

Lists and Pivot Tables

Excel 2007

This is not an official training handout of the
Educational Technology Center, Davis School District

Defining a List	2	Number Filters	5
Using a Form to Enter, Change, or Delete Information	2	Filtering with Wildcards	6
Making the Form Available	2	Special Functions (Formulas) for Lists.....	6
Opening the Form	2	Finding a Formula.....	6
Using the Form	2	COUNTIF	6
Sorting Lists	2	SUMIF	6
Simple Sorting	2	D Functions	6
Custom Sorting	3	DAVERAGE.....	7
Sorting Left to Right instead of Top Down.....	3	Pivot Tables	7
Sorting by Date	3	What is a Pivot Table?	7
Sorting by the Day of the Week or by the Month of the Year	3	Starting the Pivot Table	7
Filter	4	Structure of a PivotTable	8
Changing the Filter	4	Pivot Table Options	8
Clearing a Filter	4	Arranging the Pivot Table with the Field List	8
Showing Items with Blank Cells	4	Changing the Calculation.....	9
Showing All of the Information.....	4	Changing the Number Format	9
Turning Off the Filter.....	4	Refreshing Data	9
Advanced Filtering.....	5	Sorting the List.....	9
Multiple Columns	5	Filtering the List.....	9
Text Filters	5	PivotTable Layout.....	10
		PivotTable Styles	10

Defining a List

- Each column is a field with a particular item of information in the list.
- Each row is a record (the information on a person, etc.).
- The top row contains labels identifying each field.
- Do not use blank rows or columns to separate one part of the list from another.
- The list is separated from the other information on the spreadsheet by blank rows and/or columns OR the additional information is placed on a separate sheet.

Using a Form to Enter, Change, or Delete Information

Making the Form Available

- Click on the **Microsoft Office Button**.
- Click on the **Excel Options** button.
- Click on **Customize** in the left pane.
- Click on the **Choose commands from** down arrow and choose **All commands**.
- Scroll through the list and click on **Form....**
- Click on the **Add** button.
- Click on **OK**.

Opening the Form

- Click in the list.
- On the **Quick Access toolbar**, click on the **Form...** button.

Using the Form

- To add a new record, click on the **New** button.
- To find the next record, click on the **Find Next** button.
- To find the previous record, click on the **Find Prev** button.
- To get rid of a record, find the record and then click on the **Delete** button.
- To find a record with certain information, click on the **Criteria** button.
- Click in the appropriate field and enter the information being sought.
- Click on the **Find Next** button.



Sorting Lists

Simple Sorting

- Click in the column to be sorted.
- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Sort A to Z** or **Sort Z to A**.

Custom Sorting

- Click in the list.
- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Custom Sort...**
- Click on the down arrow of the **Sort By** box and choose the field to sort by.
- Click on the down arrow of the **Sort On** box and choose **Values**. (Other choices include **Cell Color**, **Font Color**, or **Cell Icon**.)
- Click on the down arrow of the **Order** box and choose **A to Z** or **Z to A**.
- Click on the **Add Level** button to add the next field to be used in the sort.
- Choose the desired field to sort by, values to sort on, and the desired order of the sort.
- Add or delete levels to the sort as needed.
- If the list does not have a header row with names for the fields, be sure to remove the checkmark from **My data has headers** at the top of the window.
- Click on **OK**.



Sorting Left to Right instead of Top Down

- Click in the list.
- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Custom Sort...**
- Click on the **Options...** button.
- Click on the **Sort left to right** radio button and then click **OK**.
- Set up the sort as mentioned above.
- Click on **OK**.

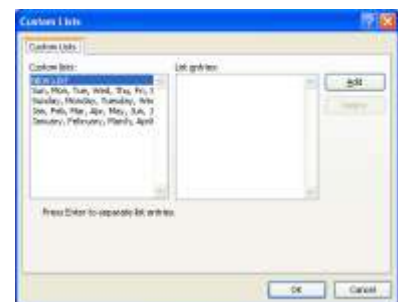


Sorting by Date


- Click in the list.
- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Custom Sort...**
- Set up the sort the usual way.
- Click on the **Options** button.
- Click on the down arrow under **First key sort order** and choose one with the months listed.
- Click on **OK** and then click on **OK** again.

