

## JMP INTRO® Lab Activities

### Lab Activity – Finding Data on the Web

In this lab you will use a computer program called JMP INTRO, a statistics program that will help us do statistics. You will also learn how to get data off the worldwide web and do some graphic analysis with JMP INTRO. You will create a word processing document for your report. In your report you'll have tables and graphs from JMP INTRO, along with your commentary and interpretation.

First you need to learn how to get data. Start your computer and open JMP INTRO. Click on the **New Data Table** button in the JMP Starter to open a new Data table. **Minimize** the JMP INTRO window by clicking the Minimize button located in the upper right corner of the screen (it looks like an underline).

You also need to open your web browser. The data set you are going to use is from DASL, the Data and Story Library. To find it, go to <http://lib.stat.cmu.edu/DASL/>. From the main menu, scroll down until you see seven buttons. Click on **List all topics**. Then select **Education® Students' Goals Story**. Read the story that describes the data set you will be using. Click on the datafile name, **Popular Kids**, to open the data. The data is from surveys of 478 students in grades 4-6 from Michigan. Eleven variables were Used. Write them down so you can label your data columns with the appropriate titles after you import the data.


Highlight only the data values on the **Data** section of the datafile (don't highlight the headings). To select data, click on the first item and drag to the final item to select contiguous items. Alternately, you can click on the first item, hold down the shift button, and click on the final item. CONTROL click (COMMAND-click on the Macintosh) to select discontinuous rows or columns. After you have all the data selected, copy it. You can use either **Ctrl-C** (Option-C on the Macintosh) or the **Copy** command from the Edit menu. **Maximize** the JMP INTRO window and **Paste** the data into the Data table (you can use **Ctrl-V** in Windows, Option-V on the Mac or **Paste** from the Edit menu).

You should now have copied all of the data into JMP INTRO. To make the data table easier to use, you'll want to make a few modifications. First, resize the data table window by using the **resize** button, which is the middle button in the upper right-hand corner of the screen. The data table should now almost fill the screen. Next, rename the columns using the variable names you wrote down earlier. Double-click on the name Column 1 in the column title box. If you double-click quickly, a dialog box will appear that will allow you to change the name of column 1 to Gender. (If you double-click slowly, the name should become highlighted which will also allow you to change the name.) Change the names of all eleven columns to the appropriate variable names from the story. Notice that the last four columns give a numerical rank of the variable listed (1=most important, 4=least important).

It would also be helpful to have all the columns visible on the screen. You can resize the columns by placing your cursor over the column line. When it changes into a double-sided arrow ( $\leftrightarrow$ ), you can change the width of the column by dragging the column line. Resize all 11 columns so that all 11 variables can be seen at one time.

If you remember from reading the story that went with this data, it included a Pie chart of responses to the question "What would you most like to do at school?" To make your own charts, you will use the **Chart** option in the **Graph** menu. Open it now. A dialogue box will appear. Click on **Goals** from **Select columns**. Click the **Statistics** button. Select **% of total** from the Statistics pop-up menu. Click on **X,Level**. The variable name Goals should appear in the adjacent white box, indicating it has been selected. Click **OK**. A Chart window will appear showing a bar graph of the percentage of student subjects who said their goal was grades, popularity or sports.

If you click on the red triangle next to the title Chart, a pop-up menu will appear that will allow you to alter the display. You can change the direction of the bar graph between horizontal and vertical. You can choose to display a pie graph instead of a bar graph.

To print all of these out in a report format, you need to open a word processing program. Put an appropriate heading on your report. A good title might be "Students' Goals". Go back to the JMP INTRO Chart window. If necessary, change the displayed chart to a vertical bar graph. Use the **selection** button ( in Windows or dashed rectangle on the Mac) to highlight (select) your graph and the variable key. **Copy** these. Go to your word processing window and **Paste** the graphs into your report. Add a title – Vertical Bar Graph of Goals.

