Using Excel to Troubleshoot EMIS Data

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Overview

- Basic Excel techniques can be used to analyze EMIS data from Student Information Systems (SISs), from the Data Collector, and on ODE EMIS reports
- This session will demonstrate Excel functions and practical applications that can be helpful in all phases of the EMIS data review process

Outline

- Create a Macro to Format a Spreadsheet

- Calendar Data Verification

- Create a Dropdown List in Excel

- FTE Detail Report Subtotaling

Create a MACRO to Format a Spreadsheet

Create a Macro

- A macro can be created to complete spreadsheet set ups with one click
  - Freeze Top Row
  - Wrap Text in the Header Row
  - Justify column width
  - Apply Filters
- Create it once and use it over and over
- Start by opening any FTE Report from the Data Collector

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Begin Creating a Macro

From the View tab, select the down arrow under Macros and select "Record Macro"

Record Macro Prompt

Set up the prompt

Enter a Macro name or leave as the default value

Enter a unique Shortcut key value
Tip- enter a value that you don't typically use as a Ctrl command (don't use values such as Ctrl A, Ctrl C, Ctrl V, etc.)

Select "Personal Macro Workbook" from the "Store macro in" dropdown menu then click OK

Record Macro

Macro name:
Macro1

Shortcut key:
Ctrl+ t

Store macro in:
Personal Macro Workbook

Description:

OK   Cancel

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Recording the Macro

- Macro is now recording
- Ready status and a small square icon show at bottom left

31	040404	042222	I		TW26248	Emis ID	Last Nam	First Nam	Middle N	040404	FTED-001	FT0000
32	040404	042222	I		XG70213!	Emis ID	Last Nam	First Nam	Middle N	040404	FTED-001	FT0000
33	040404	011606	I		DD84801:	Emis ID	Last Nam	First Nam	Middle N	011606	FTED-001	FT0000
34	040404	011606	I		LS693436	Emis ID	Last Nam	First Nam	Middle N	011606	FTED-001	FT0000
35	040404	011606	I		FL311036	Emis ID	Last Nam	First Nam	Middle N	011606	FTED-001	FT0000
36												
37												
38												

Hovering over the icon will generate the message- "A macro is currently recording. Click to stop recording."

(FTED-001) FTE Detail043968-201 ⊕

READY ▪

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Recording the Macro, cont'd
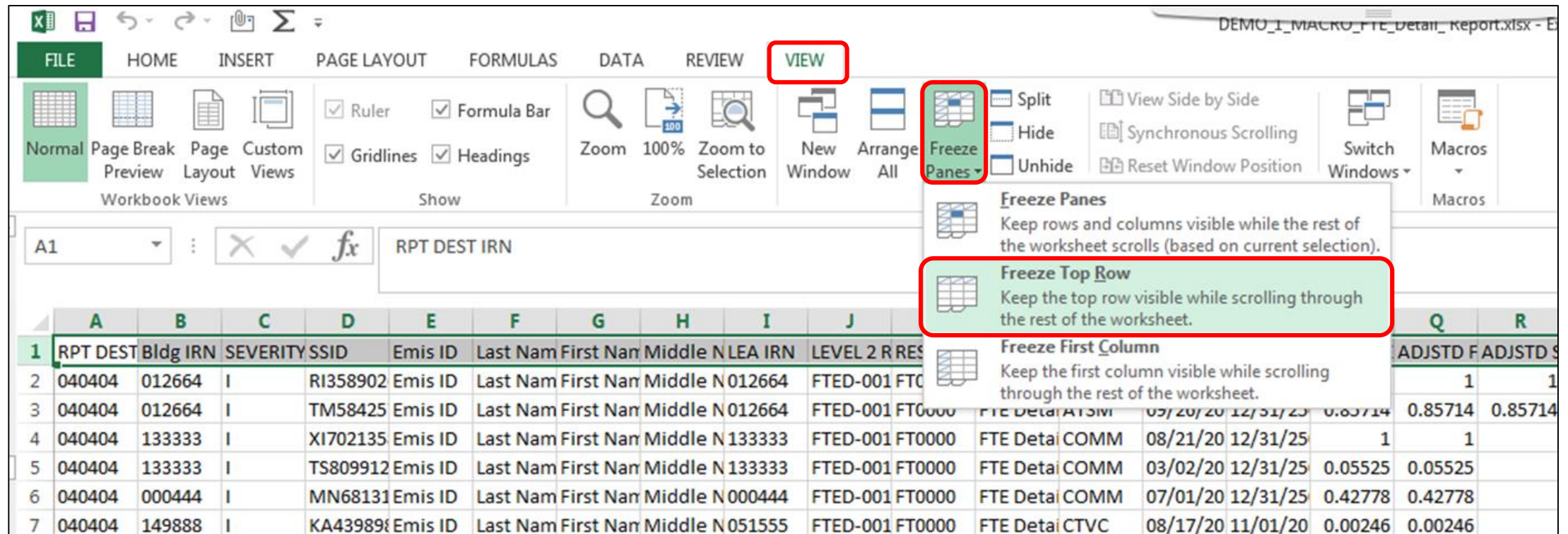
Start by selecting the top row

Click on the "1" to select the first row

Recording the Macro, cont'd

From the View tab, select "Freeze Panes" and "Freeze Top Row"

Recording the Macro, cont'd

From the Home Tab, select "Wrap Text"

Recording the Macro, cont'd

Click on the triangle between Column A and Row 1 to select the entire spreadsheet

Place cursor between any two column headers and double click

Recording the Macro, cont'd

From the Home tab, select "Sort & Filter" and then "Filter"

Stop the Recording

Click on the small square icon at the bottom left to stop the recording

The appearance of the icon will change and a hover message will appear. "No macros are currently recording. Click to begin recording a new macro."