Sorting by the Day of the Week or by the Month of the Year


- Click in the list.
- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Custom Sort...**
- Click on the **Options** button.
- Click on the down arrow under **First key sort order** and choose one with the week days listed.
- Click on **OK** and then click on **OK** again.




Filter

- Click in the list.
- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Filter**.
- Click on the down arrow of the column to be filtered. 
- Choose from the list the items to be displayed.
- Click on **OK**.

Changing the Filter

- Click on the filter button at the top of the column. 
- Choose from the list the items to be displayed.
- Click on **OK**.


Clearing a Filter

- Click on the filter button at the top of the column. 
- Click on **Clear Filter From** “-----”.

Showing Items with Blank Cells

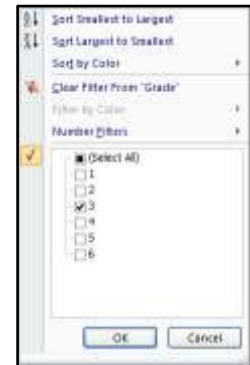
- Click in the column to be filtered.
- Click on the button at the top of the column.
- Click to remove the checkmark from **Select All**.
- Scroll to the bottom of the list and choose **Blanks**.
- Click on **OK**.

Showing All of the Information

- Click on the filter button at the top of the column. 
- Click in the **Select All** box.
- Click on **OK**.

Turning Off the Filter

- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Filter**.
- When the filter is turned off, all data is displayed.



Advanced Filtering

- Advanced filtering will allow filtering on more than one column at a time or more than one condition in a single column.

Multiple Columns

- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Filter**.
- Click on the down arrow of the first column to be filtered.
- Choose from the list the items to be displayed.
- Click on **OK**.
- Click on the down arrow of the next column to be filtered.
- Choose from the list the items to be displayed.
- Click on **OK**.
- The items that have both conditions chosen are displayed.



Text Filters

- A detailed filter can be applied based on the text in the cells.
- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Filter**.
- Click on the down arrow of the column to be filtered.
- Click on **Text Filters** and then choose the desired filter.
- Choices include: **Equals...**, **Does Not Equal...**, **Begins With...**, **Ends With...**, **Contains...**, **Does Not Contain...**, or **Custom Filter...**
- Enter the desired text in the second box.
- **Note** – A second condition can be applied by clicking on the down arrow of the box on the second row and selecting the desired choice.
- Choosing **And** includes cells in which both conditions are true.
- Choosing **Or** includes cells in which either condition is true.
- Click on **OK**.



Number Filters

- A detailed filter can be applied based on the numbers in the cells.
- On the **Ribbon**, click on the **Home** tab.
- In the **Editing** group, click on the **Sort & Filter** button and choose **Filter**.
- Click on the down arrow of the column to be filtered.
- Click on **Text Filters** and then choose the desired filter.
- Choices include: **Equals...**, **Does Not Equal...**, **Greater Than...**, **Greater Than or Equal To...**, **Less Than...**, **Less Than or Equal To...**, **Between...**, **Top 10...**, **Above Average...**, **Below Average...**, or **Custom Filter...**
- Enter the desired number(s) in the second box.
- **Note** – A second condition can be applied by clicking on the down arrow of the box on the second row and selecting the desired choice.
- Choosing **And** includes cells in which both conditions are true.
- Choosing **Or** includes cells in which either condition is true.
- Click on **OK**.



Filtering with Wildcards

- Wildcards are used when an exact match may not give the desired information.
- **Single Character**
- Use a ? to indicate a single character. i.e. Anderson or Andersen, type Anders?n.
- **Multiple Characters**
- Use a * to indicate multiple characters. i.e. Anderson, Andersen, Anders, etc. Type Ander*.
- The more characters included in front of the asterisk, the more specific it will be.

Special Functions (Formulas) for Lists

- Click in the cell the function is to be placed in.
- On the **Ribbon**, click on the **Formulas** tab.
- In the **Function Library** group, click on the **Insert Function** button.
- Find the desired function in the list of the **Insert Function** window.
- Click on **OK**.
- Choose or enter the necessary information for the function.
- OR click on the **Insert function** button on the **Input Line**.



Finding a Formula

- Click in the cell where the formula should go.
- On the **Ribbon**, click on the **Formulas** tab.
- In the **Function Library** group, click on the **Insert Function** button.
- In the **Search for a function** box, enter a description of what the function should do.
- Click on the **Go** button.
- Some choices appear in the **Select a function** box.
- Click on one of the functions to see a description in the space below the box.
- Click on the desired function in the **Select a function** box.
- Click on **OK**.



