

## Subject #7: Math

**Project #73: Graph a Class Survey in Excel.** Collect data on a class unit and turn these dry numbers into colorful, informative graphs. Show younger students how to use F11 to create a simple chart and olders how to format the titles, legend, background and more.

| Higher-order thinking skills                  | Technology-specific:                          | Subject Area/ Learning-specific              | Standard: NETS-S |
|---|---|--|------------------|
| <i>Compare and discriminate between ideas</i> | <i>Creating Excel charts, formatting data</i> | <i>Math, understanding graphs and charts</i> | <i>3.a, 4.a</i>  |

Grade level: 3-6

Prior knowledge: Project 72: *Check your Math Homework in Excel*

Time required: 45 minutes

Software required: Excel

Vocabulary: data, cell, column, row, chart, graph, tab, recolor, paint bucket, dialogue box, x axis, y axis, z axis, labels, print preview, landscape, portrait

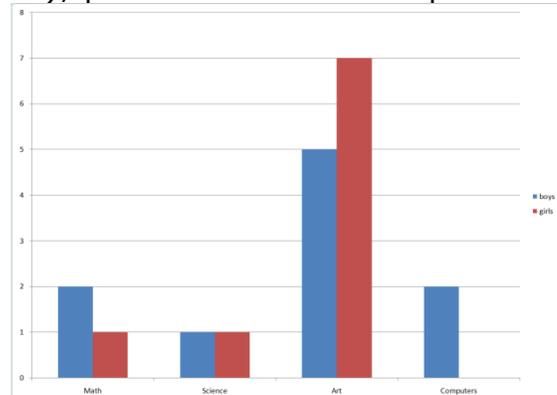
### Lesson Description

- Excel is a spreadsheet program used to record and display data in the form of graphs, charts, tables. Students can use it to average grades, track projects with multiple parts, and draw conclusions about classroom data.
- Students formulate questions, collect data to pursue the answer, and represent their results as a sophisticated diagram. In this way, they explore real-world challenges while developing essential graphing and math skills.

### Computer Activity

- If students have started an Excel project already this year, have them open it. If not, open a new workbook. With Excel's tab feature, it's easy to keep all work together.
- Review Excel basics—rows, columns, cells, naming features, ribbons, tabs.
- Double click an empty tab at the bottom Subject **Survey Data**, (maybe 'Sheet 1'); rename it 'Survey Data'.
- A1: type 'How Do I Learn' (or a title that fits the class topic), font 36.
- A2: Add student name.

- A3: Use keyboard shortcut to add date (Ctrl+;)
- Add column and row labels (see samples on next pages) appropriate for topic.
- Survey class to collect data. Have students input it as they collect it.
- Highlight data and row/column headings (in my sample, it's A4 to C8); push F11 to create simple chart.



- The chart appears in a new tab. Double-click that tab and call it 'Survey Graph'
- Notice the graph has no title or axis labels clarifying its purpose. Select

- 'Chart Tools' (at top), 'layout', 'chart title' and add a title to the top.
- Select 'Axis Titles' from ribbon. Explain to students what the X and Y axes are. Explain a Z axis, too.
- X axis: Pick a label that explains the subjects. Are they self-taught subjects, easy ones, favorites?
- Y Axis: Discuss it also. Choose a label that describes the numbers.
- Adjust Chart Layout and Styles to taste.
- Right click chart to bring up 'Format Plot Area' dialogue. You can choose a texture, pattern, picture. Be sure it doesn't interfere with the viewer's ability to understand the data.
- Change orientation to 'landscape'.



- Before printing, select 'Print Preview', Make sure everything is on one page.
- Print without help; save to student network folder