Make the Macro a Quick Link

Select the Quick Link dropdown arrow, then "More Commands"
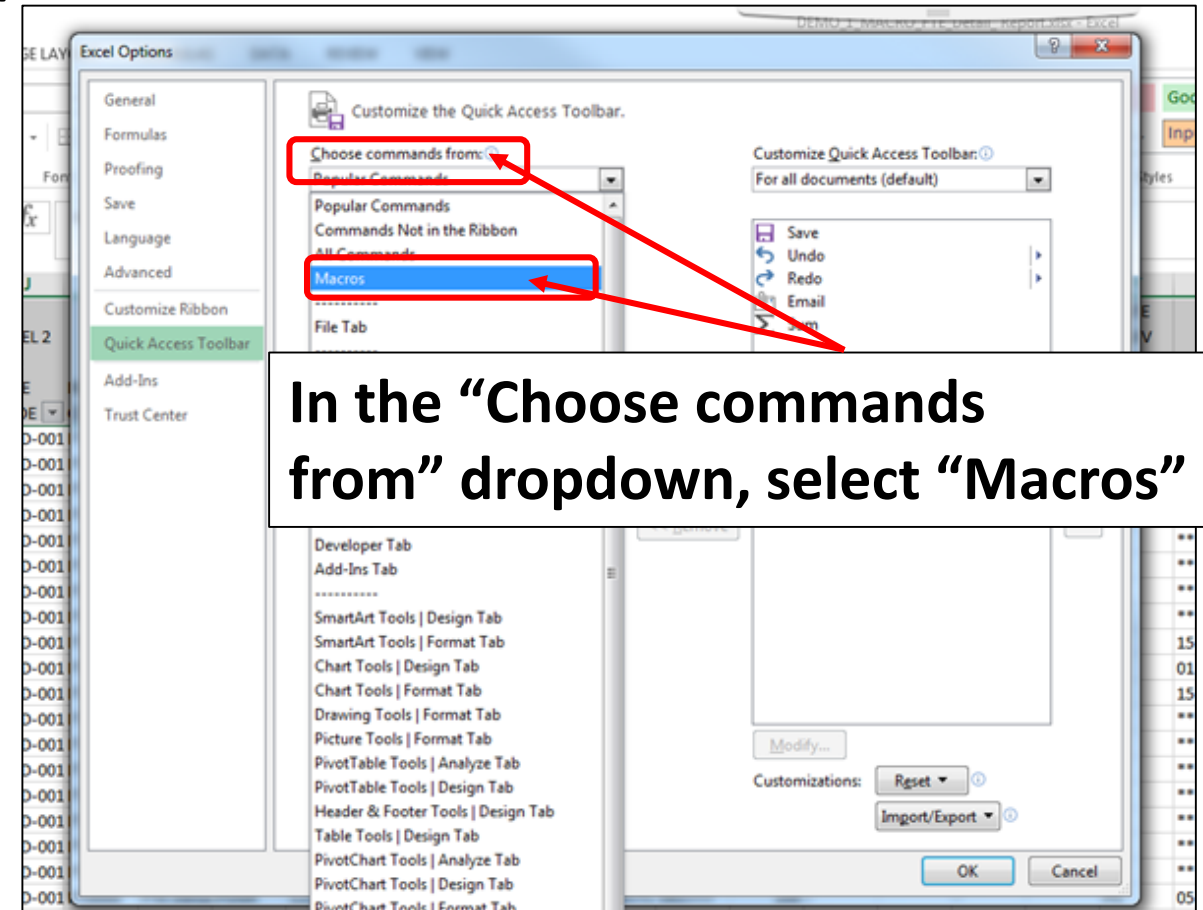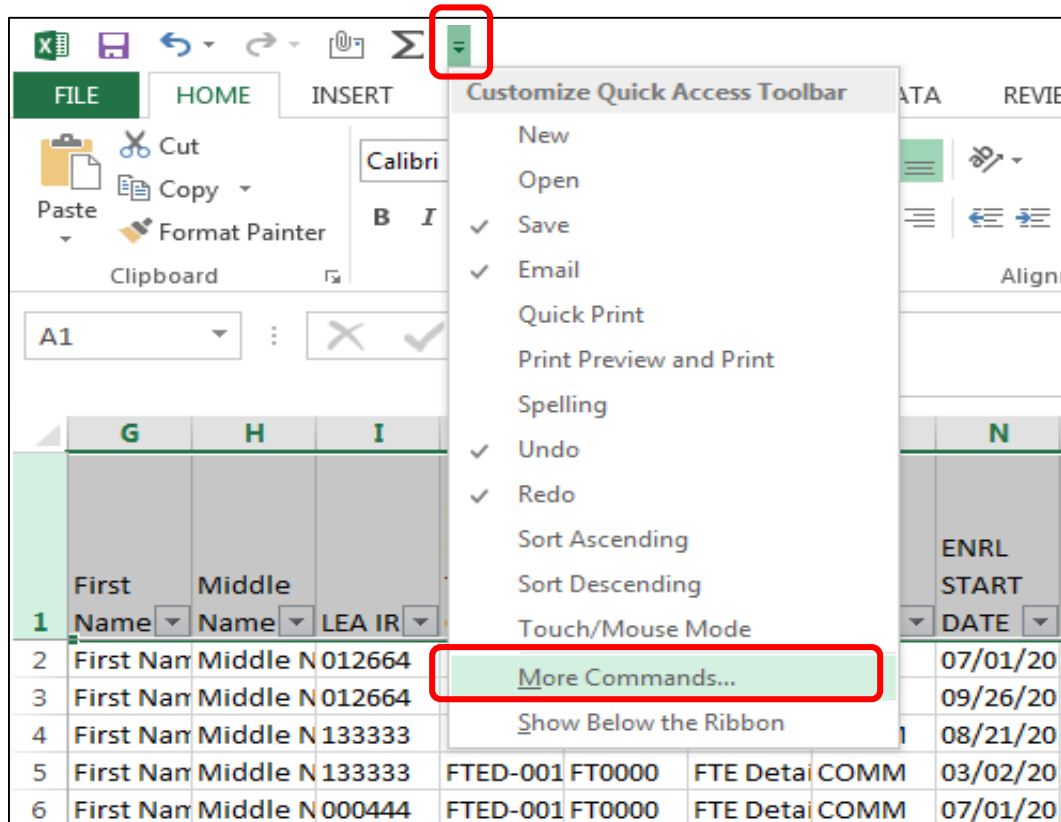
In the "Choose commands from" dropdown, select "Macros"