COUNTIF

- This function allows you to count how many items in a list meet the criteria.
- =COUNTIF(range,criteria)
- For example, the function =COUNTIF(E2:E24,"F") might be used in an employee list to count how many of the employees listed in rows 2 -24 were female (assuming column F indicated sex of employee).
- Another example, the function =COUNTIF(G2:G24,">=35") might be used in a list of buildings to count how many of them were 35 years old or older (assuming column G indicated the age of the building).

SUMIF

- This function is used in the same way COUNTIF is used.
- =SUMIF(range,criteria,sum_range)
- For example, the function =SUMIF(G2:G24,">=35",H2:H24) might be used in a list of buildings to total the cost of proposed renovations for buildings older 35 years old or older (assuming column G indicates the age of the building and column H indicates the cost of the renovation).

D Functions

- D functions are special functions that work with databases.

DAVERAGE

- This function is used to find the average of a range of data that meets a specified criteria.
- =DAVERAGE(range,field_averaged,criteria_range)
- For example, the function =DAVERAGE(A7:G26,"Salary",A1:A2) might be used in a list of employees to find the average salary of those who met the criteria. If cell A1 is "Age" and cell A2 is ">=40", the function would calculate the average salary for those 40 and older.

Pivot Tables

What is a Pivot Table?

- A **Pivot Table** is a table that summarizes a list of information.
- Pivot Tables are dynamically linked to the original data and change as the data in the original changes.
- Pivot Tables can be adjusted after they are created to perform different mathematical operations.

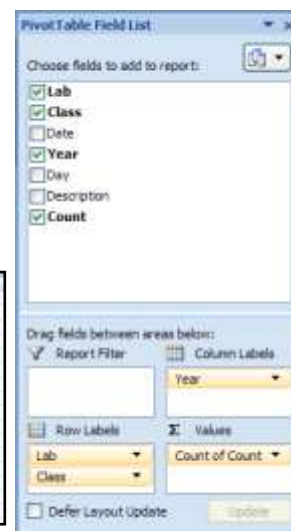
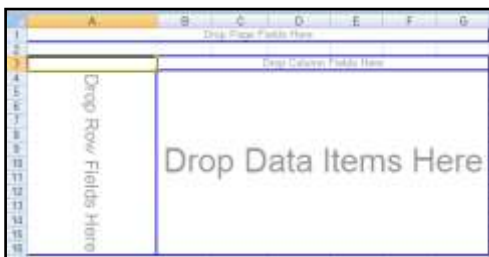
Starting the Pivot Table

- Click in the middle of the list, being sure not to select multiple cells.
- On the **Ribbon**, click on the **Insert** tab.
- In the **Tables** group, click on the **PivotTable** button.
- Notice the area highlighted by the dotted area.
- Check to see if the correct data has been selected.
- If the selected data is not correct:
 - Click on the button at the end of the **Table/Range** box.
 - Select the desired data
 - Click press the **Enter** key.
- To create the PivotTable in a new worksheet, click to choose **New Worksheet**.
- To create the PivotTable in an existing worksheet, click to choose **Existing Worksheet** and then choose a location in the **Location** box.
- Click on **OK**.



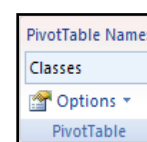
Structure of a PivotTable

- There are four areas in a PivotTable.
 - **Column Labels** – Column labels are at the top right of the PivotTable and provide subdivisions such as the year or date of the item.
 - **Row Labels** – Row labels are at the left side of the PivotTable and provide names for the records displayed.
 - **Values** – Values are at the bottom right of the PivotTable and can be summed, averaged, etc.
 - **Report Filter** – Allows for the data to be restricted by choosing specific data.
- Fields are the bits of information that are usually arranged in a column on the list or database.
- Fields can be placed either as row fields or column fields.
- Data items are fields which may be totaled, averaged, counted, etc. Items being counted may be text items, but if a sum, an average, a standard deviation, etc., is desired, the fields must be numeric.



