Spreadsheet Outline

Included in this outline…

- Introduction
- Getting started
- Enter data (labels & values)
- Inserting functions & formulas
- Formatting options
- Creating charts & graphs
- Making the learning tool

I) Introduction & Examples

1) Introduction PPT
2) Links on assignment page to classroom examples.
3) Show examples from previous semesters

II) Getting Started

1) Open MS Excel and Save new spreadsheet (workbook) as *LastName_SS.xls*
2) Go to View -> Normal

III) Entering Data (Labels and Values)

1) Confirm that the Formula bar is visible (View menu > Formula Bar)
2) Display Standard and Formatting toolbars (drag to arrange as necessary)
3) Entering data
   a) Enter headings (labels) in row 1 (including Total Points & Percent)
   b) Enter 15 student names (Last Name, First Name) in column A, row 2-16
   c) Sorting Names
      ⇒ Select range of cells first to avoid sorting the entire worksheet
      ⇒ Click Sort symbol on toolbar or use Data menu > Sort
   d) Adjusting column widths & row heights
      ⇒ Drag vertical line separating columns
      ⇒ Drag horizontal lines separating rows
      ⇒ Double-click these lines to auto fit column width or row height
   e) Leave row 17 blank, enter Points Possible in row 18
   f) Enter Average label in row 19
   g) Enter assignment scores for each student (don't exceed points possible and save periodically)

IV) Entering Formulas

1) Identify the need to add the grades in row 2
2) Demonstrate entering a mathematical formula in cell H2: =B2+C2+D2+E2+F2+G2
   a) If an error is made when entering formulas, press the ESCAPE key
3) Explain how this can be shortened using a Function, =Sum (B2:G2) by inserting =; selecting SUM formula; selecting cells to be summed; hit return.

Entering Functions

4) Review the types of common mathematical functions used in a spreadsheet.
   a) Sum, Average, Count, etc.
5) Calculate data as required by assignment using functions & formulas:
   a) Calculating the total points per student
      ⇒ Use function in cell H2 =Sum(B2:G2)
      ⇒ Use the Autosum feature in cell H3
         (a) Click once to select cell H3
         (b) Click the Autosum button. Press Enter to accept the formula.
   b) Fill the function down the H column
      ⇒ Select cell H3. Move to lower right of cell until cursor changes. Click & drag down to cell H16. Notice the relative copy of the function.

6) Save
7) Calculate the total points possible
   a) Highlight cells B18 through G18.
   b) Click the Autosum button on the toolbar. Press Enter to accept the formula.
8) Calculate the average in each column
   a) Select Cell B19. Use the Average function:
      ⇒ Insert menu > Function… > Average
      ⇒ Drag the function window to right, if necessary, to reveal column B
      ⇒ Highlight the cells to be included in the average (B2 thru B16)
      ⇒ Click the OK button
   b) Fill this formula to the right thru column H
9) Save
10) Calculate the percentage in each row
   a) Discuss formula for calculating a % value (H2 divided by H18)
      ⇒ Total Score will change with each student
      ⇒ Total Possible will ALWAYS remain the same.
   b) Demonstrate problem using Fill Down
   c) Select Cell I-2 and enter =H2/H18
      (the dollar signs indicate that the reference to H18 is always the same)
   d) Fill Down
   e) Select cell I3 to examine the formula
      ⇒ Notice how H2 changed to H3
      ⇒ H18 did NOT change
   f) Format cells as percentages
      ⇒ Select cells I-2 to I-16.
      ⇒ Click the % symbol in the Formatting toolbar to format cells as %
      ⇒ Click on the Decrease Decimal button in the Formatting toolbar to reduce the number of decimals.
      ⇒ Using this method, format the percentages in column H and the averages in row 19 to one decimal place.
11) Save

V) Formatting Options

1) Format column headings
   a) Highlight cells (labels) in row 1
   b) Use the Formatting toolbar to apply bold style
   c) Explore Fill Color and Font Color options as well
   d) Alternating fill color
      ⇒ Select alternating rows using the Control key
      ⇒ Change the Fill Color (use colors to *enhance* legibility!)
2) Changing font face and size
   a) Formatting toolbar
3) Changing column widths and row heights
   a) Drag or double-click line separating columns/rows
   b) Highlight a series of rows or columns; move one line and all remaining will be the same height and width

