

Lesson | 3

Spreadsheets

World History

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U.S. History

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Activity | 1

An African Climate

World History Practice Activity

Technology Overview Would you rather pore over row after row of numbers, or see information organized into a colorful graph? Most people would prefer a visual representation of data when they just need basic information. Technology makes it easy to communicate complex data in a way that is easy to understand. For example, spreadsheet programs, which can calculate huge amounts of data, have features that allow you to display numerical data as graphs, charts, and tables. In this activity, you will use a spreadsheet program to create a graph.

Content Overview In much of North America, people are accustomed to a regular change of seasons, with summer occurring in June, July, and August, followed by autumn, winter, and spring. But in the Southern Hemisphere, the seasons are reversed. In this activity, you will study the climate of a specific region in the Southern Hemisphere, the area around Kimberley, South Africa. You will create a chart and a graph showing the average monthly rainfall amounts there.

TERMS

Chart A graphic that allows you to compare and contrast data in a visual format.

Data series For most charts, a data series is the information in a worksheet column. If you select multiple columns of data for a chart, you'll create multiple data series. Each data series is then represented by its own color bar, line, or column.

Embedded chart A chart placed as an object within a worksheet.

Fill handle Dragging this handle, located in the lower-right corner of the active cell, will copy cell contents, formatting, or a formula to adjacent cells.

Font A complete set of characters in a specific face, style, and size.

Font size The height of an uppercase letter in a font set.

Font style The slant and weight of characters in a font set.

Landscape orientation Rotating worksheet data so it displays and prints horizontally across the longer side of a page.

Legend A key that identifies each of the data series in a chart.

Merge To combine selected cells into a single cell.

Number format A format that controls how numerical data is displayed, including the use of commas, dollar signs (or other symbols), and the number of decimal places.

Plot To position data points on a graph.

Portrait orientation The default position for displaying and printing data horizontally across the shorter side of a page.

Range Two or more cells in a worksheet. The cells may be adjacent or nonadjacent.

Series A list of sequential numbers, dates, times, or text.

X-axis The horizontal scale of a chart on which categories are plotted.

Y-axis The vertical scale of a chart on which the value of each category is plotted.

KEY CONCEPTS

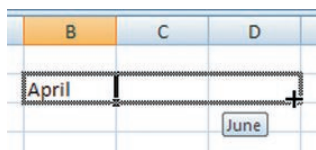
Select Cells

- Actions and commands affect the active, or selected, cell(s).
- The active cell has a bold black border around it.
- You can also select a **range** of cells.
- When a range is selected, the border surrounds all selected cells. The active cell has a white fill, while other cells in the range are shaded.

Fill a Series

- A **series** is a sequence of numbers (such as 1, 2, 3), dates (such as 10/21/07, 10/22/07, 10/23/07), times (such as 2:30, 2:45, 3:00), or text (such as January, February, March).
- To enter a series based on a text label in the active cell, drag the **fill handle** of the active cell across the range of cells that you want to fill.
- For example, enter January into a cell, then drag the fill handle down or to the left to fill the series with the next month names: February, March, and so on.
- To enter a series based on a number, enter the first two number of the series in consecutive cells, select both cells, and then drag the fill handle across the range of cells you want to fill.
- As you drag, a ScreenTip displays the values of the current series below the mouse pointer. The series values are entered in the cells when you release the mouse button.

Drag the fill handle of the active cell to create a series



- To create an incremental series (i.e., 1, 3, 5, 7), enter the data for the first and second cells of a series, select the two cells, then drag the fill handle for the selection over the range of cells to fill.

- You can also use the fill handle to copy formatting (such as bold, italics, and so on) from one cell to adjacent cells, and not its value.
- In addition, you can use the fill handle to copy both the cell's value and its formatting.

