

Math and Technology

Unit of Practice

Title: **Real World Bar Graphing**
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Subject: Math -- Data Analysis
Learning Level: Grade 3

This lesson was posted on the Apple Learning Interchange, UOP #1589 (<http://ali.apple.com>)

SNAPSHOT: *What is a summary of this lesson/project?*

ClarisWorks for Kids is used to create graphs, which integrate data analysis and probability in the context of technology use. Students gather, graph and analyze real world data.

INVITATION: *What are the questions students will answer?*

How can you collect data through a survey?

How do graphs help people analyze data?

SITUATIONS: *Where will it take place?*

Students will gather the data in the classroom or on school grounds as instructed.

TASKS: *What actions will the students perform?*

Students will propose a survey question, which will need to receive teacher approval. The survey question should contain at least 5 different categories. Students will then complete the survey gathering data from at least 40 students. After the data is compiled students will create a rough draft of the data using graph paper. They write 5 questions that might be answered through analysis of the data. Once this is completed the students will use ClarisWorks for Kids to create their finished graph. Their final product will include the graph, the questions regarding data analysis, and a short description of the project that includes answers to who, what, why, when, where and how.

INTERACTIONS: *How do students interact with others?*

The concepts of graphing and data analysis should be introduced to students by the instructor. Students can work individually or in pairs and children can practice interviewing each other in the classroom.

STANDARDS: *Which standards are addressed in this lesson?*

Mathematics

2M Data Analysis and Probability

- 2M-F1 Collect and analyze data using the concepts of largest, smallest, most often, less often and middle.
- 2M-F2 Construct, read and interpret displays of data to make valid decisions, inferences and predictions
- 2M-F3 Predict and measure the likelihood of events and recognize that the results of an experiment may not match the predicted outcomes (Note: Probability experiments are simple one step activities, e.g. tossing a two colored counter)
- 2M-F4 Understand the concept of sample (i.e., that a larger sample of observed outcomes leads to more reliable information)

Language Arts

Writing

- a. Applies the writing process.
- b. Applies spelling techniques.
- e. Applies punctuation.
- f. Applies capitalization.
- g. Applies grammar.
- h. Gathers, organizes and accurately, clearly and sequentially reports information gained from personal observations and experiences such as science experiments, field trips and classroom visitors.

Speaking

- a. Uses appropriate public speaking skills.
- b. Applies appropriate public speaking skills.

Technology

1T Technology Skills

- a. Use keyboards and other common input devices (including adaptive devices when necessary) efficiently and effectively.
- b. Use touch typing techniques to input information on the keyboard.

2T Technology Applications

- a. Create documents using word processing skills and writing process steps.
- b. Use publishing programs and simple computer graphics to produce documents.

ASSESSMENT: *How will you evaluate student learning?*

A rubric will be used to evaluate student achievement and understanding.

TOOLS: *What materials will the students need?*

Paper, pencil, graph paper, colored pencils, *AppleWorks*, Computer Lab Access

RESOURCES: *What else could you utilize in planning or expanding this lesson?*

Extension/Adaptation--Older students can create their surveys and graphs using *AppleWorks*. Using *AppleWorks* spreadsheets to create the graphs would allow for greater exploration. Students should be encouraged to change the graph format, axes, scales etc. and note the effects on data presentation and interpretation. This activity could culminate in poster presentations or could be organized into multimedia presentations.