4) Changing the contents of a cell
   a) Double-click a cell to make changes directly in the cell.
   b) Single-click a cell and make changes in the formula bar.
   c) Changing the text orientation (so labels in row 1 consume less space)
      ⇒ Select row 1 (all cells in row 1)
      ⇒ Format menu > Cells > Alignment tab

VI) Creating a Chart *Visually representing the data in the workbook*

1) Selecting data range:
   a) Select all cells between columns A–G in rows 18–19
   b) Using the Control key (PC) or Command key (Mac) highlight cells A1–G1
2) Inserting chart

Steps for Macintosh platform (*Skip if PC/Windows*)

   a) Insert menu > Chart
      ⇒ Type of Chart: Column > Cluster Column
   b) Move the chart so that it is not overlapping the gradebook data
   c) Customizing chart in the Formatting Palette
      ⇒ From the titles pull down menu choose
      ⇒ Chart Title and name it *Student performance*
      ⇒ Horizontal (Category) Axis - name *Assignments*
      ⇒ Vertical (Value) Axis – name *Points*
   d) Explore other chart options
   e) Chart Data manipulation
      ⇒ Chart menu > Source data; Chart options…

Steps for Windows/ PC platform

   f) Insert menu
      ⇒ Column 2-D Column > Clustered Column
   g) Customizing Chart (chart must be selected to see chart tools)
      ⇒ Select Layout tab from the Chart Tools menu
         (a) Click Chart Title icon: name it *Student performance*
         (b) Click Axis Titles icon:
            (i) name the Primary Horizontal Axis *Assignments*
            (ii) name the Primary Vertical Axis *Points*

3) Chart Formatting
   a) Changing the chart colors
      ⇒ Double-click on any part of the chart, including text boxes
      ⇒ Select desired color & other options
      ⇒ Can use the formatting toolbar as well
      ⇒ Single click chart elements, then use the formatting toolbar

VII) Renaming Sheets

1) Double click on “Sheet 1” and change the name to Gradebook
2) Double click on “Sheet 2” and change the name to Learning Tool
3) Troubleshooting:
   a) If missing Sheet 2, use Insert menu > Worksheet
   b) If worksheets tabs are hidden
      ⇒ MAC: Go to Window menu > Zoom Window
      ⇒ PC: Double click the document’s title bar (ext to your filename)

VIII) Prepare the Worksheet for Your Learning Tool

1) Click on the Learning Tool worksheet tab
2) Create a space for the directions at the top of the worksheet
   a) Insert > Text Box (from the drawing toolbar of some versions of MS Office)
   b) Click and drag to create the Text Box area

IX) Create Word document for your reflections

1) Copy and paste 4 prompts included in the reflection guidelines
2) Save document
3) Your reflection will be based on INTASC Standards 4 and 11 (see Reflection Guidelines on the Spreadsheet assignment page)

Summary of Requirements for the Learning Tool

On the "Learning Tool" worksheet, construct a spreadsheet that could be used to support specific learning within your thematic unit. Consider one of your unit objectives AND the components of INTASC Standards 4 and 11 to generate an idea for a tool that would support your students' learning. You may use the links on the assignment description page to search for examples of such learning tools and generate ideas for your own project.

Familiarize yourself with the Spreadsheet assignment page and carefully review the point structure of the assignment prior to submitting your project!

Top Section (Directions written for the student if applicable)

- Goal of the activity (What students will learn).
- Relationship of the activity to the overall thematic unit
- Directions for how to use the learning tool (Addressed to the students, or substitute teacher)

Bottom Section (the Learning Tool) includes:

- At least two different formulas are used to calculate data OR at least one chart or graph is used to represent data on the worksheet.
- Formulas function correctly and/or chart/graph accurately represents the data on the worksheet.
- The learning tool demonstrates how one can support student learning with regard to one of the components of INTASC standards 4 & 11
  - Standard 4 Components: Critical thinking, problem solving, or performance skill
  - Standard 11 Components: Integrates the computer and other high and low technology)

Reflections (submit via eLearning, copy & paste this into the Submission box)

- Content follows the Reflection Guidelines, including identification of related ABCD-style unit objective and alignment with one or more components of INTASC standards 4 and 11.

Complete all four prompts included in the reflection guidelines
Reflection quality will be graded in terms of clarity & depth of reflection.
Copy and paste your written reflection into the Submission box before submitting your assignment.