Change Font Formatting

- The default Excel 2003 **font** is Arial.
- The default Excel 2007 font is Calibri.
- **Font size** is measured in points. There are 72 points in an inch.
- The default Excel 2003 font size is 10 points.
- The default Excel 2007 font size is 11 points.
- When you change the font size, Excel automatically adjusts the row height but does not adjust the column width.
- The most common **font styles** are **bold** and *italic*.
- When no style is applied to a font, it is called regular.
- Font styles can be combined for different effects, such as bold italic.

Merge & Center

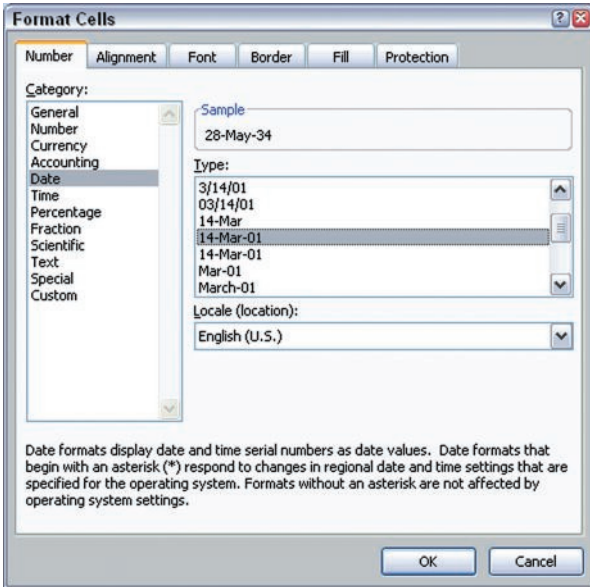
- To center a label across several columns use the Merge & Center feature.
- Merge & Center **merges** the selected cells into one large cell and then centers the data in the newly merged cell.

Apply Number Formats

- You can apply a **number format** to numerical data in a worksheet.
- The number format determines the number of decimal places and the position of zeros (if any) before/after the decimal point.
- For some number formats, you can specify the number of decimal places, as well as options such as whether to display a comma separator to the right of the thousands place.
- Some number formats also include symbols such as dollar signs, percentage signs, or minus signs.

- Changing the number format of a cell does not affect the actual value stored there or used in calculations—it affects only the way in which that value is displayed.

Number tab of Format Cells dialog box



- When you create an **embedded chart**, the chart exists as an object in the worksheet alongside the data.
- All charts are linked to the data they **plot**. When you change data in the plotted area of the worksheet, the chart changes automatically.
- Typically a chart includes the following elements:
 - **Data series**
 - **Legend**
 - **X-axis**
 - **Y-axis**
 - **Categories**
- You can select to show, hide, edit, and format chart elements.
- In Excel 2003, you use the Chart Wizard to insert a chart, and then select and edit chart elements.
- In Excel 2007, you insert a chart, and then either select a chart layout or select individual chart elements.
- You can resize or move an embedded chart as well as chart elements.

Insert a Chart

- Use a pie **chart** to show the relationship of each value in a data range to the entire set of data. The size of each wedge of the “pie” represents the percentage each value contributes to the total.
- Use a line chart to show a trend over time.

Set Page Orientation

- There are two page orientations:
 - **Portrait**
 - **Landscape**
- Portrait is the default orientation.
- Use landscape orientation to display a worksheet across the wider length of the page.

PROCEDURES

Select Cells

A single cell:

- Click cell to select..... ⬇/⬆/⬅/➡

An adjacent range of cells:

- Drag to select adjacent cells.
- OR**
1. Click first cell in range..... ⬇/⬆/⬅/➡
 2. Press and hold **Shift**..... ⬆+Shift
 3. Click last cell in range..... ⬇/⬆/⬅/➡

A nonadjacent range:

1. Click first cell in range..... ⬇/⬆/⬅/➡
2. Press and hold **Ctrl**..... Ctrl
3. Click next cell.
4. Repeat step 3 to select additional cells.

