display, describe and interpret simple data using pictographs and bar graphs DAP.15.4.1a Represent and interpret data using pictographs in which symbols or intervals are greater than one. DAP.15.4.1b Represent and interpret data using bar graphs in which symbols or intervals are greater than one DAP.15.4.1c Represent and interpret data using line graphs in which symbols or intervals are greater than one 		<ul style="list-style-type: none"> DAP.15.4.2 Match a set of data with graphical representation of the data DAP.16.4.1 Make predictions for a given set of data DAP.17.4.3 Find all possible combinations of 2 or 3 sets of objects DAP.14.4.1b Create a data collection plan after being given a topic and collect, organize, display, describe and interpret simple data using line plots. DAP.17.4.1 Use fractions to predict probability of an event. DAP.17.4.2 Conduct simple probability experiments, record the data and draw conclusions about the likelihood of possible outcome. 	
SPECIFIC DECLARATIVE KNOWLEDGE – What I know <ul style="list-style-type: none"> Vocabulary Terms: graph, double-bar graph, line graph, circle graph, experiment, outcome, event, predict, likely, unlikely, equally likely, mathematical probability, and tree diagram Understand why graphs are useful at displaying information. Recognize that choices limit responses in surveys. Understand the uses for each type of graph (bar graph, line plot, pictograph, frequency table etc..) 		SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do <ul style="list-style-type: none"> Create questions for survey. Conduct the survey. Create pictographs, bar graphs, line plots, frequency tables from provided data. Conduct probability experiments using various manipulatives. Graph results from the probability experiments in the most appropriate graph display. Use data from experiments to determine outcomes Show probability using fractions 	

<ul style="list-style-type: none"> Understand the difference between mathematical probability and experimental probability 	<ul style="list-style-type: none"> Make combinations using a given set of items
UNIT ASSESSMENTS (Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)	
Open Response: Neighborhood Trees (Practice Benchmark) (Application) Constructed graphs. (Synthesis) Probability graphic organizer. (Synthesis and Analyze)	
Traditional Assessments: TLI Quiz, Vocabulary Quiz, Homework, Class work, Test	Other Evidence of Learning:

ACTIVITIES AND LEARNING EXPERIENCES	Resources
<ul style="list-style-type: none"> Daily prior knowledge will be assessed by using one of the following: KWL charts, brainstorming, anticipation guides, admit slips, think-pair-share and problems of the day. Students will need to find out their birth weight before reading <u>Wilma Unlimited</u>. The birth weights will be listed on chart paper. After reading add Wilma's birth weight to the board. Remind the class that Wilma's birth weight was just over four pounds ask, "How many ounces over four pounds must she have weighed?" Discuss. Pairs: Have students sort the weights based on their own criteria. Students will graph birth weights based on their groups. Teacher will question students about the type's graphs chosen. A small group will be assigned daily to read <u>Tiger Math: Learning to Graph from a Baby Tiger</u>. Mega Math Archnagraph Games Teacher demonstration on taking a survey then have students create a survey question with three to five choices. They will then ask 20 people their survey question. They will graph their results in an appropriate graph. Introduce Probability: Read <u>Bad Luck Brad</u> Small Groups: After reading Bad Luck Brad have the students find the times during the day that Brad's luck is bad...when Brad's luck is good. Is there a good event in this story that is not due to good luck? Use the chart on page 32 to talk about these terms: probability, good chance, and more likely. What is the probability that a girl will win the art contest? Is 3 chances out 5 better than 2 chances out of 5? Students will be given a bag containing 2 separate colors of pop cubes. Have the child predict the color each time before pulling out one piece. If the prediction is correct, the child gets to keep the piece. Counting how many of each color are left in the bag is definitely allowed. Small Groups: Probability graphic organizer using dice. Compare the mathematical probability to the experimental probability. Pairs: Students will determine the possible outcomes of tossing a coin and counter. They will graph their possible outcomes then they will conduct the experiment eight times. They will graph their results and compare their mathematical probability to their experimental probability. 	<p>Krull, Kathleen</p> <p>Nagda, Ann, Bickel, Cindy</p> <p>Harcourt</p> <p>Herman, Gail</p> <p>Herman, Gail</p> <p><u>Dice Works</u> by Currah and Felling</p>

Career Connections	
Political Scientist, Marketing Consultant	