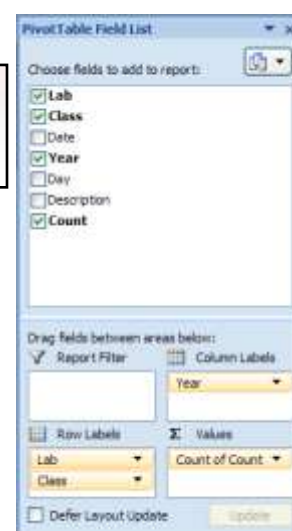
Pivot Table Options

- On the **Ribbon**, click on the **Options** tab of **PivotTable Tools**.
- In the **PivotTable** group, click in the **PivotTable Name** box and enter a name for the **PivotTable**.
- In the **PivotTable** group, click on the **Options** button.
- Click on the **Layout & Format** tab and make desired choice about the layout of the **PivotTable** and the format of the cells.
- Click on each of the other tabs and make choices as desired.
- Click on **OK**.



Arranging the Pivot Table with the Field List

- To display the **Pivot Table Field List**,
 - On the **Ribbon**, click on the **Options** tab of **PivotTable Tools**.
 - In the **Show/Hide** group, click on the **Field List** button.
- To arrange the **PivotTable Field List** pane, click on the view button in the top right corner and choose **Field Section and Area Section Stacked**.
- Click in the **Field Section** to select a field to be included in the **PivotTable**,
- OR click on the desired field in the **Field Section** and drag it to the desired area of the **PivotTable**.
- To change the location of the field, in the **Area Section**, click on the field button and drag it to the desired area.



Changing the Calculation

- Click in the **PivotTable** in a cell of the area to be changed.
- On the **Ribbon**, click on the **Options** tab of **PivotTable**
- In the **Active Field** group, click in the **Field Settings** button.
- Click on the **Summarize by** tab.
- Choose the desired calculation.
- In the **Custom Name** box, enter a name for the calculation. This name appears in the PivotTable at the top of the **Row Labels**.
- Click on **OK**.
- **Note** – Additional options in the presentation of the data are available by clicking on the **Show values as** tab in the **Value Field Settings** window. These options include the ability to show the values as a difference, a percentage, or a running total.



Tools.



Changing the Number Format

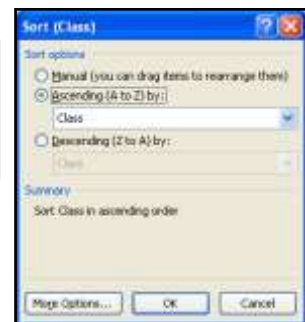
- Highlight the cells in the **PivotTable** to be changed.
- On the **Ribbon**, click on the **Home** tab.
- Use the buttons in the **Number** group to format the numbers as desired.

Refreshing Data

- When changes are made to the original data, the **PivotTable** should be refreshed.
- On the **Ribbon**, click on the **Options** tab of **PivotTable Tools**.
- In the **Data** group, click on the **Refresh** button.

Sorting the List

- Click in the column of the **PivotTable** the list is to be sorted by.
- On the **Ribbon**, click on the **Options** tab of **PivotTable Tools**.
- In the **Sort** group, click on the **AZ** button to sort from A to Z OR click on the **ZA** button to sort from Z to A.
- To sort with more options, in the **Sort** group, click on the **Sort** button.
 - To sort by clicking and dragging the items to the desired location, choose **Manual**.
 - To sort A to Z on a different field, choose **Ascending (A to Z) by**, then click on the down arrow and choose the desired item.
 - To sort Z to A on a different field, choose **Descending (Z to A) by**, then click on the down arrow and choose the desired item.
 - Click on **OK**.



Filtering the List

- A filter can be used to select which items are to be displayed in the list.
- To filter **Row Labels**, in the **PivotTable**, click on the filter button at the top of the Row Fields area of the **PivotTable**.
- Filter the list as desired. Detailed instructions on **Filtering** are found on pages 4 and 5.

PivotTable Layout

- On the **Ribbon**, click on the **Design** tab of **PivotTable Tools**.
- In the **Layout** group are various options for the layout of the **PivotTable**.
- To add subtotals to the **PivotTable**, click on the **Subtotals** button.
- To add totals to the **PivotTable**, click on the **Grand Totals** button.
- Click on the **Report Layout** button and choose **Show in Compact Form**, **Show in Outline Form**, or **Show in Tabular Form**.



PivotTable Styles

- On the **Ribbon**, click on the **Design** tab of **PivotTable Tools**.
- In the **PivotTable Styles** group click on the desired style.
- Make adjustments to the style with choices in the **PivotTable Style Options** group.