Make the Macro a Quick Link

Highlight your macro from the list and click "Add"
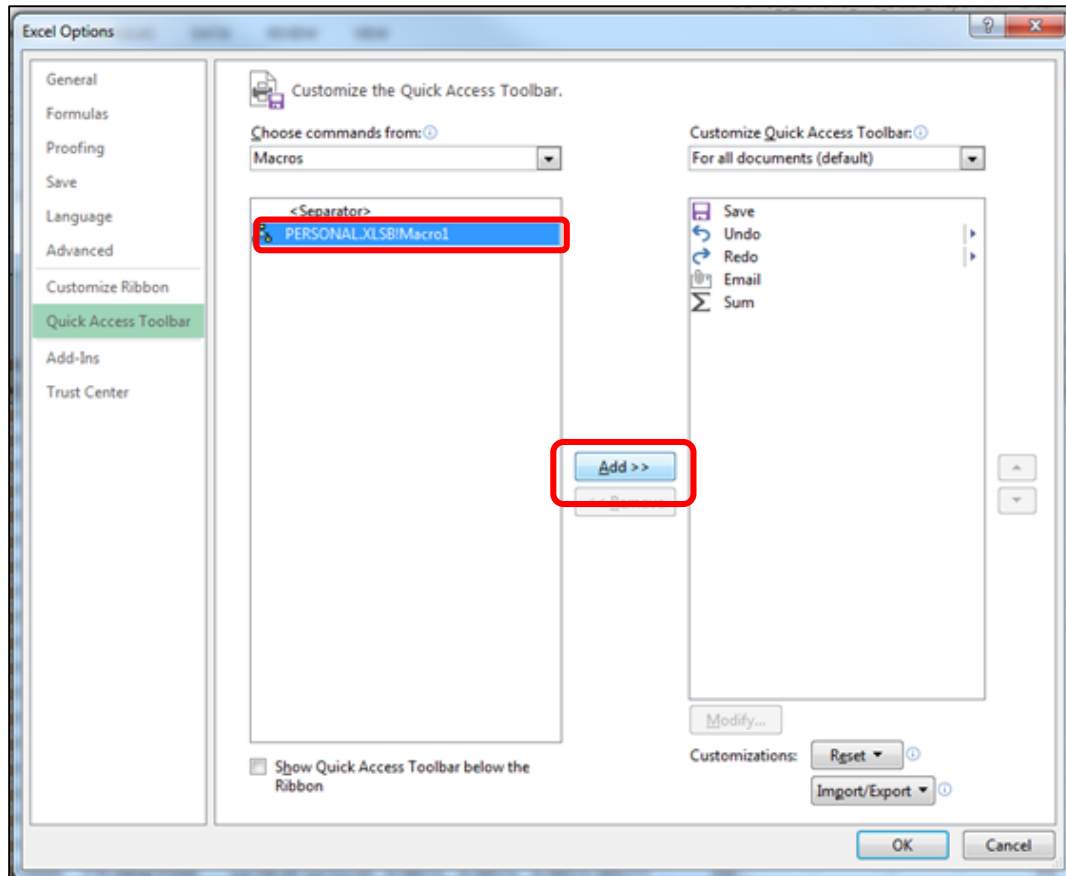
The macro will move to the list on the right. While it is highlighted, select "Modify" and choose an icon that you like. Click Ok and Ok.

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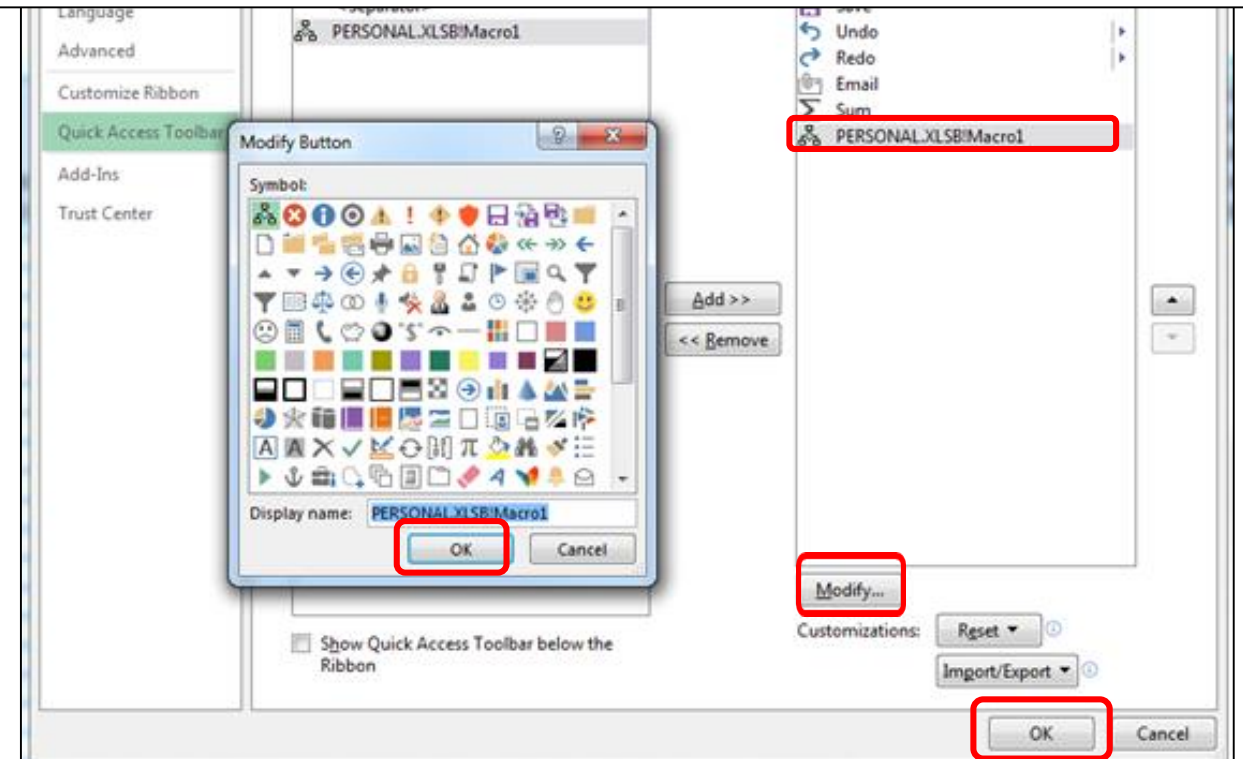
Quick Link

