

Microsoft Excel  
Sort and Filter

Lesson Plan

Students with some experience using Excel learn how to use the Sort and Filter functions.

Lesson Objectives.

The student will understand and can accomplish these tasks at the end of the lesson:

* Remove Duplicates.
* Sort.
* Filter by checkbox.
* Filter by Text Filter.
* Filter by Number Filter.
* Use Table Formatting.

Lesson Prep Work.

(30 min, at a minimum, prior to student arrival).

* get in early to test for technology failure, because it will happen :-).
* Save a Contacts list spreadsheet to the desktop on each computer.
* print handouts.

Lesson Prerequisites.

* MS Excel 2007 Basics or equivalent skills.

Lesson Outline

The lesson is completed in one (60) minute class session.

# (5) Introduction

* Introduce instructor, students.
  + Ask students at introduction: What is your experience using Excel in the past?
* Let students know it’s okay to take phone calls, but ask them to put their phone on vibrate and answer calls outside the classroom.
* Inform students that they can sit back and watch if the class is too advanced.
* Inform students they can go to the bathroom, they don’t need permission.
* Show order in which class will happen. Explain scope of class.

# (5) Review Vocabulary

* *Activity: Open your workbook.*
  + Ask students to find the workbook in the My Documents folder and double click it.
* *Tabs*
  + The menus of buttons available for you to choose from.
  + You can tell what tab is currently selected because it is highlighted.
    - *Teacher’s Tip: it might be useful to click on a different tab to show a different menu and ask students which tab you currently have selected.*
  + Home Tab – the default tab all of the Office software opens to. It has your most commonly accessed features.
  + Data Tab – where you can find features that deal with data organization and analysis.
  + Discover the wonder and mystery of the other tabs in other classes! (market other classes)
* *Navigating Excel*
  + Row: The sequence of cells going in a horizontal line across your worksheet. A row is denoted by a number.
  + Column: The sequence of cells going in a vertical line across your worksheet. A column is denoted by a letter.
  + Cell: A unique location that is intersection of a row and column.

# (5) Remove Duplicates

* *Explanation: What is it?*
  + Sometimes people accidentally add the same item into a workbook two times. In the case of our contacts list, it could be that someone accidentally signed up two times. We don’t want to harass people with extra letters or emails, so we want to remove duplicate occurrences in our worksheet.
  + Remove duplicates is a feature that looks through all the cells in selected columns and automatically deletes any rows that have information found in previous rows.
  + When we remove duplicates, we want to select the field that will have unique identifiers. If we remove duplicates by last name, we would end up with only one Smith in our contact list. We want to make sure we are using remove duplicates by a column that should not have any repeating information.
  + In a contacts list, this is probably best done by email address.
* *Activity: Remove duplicates by email address.*
  + Step 1 – Click on Remove Duplicates in the Data Tools grouping on the Data Tab.
  + Step 2 – Click on Uncheck All.
  + Step 3 – Select just email address.
  + Step 4 – Click on OK.
* *Explanation: Limitations* 
  + We didn’t get to see what records Excel removed from our list. It just removed the duplicates by email address.
  + If you are concerned about losing information (and you should be), you might want to first run a check to see what the duplicates are. This can be done through a feature called “Conditional Formatting”. If you want to learn how to perform this feature, check out the Excel: Advanced Formatting class!

# (5) Basic Sort

* *Explanation*
  + A sort keeps all of the data on your worksheet visible, but organizes it either alphabetically or numerically.
  + Point out that there is a Sort & Filter grouping on the Data tab. We are going to use the Sort & Filter option on the Home tab today.
    - *Teacher’s Tip: These two buttons do the same thing. My preference is to teach from the Home tab as much as possible, because students don’t have to go looking for buttons, and it simplifies the process.*
  + Click on the Home tab.
* *Activity: Sort by Last Name.*
  + Step 1 – Click anywhere in the Last Name column.
    - *Teacher’s Tip: point out that you click in the column, you don’t select the column. It can be helpful to show the difference or duplicate the sort with the column selected after you walk through the process correctly the first time.*
  + Step 2 – Click on the Sort & Filter button in the Editing grouping on the Home tab.
  + Step 3 – Click on Sort A to Z.
  + Point out that it didn’t just sort that column; it moved all the rows to keep the information together, but organized your data alphabetically by last name.
* *Comprehension Check: Sort by Previous Contributions.*
  + Instructor walks around the room to assist students who struggle.

# (5) Custom Sort

* *Explanation*
  + Sorting allows you to sort a single column at a time.
  + What happens if you want to sort by multiple fields? E.G., what if I want to sort by Zip Code, but I want my contacts organized by Last Name within those Zip Codes?
* *Activity: Perform a custom sort by Zip Code then by Last Name.*
  + Step 1 – Click anywhere in your data. We will select what we are sorting by later.
  + Step 2 – Click on the Sort & Filter button in the Editing grouping on the Home tab.
  + Step 3 – Click on Custom Sort.
  + Step 4 – Set your first sort to be done by Zip Code and organized smallest to largest.
  + Step 5 – Click on Add Level.
  + Step 6 – Set your second sort to be by Last Name and A to Z.
  + Step 7 – Click OK.
* *Comprehension Check: Perform a custom sort by City then by Previous Contributions.*
  + Instructor walks around the room to assist students who struggle.

