Assessment and Design Strategies

Assignment 4:
   EXCEL®-advanced and graphics
   - Open a New *Excel* spreadsheet (Start/Programs/*EXCEL*)
   - Enter in the following information (Note which parts are Bold and which cells have been centered---also highlight the letter grade distribution)
   - Label this sheet: Science Per_1 (double click on the tab on the bottom—and rename it)

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**AVG**	**GRD**
Joey Bernelli	75	80	80	67	80	80	80	80	71	83		
Michael Carrigan				65	72	88	78	62	74	83		
Juanita Escovar	88	100	96	67	87	77	92	96	28	88		
Esther5 Friedman	88	50	88	96	100	86	96	88	100	100		
Amanda Hunt	92	86	100	88	93	91	92	96	94	85		
Alberta Montoya		90	100	96	87	86	92	88	80	63		
Bruce Nguyen	88	97	100	100	93	100	88	100	72	79		
Dana Thompson	87	100	100	100	100	95	100	92	94	83		
Levar Williams	0	100	88	96	93	82	92	100	0	85		
Eric Yankovich	96	100	100	88	100	91	83	96	83	63		
	F	0	64									
	D	65	74									
	C	75	84									
	B	85	92									
	A	93	100									

- Average the grades
   o In the previous exercises we learned to total or sum the grades. You can in the formula location have it divide by the number of grades to get the average
      ▪ =SUM(B4:K4) would give us a total
      ▪ =SUM(B4:K4)/10 will give us an average grade
   o You can also use the AVERAGE function
      ▪ (in the formula location type in =AVERAGE (list the cell range i.e. B4:K4 or highlight the area and *EXCEL* will do that for you)
- Once you have done the first average you can copy to the rest of the cells. Copy the formula down the column for all students in the grade book and save the worksheet again. Notice the AVERAGE function calculates only for nonempty cells, and a numerical grade of 0 should be entered as 0. Grades left "blank" can be interpreted as "excused".
- Have *Excel* calculate the letter grade
   o *Excel* will automatically find cells in a table based on a specified value. To create a grading scale table to look up a letter grade that corresponds with the numerical grade average, use LOOKUP to find values in a single column table, VLOOKUP (vertical lookup) to find values in tables arranged in multiple columns, and HLOOKUP (horizontal lookup) to find values in tables arranged in multiple rows.

You can cut and paste the table up above into Excel
- Once in the Excel spreadsheet

- o Click in the first final grade cell (GRD cell) (e.g., One to the right of Joey's final grade = 77.6%)
- o In the formula location (in the menu box location)—click on the *fx* (a pop up box will appear)
- o Choose *Lookup & Reference* (you might need to navigate to this in the pull down window section). Lookup & Reference translated to look at the number I tell you (e.g., the average score) and convert it to a reference value I tell you (e.g., the letter grade)
- o Choose **Lookup**---then **OK**
- o Popup box appears—choose **LOOKUP (lookup_value, lookup_vector, result_vector)** this translates to look at the average score—look at the grading scale range this falls into---assign a letter grade to that value)
- o A new popup appears
  - ▪ In the Lookup_value area-click on the 1st AVE grade cell **(the Joey 77.6% like before)**
  - ▪ Next line-lookup_vector—highlight the grade ranges **(middle column only) 0—65—75—85—93**
    - • Click on **F4** key to make this range absolute[1]
  - ▪ Result_vector area-highlight the **grade range**
    - • Click on **F4** key to make absolute values
  - ▪ **Enter**
- o **Edit---copy**
- o Highlight the rest of the cells----**Enter—paste**
- o **The number grades are converted to letter grades**
- • Save---save---save
- • Copy your spreadsheet and paste it into a word document (**Start/Programs/Word** once in Word New)
- • If the spreadsheet does not fit—**Table/Select/Table/Autofit/To window**
- • To set a worksheet to print row and column headings on the active sheet, select **File/PageSetup/Sheet.** Then select the **Row and column headings** and **OK**. Select **File/Page Setup/Sheet.** Clear the Row and column headings check the box and click **OK** (to reset the default—i.e., just like when you Bold something you have to go back and unbold to reset it)
- • To print with gridlines
  - o Copy from *Excel* into Word—highlight in word—Click on the **borders tool** from your task bar and choose the one you like
  - o To keep the *Excel* gridlines (if printing from Excel or to copy to Word and keep the gridlines) -- Select **File/Page Setup/Sheet.** Then select **Gridlines**. To print the sheet, from the **Page Setup** dialog box click **Print** and click **OK**. The worksheet is printed on the printer. **Select File/ Page Setup/Sheet,** clear the gridlines check box and click OK to reset to default
- • Use the **Print Preview** to see what it would look like—you might want to insert a page break (**Insert/Page Break**) or Print Landscape instead of normal layout (**File/Page**