New Quick Link now appears
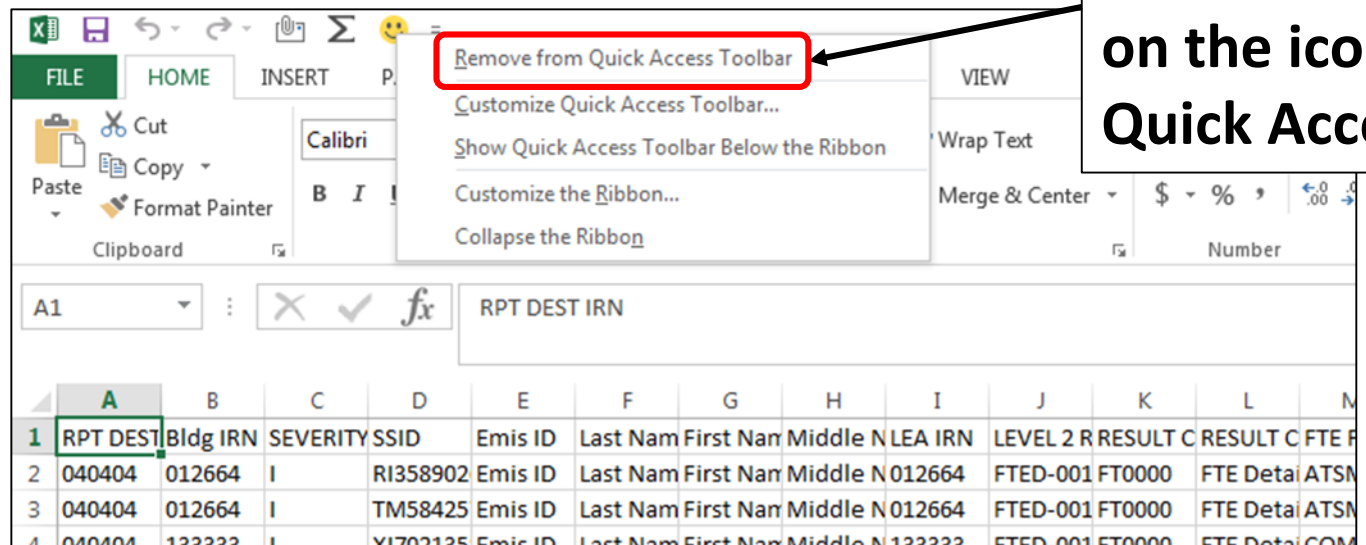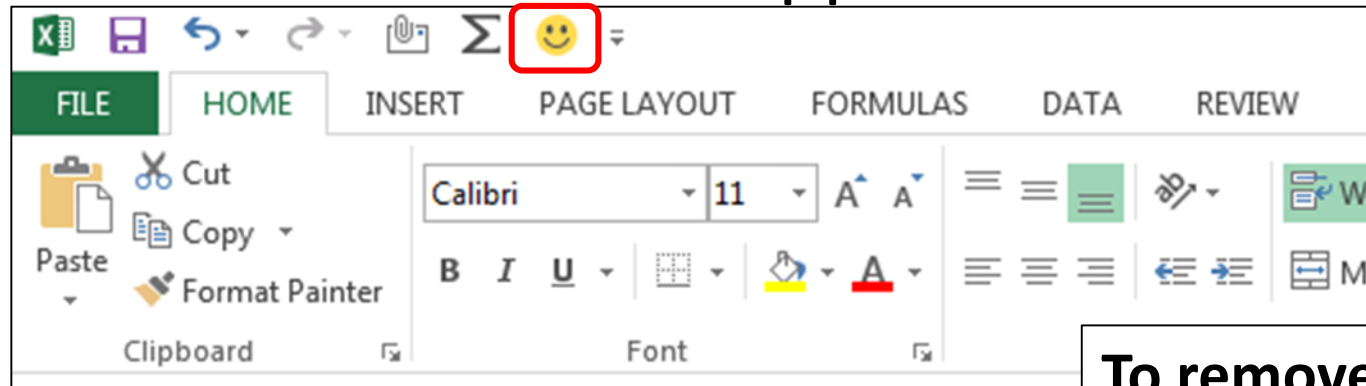
To remove the Quick Link, right click on the icon and select "Remove from Quick Access Toolbar"

Save the Macro

- You can choose to save or not save your spreadsheet
- A second prompt will ask if you want to save the changes made to your Personal Macro Workbook
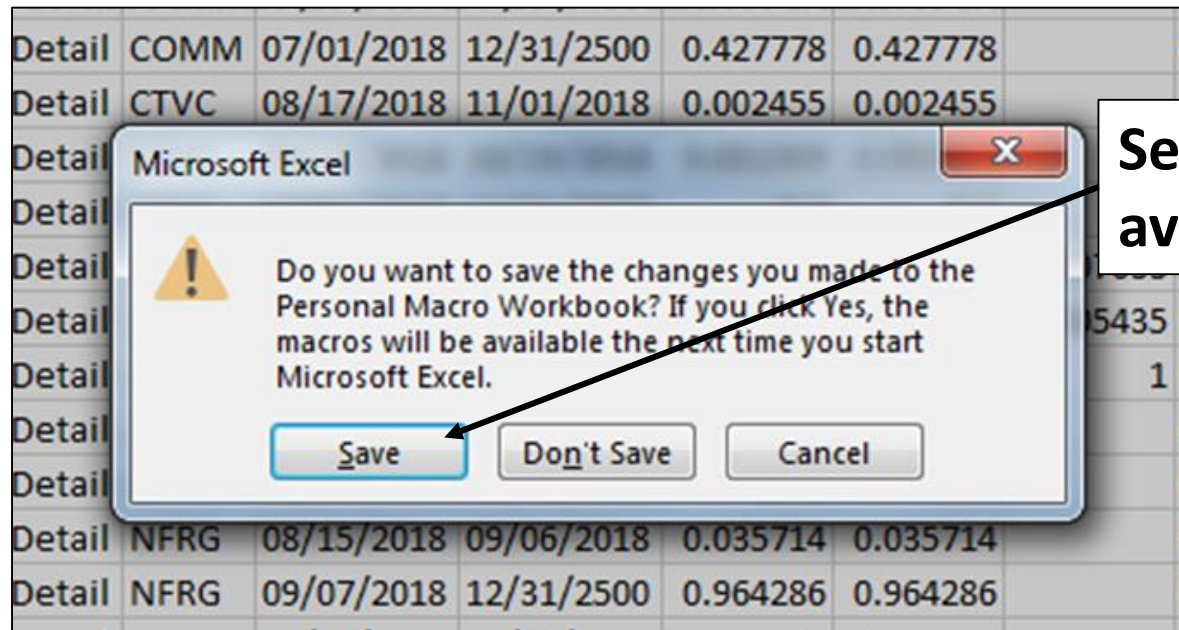
Select Save so that the macro will be available to use on future spreadsheets