All cells in a worksheet:

- Click **Select All** button in upper-left corner of worksheet..... Ctrl+A
- ✓ *The Select All button is a gray block in the worksheet frame, above the row headings and to the left of the column headings.*

A row:


- Click the row heading.

A column:

- Click the column heading.


Fill a Series Using Mouse

Dates or text labels:

1. Enter the first value in the series in active cell.
2. Select the cell, and then point to its fill handle.
 - ✓ *The mouse changes to .*


3. Drag the fill handle down, up, left, or right to fill the series.
 ✓ *To copy the value and not create a series, press **Ctrl** as you drag.*

Numbers:


1. Enter the first values in the series in active cell.
2. Enter the next value in the series in an adjacent cell.
3. Select the cells, and then point to its fill handle.
 ✓ *The mouse changes to .*
4. Drag the fill handle down, up, left, or right to fill the series.
 ✓ *To copy the value and not create a series, press **Ctrl** as you drag.*

Merge and Center

Excel 2007:




1. Select cells to merge
2. Click **Home** tab **(Alt)+H**
Alignment Group
3. Click **Merge & Center** button  **(M), (C)**

Excel 2003:




1. Select cells to merge
2. Click **Merge & Center** button  on Formatting toolbar.

Apply Bold, Italics, or Underline

Excel 2007:


1. Select cell(s) to format.
2. Click **Home** tab **(Alt)+H**
Font Group
3. Click font style button:
 - **Bold**  ①
 - **Italic**  ②
 - **Underline**  ③

Excel 2003:

1. Select cell(s) to format.
2. Click font style button on Formatting toolbar:
 - **Bold**  **(Ctrl)+B**
 - **Italic**  **(Ctrl)+I**
 - **Underline**  **(Ctrl)+U**
 ✓ *To remove font styles repeat steps 1 and 2.*


Apply Number Format

Excel 2007:

1. Select cell(s) to format.
2. Click **Home** tab **(Alt)+H**
Number Group
3. Click arrow on **Number Format** button  **(N)**
4. Click a number format **(↑/↓), (←Enter)**
OR

1. Select cell(s) to format.
2. Click **Home** tab **(Alt)+H**

Number Group



3. Click **Number group** dialog box launcher  **(F), (M)**
4. Click **Number** tab, if necessary **(Ctrl)+Tab+**
5. Click format type in **Category** list **(Alt)+C), (↑/↓)**
6. Select options as necessary:
 - a. Click **Decimal places** **(Alt)+D)**
 - b. Type number of places
 ✓ *You may use the up or down increment arrows to set places.*
 - c. Click to select or deselect **Use 1000 separator (,)** check box **(Alt)+U)**
 ✓ *There may be different options, depending on the selected number format.*
7. Click **OK** **(←Enter)**

Excel 2003:

1. Select cell(s) to format.
2. Click **Format** **(Alt)+O)**
3. Click **Cells** **(E)**
4. Click **Number** tab, if necessary **(Ctrl)+Tab+**
5. Click format type in **Category** list **(Alt)+C), (↑/↓)**
6. Select options as necessary:
 - a. Click **Decimal places** **(Alt)+D)**
 - b. Type number of places.
 ✓ *You may use the up or down increment arrows to set places.*
 - c. Click to select or deselect **Use 1000 separator (,)** check box **(Alt)+U)**
 ✓ *There may be different options, depending on the selected number format.*
7. Click **OK** **(←Enter)**

Increase or Decrease Decimal Places

Excel 2007:

1. Select cell(s) to format.
2. Click **Home** tab **(Alt), (H)**
Number Group
3. Change number of decimal places:
 Click **Increase Decimals** button  **(0)**
OR
 Click **Decrease Decimals** button  **(9)**
 ✓ *You can click these buttons as many times as needed to select the number of decimal points you want.*

Excel 2003:

1. Select cell(s) to format.
2. Click **Format** **(Alt)+O)**
3. Click **Cells** **(E)**
4. Click **Number** tab, if necessary **(Ctrl)+Tab+**