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[1] Why F4? The LOOKUP table (where you tell the computer what the letter grade will be e.g., 40 and below = F, 41-50 =D etc… what ever you have decided) does not change—but the students and student grades that you want the computer to convert will. The F4 places a $ sign in front of the values –this tells the computer to "set" or refer back to that LookUP table. If you didn't apply this, the range would slowly start to change--the range of grades would slowly start to change—and pretty soon the numbers wouldn't correspond to the grading scale you want.

Parts revised from: Robyler, M.D., & Mills, S.C. (2003). Technology tools for teachers: A Microsoft office tutorial. Pearson Education, Inc., Upper Saddle River, NJ   2

Setup/Page/Landscape). To insert a page number or header and footer (**Insert/Page Number** and choose your option. **View/Header Footer** and add content

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A more detailed list of the steps to apply the LOOKUP feature is described below. For some who like to know the why's to the steps—this sometimes helps. THIS IS NOT an additionally part to the exercise—only a more detailed explanation to the description up above.

- o To use a lookup function, you must have a table with appropriate values arranged in the proper order. (e.g., like the one you just did)
- o Although the grading scale table actually has multiple columns to indicate the beginning and ending range of values for each letter grade, you will only need the value in the middle column to perform the lookup. The rightmost column is only for your benefit to show the end range of values that equates to the letter grade.
- o Click on the cell you want it to present the converted letter grade. Since this is a complex task—this is easier to use **Paste Function** to enter the formula(clcick on the *fx)*—then select **Lookup & Reference** (for the function category) and **LOOKUP** as the function name. Click **OK**.
- o The syntax is: =LOOKUP(lookup_value, lookup_vector, result_vector) this corresponds to the average grade cell, the grade range (what ='s A,B,C etc…) and the calculated grade cell. Select the appropriate argument in the **Select Arguments** dialog box (lookup_value, lookup_vector, result_vector) and click **OK**.
- o In the **LOOKUP** dialog box, click the icon on the right side of the **Lookup_value** data entry box to select a value to look up in the grading scale table. When the full worksheet displays on the screen, click the cell you want the grade to be converted from (e.g., the AVE cell) and then press **enter.**
- o When the **LOOKUP** dialog box appears again, click the **Lookup_vector** box and select cells to select a vector (single table column—the middle values) for looking up the Lookup_value. Press the **F4** key (top—top row of keyboard) to make the cell range absolute and press **ENTER**. When you copy the formula to the other cells you do not want the position of the grading scale table to adjust relative to the cell being copied.
- o Notice the lookup_vecto is arranged in ascending order. *Excel* will search the lookup_vector for the lookup_value. If an exact match is not found, the LOOKUP function will return the value that matches the largest value in lookup_vector that is less than or equal to lookup_value.
- o When the LOOKUP dialog box reappears, click the **Result_vector** box, then select your cell range. Press the **F4** key to make the cell range absolute then press **ENTER.** When you copy the formula to the other cells, you do not want the position of the grading scale table to change relative to the cells being copied.
- o Click OK in the LOOKUP dialog box to complete data entry of the formula. Letter grade is displayed.
- o The formula in the letter grade just displayed if done correctly would read something like this: =LOOKUP(L4,$C$15:$C$19,$B$15:$B$19). Now you can copy this formula to the rest of the cells.
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