Delete a Macro

Once a Macro is created a few extra steps are needed to delete it if needed

From a new or existing spreadsheet select "Unhide" from the View tab

In the Unhide prompt with PERSONAL.XLSB selected, click OK

Delete a Macro, cont'd

A blank spreadsheet named PERSONAL.XLSB will open
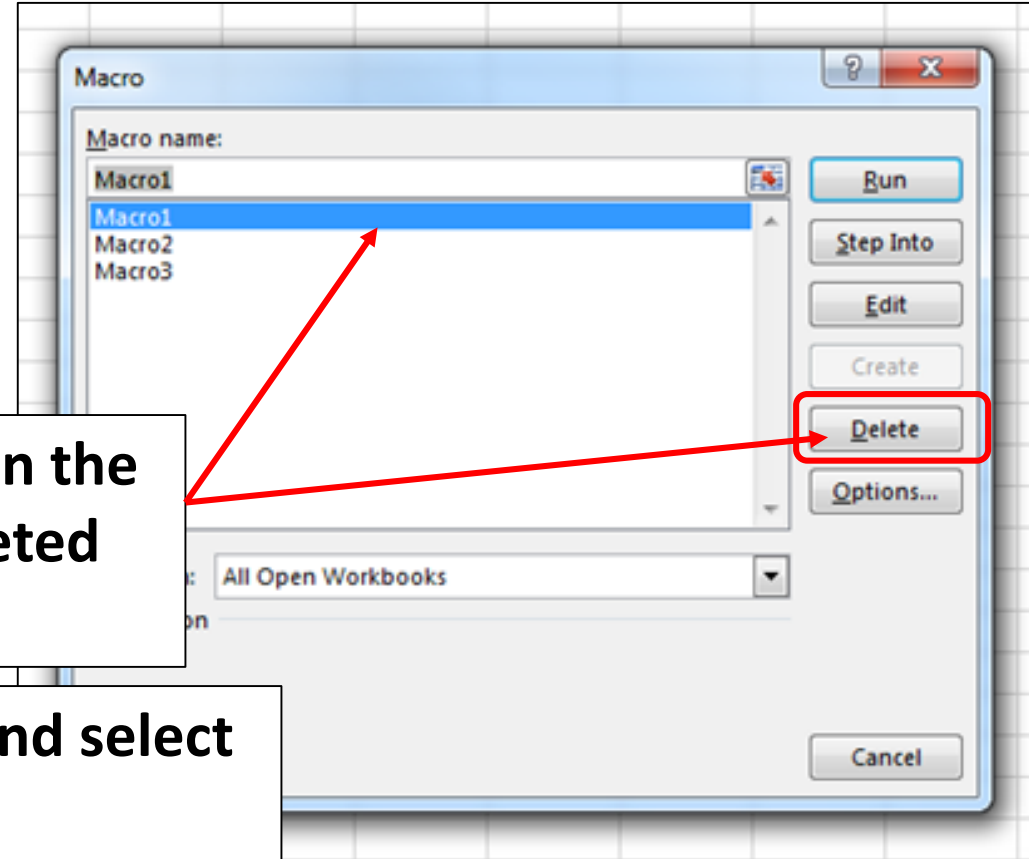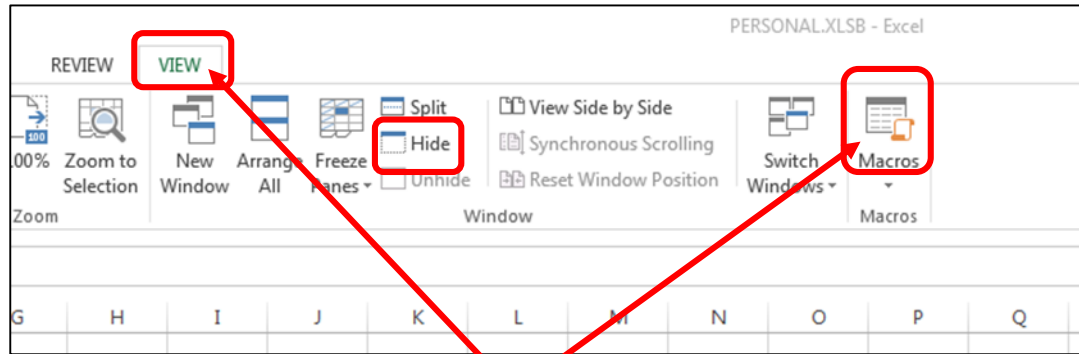
Select "Macros" from the View tab, then in the Macro prompt select the macro to be deleted select "delete"

When finished, close the Macro prompt and select "Hide" and the PERSONAL.XLSB will close

Quick Check

Macros are a quick way to turn a multi-step process in Excel into one click. Creating a quick link macro does not embed the macro into the spreadsheet. This macro is for use on the machine where it is created.

- Are you able to record and save your macro?

- Can you think of other instances where a macro can save time?

- Are you able to find and manage your macros?

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Calendar Data Verification

Calendar Display Report & Exceptions

- Calendar Display Report
  - Preview/Review report in the data collector
  - Separate calendars for each unique combination of District IRN, Building IRN, Grade Level, and Attendance Pattern
- Each day in session will display total student hours
- Exceptions will show attribute name with total student hours
- Using Excel, we can use this report to verify all exceptions have been entered

Calendar Display Report

Calendar Collection - Final (FY19)

Submission Number 1 (attempt 1), LEA:

Select the options and click on the Generate Preview link to create the preview.