# (5) Checklist Filter

* *Explanation*
  + Sort arranges data, but keeps it visible. But what if you only want to see specific data?
  + Filter will hide some of your data from your view without actually deleting anything.
  + This is really useful for looking up information or only printing specific information in large worksheets.
* *Activity: Create a filter to only show Denver residents.*
  + Step 1 - Click on the Sort & Filter button in the Editing grouping on the Home tab.
  + Step 2 – Click on Filter.
    - *Teacher’s Tip: point out that all that changed were options arrows appeared next to each of our column headings. We only need to click on the filter button once to perform as many filters as we want. All the filter button on the ribbon does is turn on and off these options buttons.*
  + Step 3 – Click on the options button next to City.
  + Step 4 – Click in the box next to Select All in the checklist portion of the dropdown.
    - *Teacher’s Tip: it’s not intuitive to click on Select All to unselect everything… What we are actually doing is unselecting the Select All option.*
  + Step 5 – Click in the box next to Denver to leave it the only city left selected.
  + Step 6 – Click on OK.
  + Point out that our data is only showing people in our contacts list who live in Denver.
    - *Teacher’s Tip: point out the indicators that a spreadsheet has been filtered: funnel icon appearing next to the filter option on City; row numbers turned blue, row numbers missing from the list.*
    - *If someone filters a workbook and clicks save, the filter is saved as well. If you ever open a workbook that is missing data, first check to see if filters are turned on.*
* *Activity: Remove the filter.*
  + Step 1 – Click on the options arrow next to City.
  + Step 2 – Click on Remove filter from City.
* *Comprehension Check: Create a filter to show only the people who have the title Dr.*
  + Instructor asks students to walk them through the process.
* *Comprehension Check: Remove the filter from title.*

# (10) Number Filter

* *Explanation*
  + Checklist filters are great, when you only want to display a couple pieces of information. But what if I want to display a range of information in a column with several hundred options?
* *Activity: Create a filter to show only people who donated more than $2000 in the past.*
  + Step 1 – Click on the options button next to Previous Contributions.
  + Step 2 – Hover on Number Filter.
  + Step 3 – Click on Greater than or equal to.
  + Step 4 – Type in 2000.
  + Step 5 – Click on OK.
  + Remove the filter when you are done looking at the results.
* *Activity: create a number filter to show zip codes between 80205 and 80210.*
  + Perform a number filter search using the Between option.
  + Remove the filter when you are done looking at the results.
* *Comprehension Check: Create a filter for Previous Contributions between $300 and $5000.*
  + Instructor walks around the room to assist students who struggle.

# (5) Text Filter

* *Explanation*
  + We used a number filter to see a range of numbers in a column, but what if we wanted to see data that contained pieces of text?
* *Activity: Create a text filter to show only people with Gmail addresses.*
  + Step 1 – Click on the options button beside email address.
  + Step 2 – Hover on Text Filter.
  + Step 3 – Click on Ends with.
    - Point out that some devious devil could have an email address of notmygmail.com@yahoo.com, which would show up in the gmail search.
    - Be as specific as possible when creating your filter.
  + Step 4 – Type in gmail.com.
  + Step 5 - Click on OK.
  + Remove the filter when you are done looking at the results.
* *Comprehension Check: Create a filter to show only people with 720 phone numbers.*
  + Instructor walks around the room to assist students who struggle.
* *Activity: Turn off the filter options.*
  + Step 1 – Click on the Sort & Filter button in the Editing grouping on the Home tab.
  + Step 2 – Click on Filter.

# (5) Format as a Table

* *Explanation*
  + When you are looking at this much data in a spreadsheet, it can be hard to see exactly what is going on.
  + Formatting as a table gives a visual element to the table that makes it prettier and easier to read.
* *Activity: Format your data as a table.*
  + Step 1 – Click anywhere in your data.
  + Step 2 – Click on Format as a Table in the Styles grouping on the Home tab.
  + Step 3 – Select any of the formatting options.
  + Step 4 – Click on OK.
  + Point out:
    - Alternating row colors (for most table styles).
    - Filter buttons are active automatically with all table styles.
    - Table extends just as far as the text fields do.
      * *Teacher’s Tip: this is a good time to remind students that when they build worksheets, they shouldn’t leave blank rows or columns between their data. If they do, Excel could miss information you want to include.*
* *Activity: Play with the table formatting.*
  + Show students how to expand the table downward to incorporate more rows.
  + Show students how to change the table formatting using the Table Tools Design tab.
  + If you have time, give the students a chance to play with Total Row.

# (5) Homework

* *Explain:*
  + Students are expected to practice for at least 2 hours between each of the classes in this series.
* *Sort and Filter tutorial at gcflearnfree.org.* 
  + Step 1 – Go to gcflearnfree.org.
  + Step 2 – Click on the Microsoft Office tile.
  + Step 3 – Click on Excel 2013.
  + Step 4 – Assign the tutorial on Sorting Data, Filtering Data, and Tables.

# (5) Conclusion

* Go over handout, review material, and emphasize contact info & further resources on handout.
* Any questions? Final comments?
* Remind to take survey.