Go back to the Chart window in JMP INTRO and change the graph to a pie graph. Copy and paste it into your report. Add a title to this graph. Describe what these graphs show you about the goals of the student subjects. Which graph do you prefer? Why?

Using an appropriate display, make a graph and display of Grade, Age or Urban/Rural. Describe the important features of your graph.

Print a copy of your lab report. Proofread your copy, make any needed changes, close JMP INTRO and the word processing program, and log off.

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### Teacher Notes

#### Lab Activity – Finding Data on the Web

##### Objectives:

- Gain familiarity with some of the basic operational tools of JMP INTRO.
- Learn how to download data of the Internet into JMP INTRO.
- Create a word processing document, incorporating graphs from JMP INTRO.
- Resize and label columns in JMP INTRO.

Time Required: 30 minutes

##### Materials:

- Finding Data on the Web student activity directions
- Internet access

##### Prerequisites:

- Students should have basic knowledge of how to use a word processing program.
- Students should be familiar with the school's login procedure.
- Students should know how to access the Internet from the school's computers.
- This activity can be done almost anywhere within the AP Statistics curriculum as it requires little or no experience using JMP INTRO and little or no statistical knowledge. Its major objective is to learn how to download data.

##### JMP INTRO Notes:

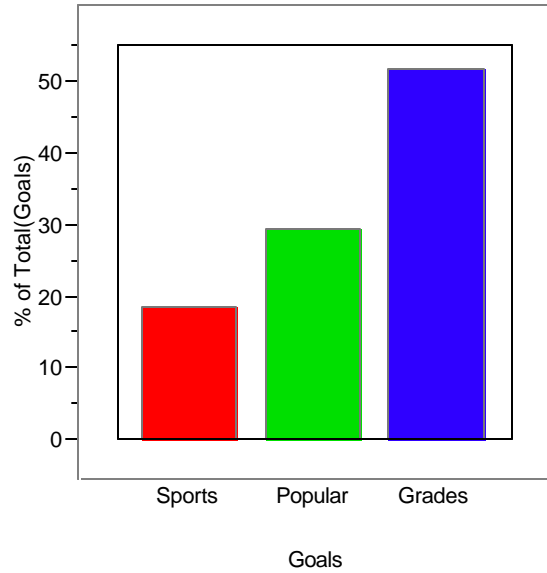
- DASL (pronounced "dazzle") is an online library of datafiles and stories that illustrate the use of basic statistics methods. Datafiles are indexed both by the subject of the data and the appropriate statistical method to use to analyze the data.
- An alternative to using the internal text editor in JMP INTRO is to use either Notepad in Windows or SimpleText on the Mac. It works essentially the same way, copying the data first to the text editor and then into a JMP INTRO data table.

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## Answer Key

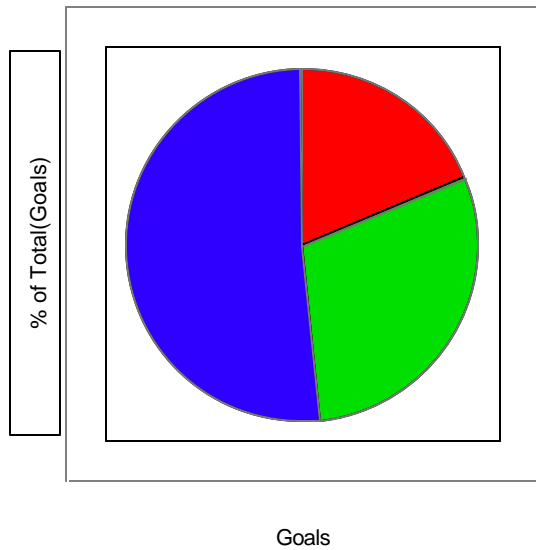
Suggested answers for Lab Activity – Finding Data on the Web

Vertical Bar Graph of Goals



Goals ■ Sports ■ Popular ■ Grades

Pie Graph of Goals



Goals ■ Sports ■ Popular ■ Grades