Last Prepared: Yesterday at 02:32:59 PM

Preview Types
- ☑ Calendar Display
- ☑ Detail

Output Options

Zip File: ☐ Download file as a compressed .zip (for faster downloads)

File Format: ○ HTML
            ● CSV

Include in CSV files: ● Data only
            ○ Data and Fatal exceptions
            ○ Data and All exceptions

Generate Preview

> **From the Collection Request Tab, Calendar Collection, select "Preview Prepared Data" or "Submission data"**

> **Generate Preview/Review Data Open Calendar_Display.csv**

File	Submission 1				Sub 0
	Valid	Invalid	Total	|	Valid
Calendar_Display.csv			532	|	
Excluded_Records.csv			0	|	
Grade_Schedule_Record_(DL).csv	7	0	7	|	0
Organization_General_Information_Record_(DN).csv	218	0	218	|	0
Total counts:	225	0	757		

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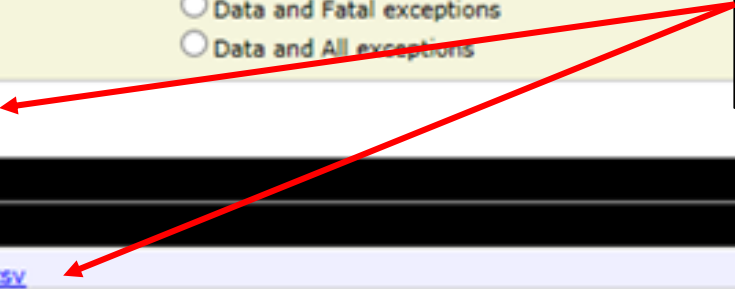
Format the Report

Prepare the report by running the macro we created in the last section, then remove filters

	A	B	C	D	E	F	G	H	I
1	Calendar For: Dist-Bldg-Grade-AP	Row Number	Month	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
2	054321-000001-**-**	01	Jul-18						
3	054321-000001-**-**	02		01	02	03	04	05	06
4	054321-000001-**-**	03		08	09	10	11	12	13
5	054321-000001-**-**	04		15	16	17	18	19	20
6	054321-000001-**-**	05		22	23	24	25	26	27
7	054321-000001-**-**	06		29	30	31			
8	054321-000001-**-**	07	Aug-18						
9	054321-000001-**-**	08					01	02	03
10	054321-000001-**-**	09		05	06	07	08	09	10
11	054321-000001-**-**	10		12	13	14	15	16	17
12	054321-000001-**-**	11		19	20	21	22	23	24
13	054321-000001-**-**	12		26	27	28	29	30	31
14	054321-000001-**-**	13	Sep-18						
15	054321-000001-**-**	14							

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Report Contents

- Column A contains the calendar name, aka attendance pattern
- Column B contains the row number
  - The first 76 rows each contain one week on the calendar
  - Calendars can contain two additional rows for parent-teacher conference and professional development hours
- Column C contains the month and year
- Columns D-I contain the day of the week and the date of the month

	A	B	C	D	E	F	G	H	I	J	K
1	Calendar For: Dist-Bldg-Grade-AP	Row Number	Month	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Stud Sess Days
2	054321-000001-**-**	1	18-Jul								
3	054321-000001-**-**	2		1	2	3	4	5		6	7
4	054321-000001-**-**	3		8	9	10	11	12		13	14
5	054321-000001-**-**	4		15	16	17	18	19		20	21
6	054321-000001-**-**	5		22	23	24	25	26		27	28

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Formatting

- Column C is formatted to display the month and year only on the first row of the month
- We are going to fill this in for the rest of the rows to make it easier to read
- Select cell C2
- Scroll to the very bottom the Column C
- Hold SHIFT and select the last cell in the report in column C

Formatting, cont'd

- From the Home tab, click on "Find and Select"

- Choose "Go To Special"

- From the Go To Special prompt, click on the radio button for "Blanks" and then click OK

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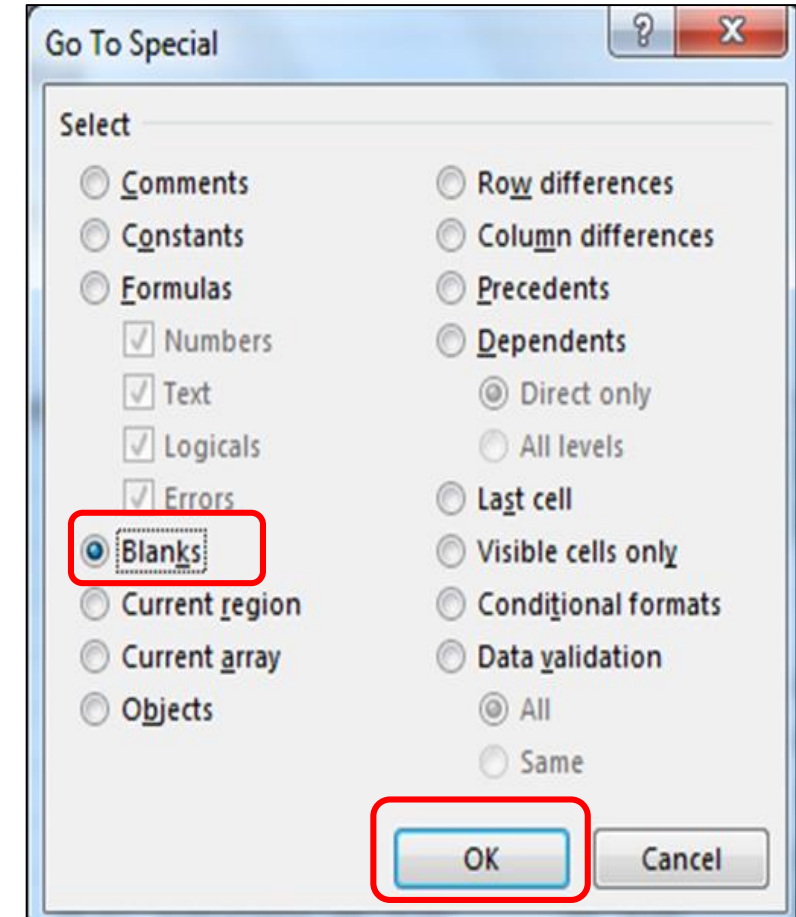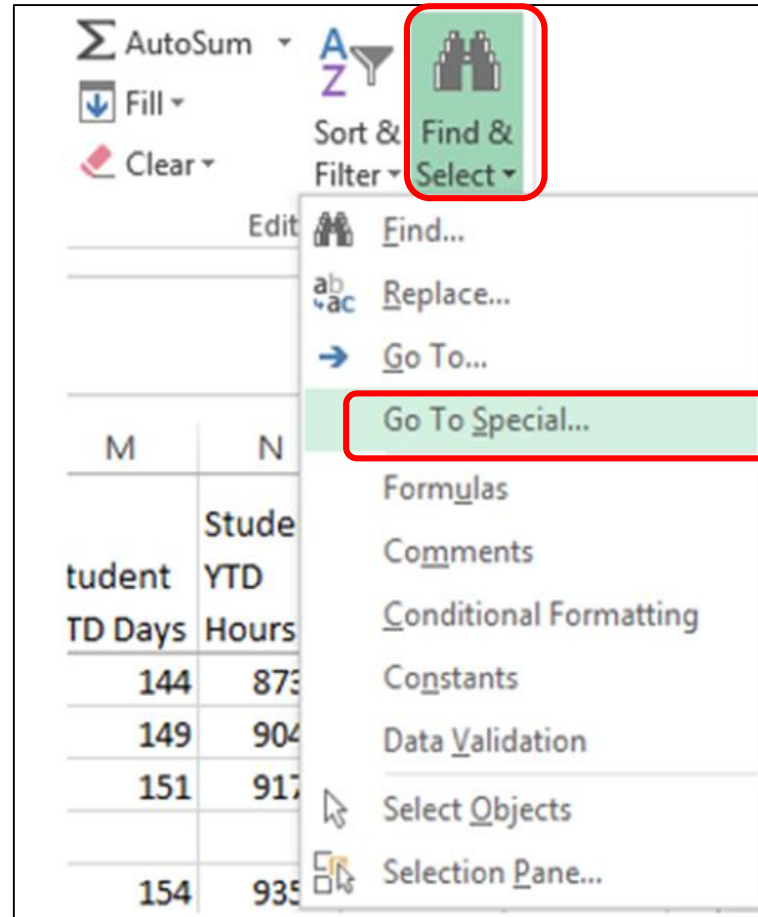
Formatting, cont'd