#### Extensions

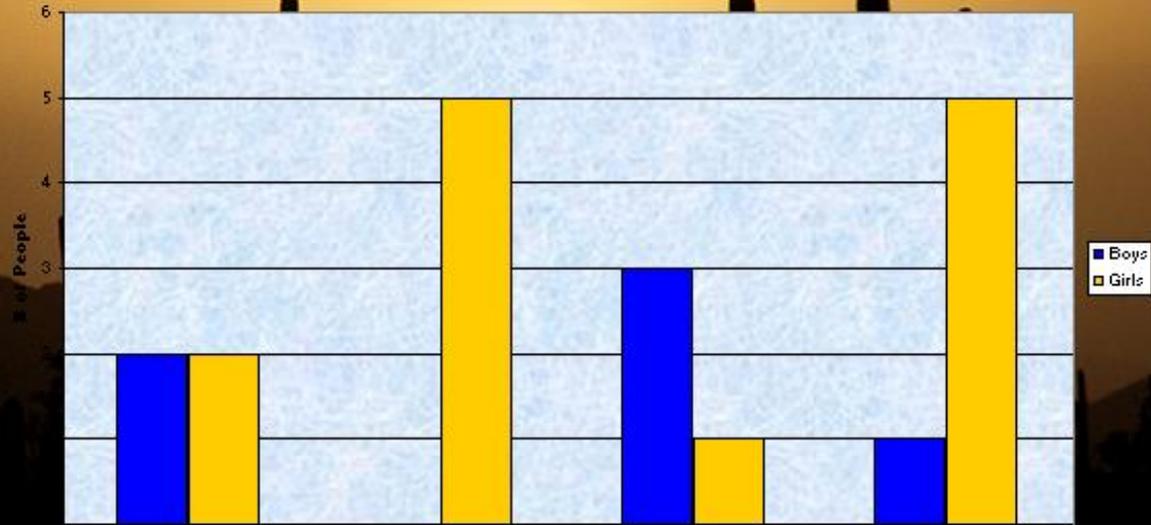
- Right-click on 'Survey' tab; pick 'Tab color' and recolor.
- Highlight A1 to C1; merge-center, fill with paint bucket .
- Right-click graph and select 'Chart Type'. Try several different types and select one you like.
- Add the time in B3 with keyboard shortcut Ctrl+:

#### Troubleshooting Tips

- *I pushed F11 and made the graph, but my data disappeared. (Find the tab at the bottom named 'Chart' and click on it. There's your data.)*
- *I can't read my labels. Did they disappear? (You probably picked a fill color too close to the font color. Select the cell and change the font color using the font color tool )*

|    | A                  | B    | C     | D | E | F   | G | H | I | J |
|----|--------------------|------|-------|---|---|---|---|---|---|---|
| 1  | HOW DO I LEARN     |      |       |   |   |   |   |   |   |   |
| 2  | your name          |      |       |   |   | <b>Instructions:</b>  |   |   |   |   |
| 3  | 1/13/2009          |      |       |   |   | double click 'sheet 3' tab and rename 'survey data'           |   |   |   |   |
| 4  |                    | Boys | Girls |   |   | rt click on 'survey data' tab and recolor                     |   |   |   |   |
| 5  | Reading            |      |       |   |   | A1--input title (caps lock, font size 12)                     |   |   |   |   |
| 6  | Writing            |      |       |   |   | A2--input your name (rest of spreadsheet in font size 10)     |   |   |   |   |
| 7  | Listening          |      |       |   |   | A3--date (Ctrl+)  |   |   |   |   |
| 8  | Talking            |      |       |   |   | B3/B4, input 'boys', 'girls'                                  |   |   |   |   |
| 9  |                    |      |       |   |   | A4-A8--input subjects   |   |   |   |   |
| 10 |                    |      |       |   |   | survey class to collect data                                  |   |   |   |   |
| 11 |                    |      |       |   |   | highlight from a1 to c1, merge-center; fill with paint bucket |   |   |   |   |
| 12 |                    |      |       |   |   | highlight from A4-c8; f11                                     |   |   |   |   |
| 13 | WHEN I DO HOMEWORK |      |       |   |   |   |   |   |   |   |
| 14 |                    | Boys | Girls |   |   | format chart  |   |   |   |   |
| 15 | Do early           |      |       |   |   | add title, x and y labels                                     |   |   |   |   |
| 16 | Do on time         |      |       |   |   | add backgrounds   |   |   |   |   |
| 17 | Do late            |      |       |   |   | print preview--set-up--change to landscape, size to 175%      |   |   |   |   |
| 18 | Don't do           |      |       |   |   | Print page 1 only   |   |   |   |   |

## HOW DO I LEARN by Me



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## STUDENT FAVORITE SUBJECTS by Me