- Your spreadsheet should show Column C as still highlighted, but the cells with actual data are not highlighted
- Make sure the sheet remains like this for the Fill-Down process to work correctly

It is correct that cell C3 is blank

Formatting, cont'd

- Your cursor will be in cell C3, do not click into the cell

- Type an equal sign and then press the up Arrow Key

- Hold down the Control (Ctrl) Key and press the Enter key

- This will fill in the blanks with the value found above it, so now every row will reflect the Month/Year on your Calendar

Sort the Report

- From the Data tab, select Sort
- Verify that "My Data has headers" is checked
- Sort by Row Number and click OK

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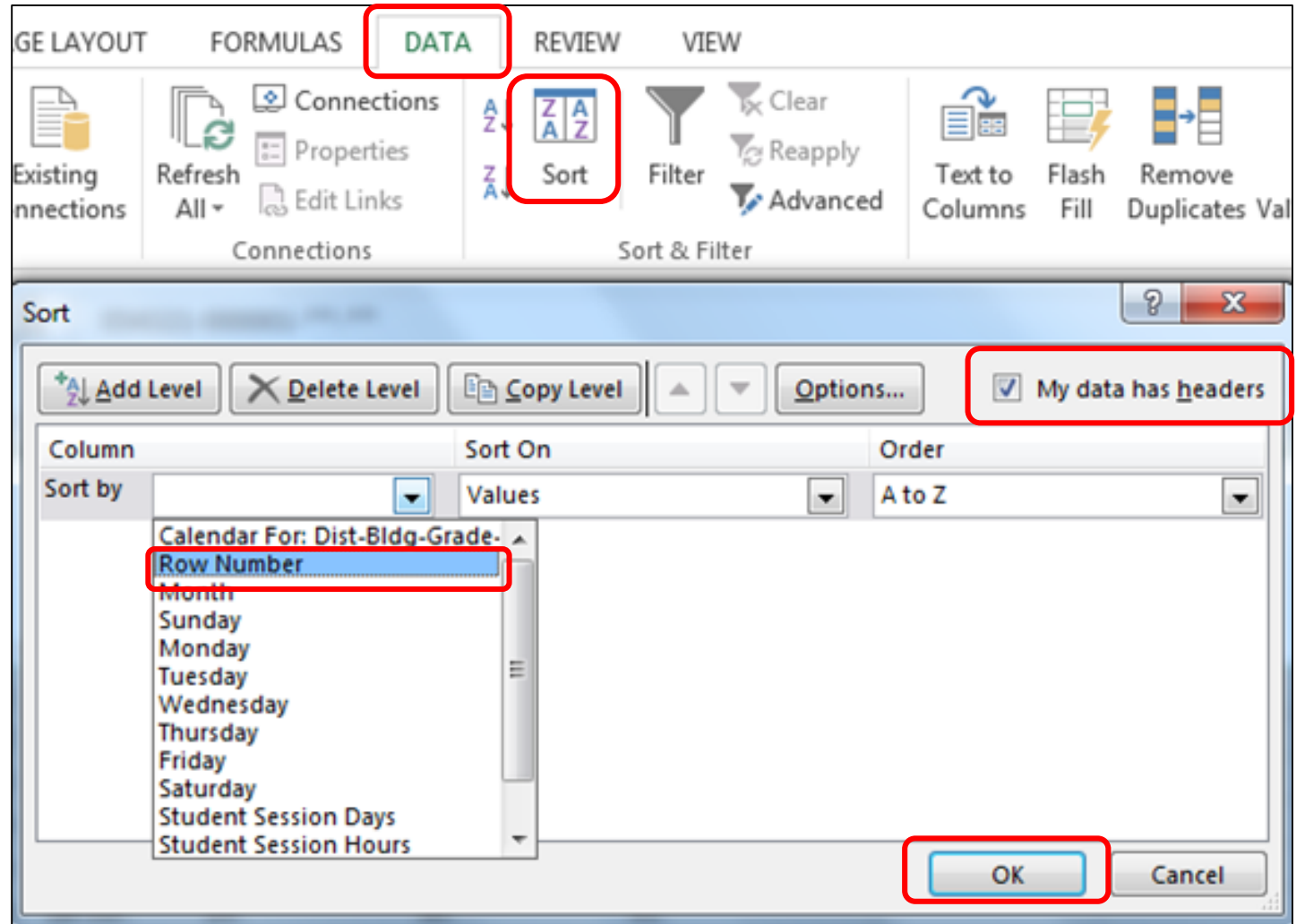
Verify Exceptions cont'd

- View the same row for each calendar type together
- Verify all day values for all appropriate attendance patterns

170	054321-000001-**-**	22	Oct-18	07	08 - 0.00 (PDO)	09 - 6.20	10 - 4.20 (PHS)	11 - 6.20	12 - 6.20
171	054321-000002-**-**	22	Oct-18	07	08 - 0.00 (PDO)	09 - 6.20	10 - 4.20 (PHS)	11 - 6.20	12 - 6.20
172	054321-000002-12-**	22	Oct-18	07	08 - 0.00 (PDO)	09 - 6.20	10 - 4.20 (PHS)	11 - 6.20	12 - 6.20
173	054321-000002-12-**	22	Oct-18	07	08 - 0.00 (PDO)	09 - 6.25	10 - 6.25	11 - 6.25	12 - 6.25
174	054321-000003-KG-**	22	Oct-18	07	08 - 0.00 (PDO)	09 - 6.25	10 - 6.25	11 - 6.25	12 - 6.25
175	054321-000003-PS-A1	22	Oct-18	07	08 - 0.00 (PDO)	09 - 5.00	10 - 0.00 (PDO)	11 - 5.00	12 - 0.00
176	054321-000003-PS-P2	22	Oct-18	07	08 - 0.00 (PDO)	09 - 5.00	10 - 5.00	11 - 5.00	12 - 0.00
177	054321-000003-**-**	22	Oct-18	07	08 - 0.00 (PDO)	09 - 6.20	10 - 4.20 (PHS)	11 - 6.20	12 - 6.20

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Quick Check

Formatting and sorting the Calendar Display report can bring data issues to the surface. Districts that have many calendars to maintain throughout the school year will find this process very effective in verifying that all calendar hours for each day are being reported correctly.

- Are you able to download and prepare the Calendar Display Report?

- Are you able to verify that every calendar day contains correct values across all of your calendars?

- How often will you repeat this process throughout the year to verify that calendar data is being updated?

Create a Dropdown List in Excel

Gathering Data Using Excel

- Accurate and complete EMIS reporting starts with effective data gathering
- Providing district personnel a data collection form can improve data from the source
- Some examples of data collection processes
  - Reading Diagnostic results
  - Score Not Reported reasons
  - Staff Data
  - Retention Data
  - Graduation Data

Create a Data Collection Form

In this example we will be creating a sheet for collecting reading diagnostic results

- Open Excel and create a blank worksheet

Click the Plus sign twice to generate two new sheets
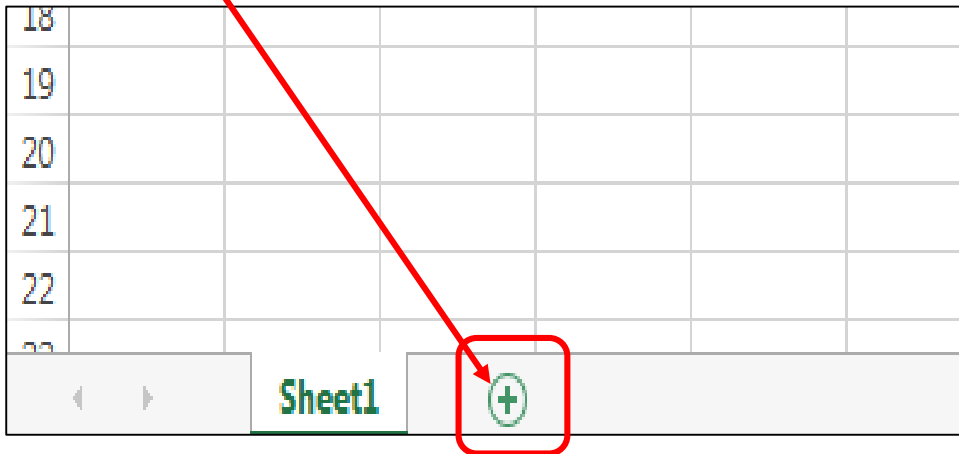
Right click and choose "Rename" on all three tabs
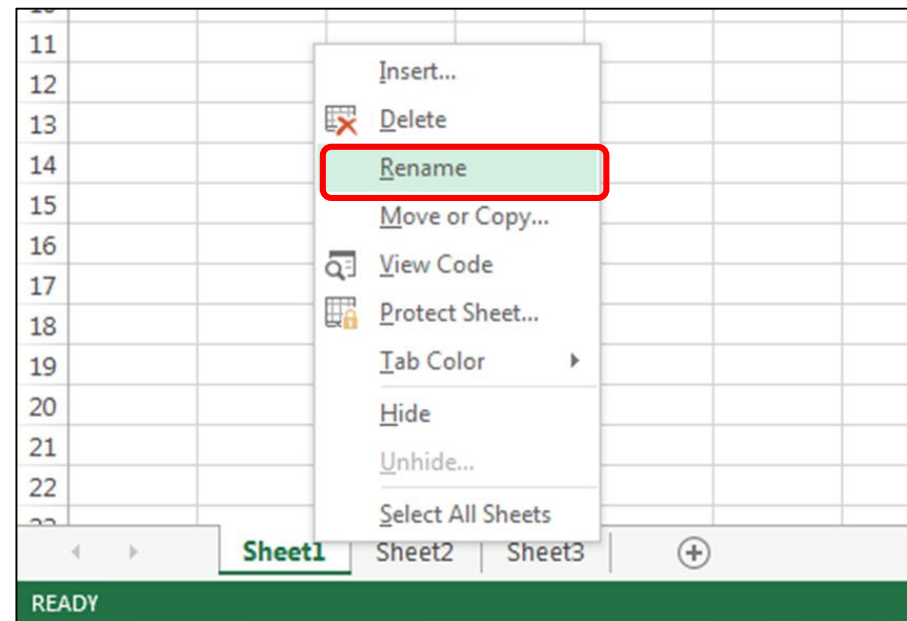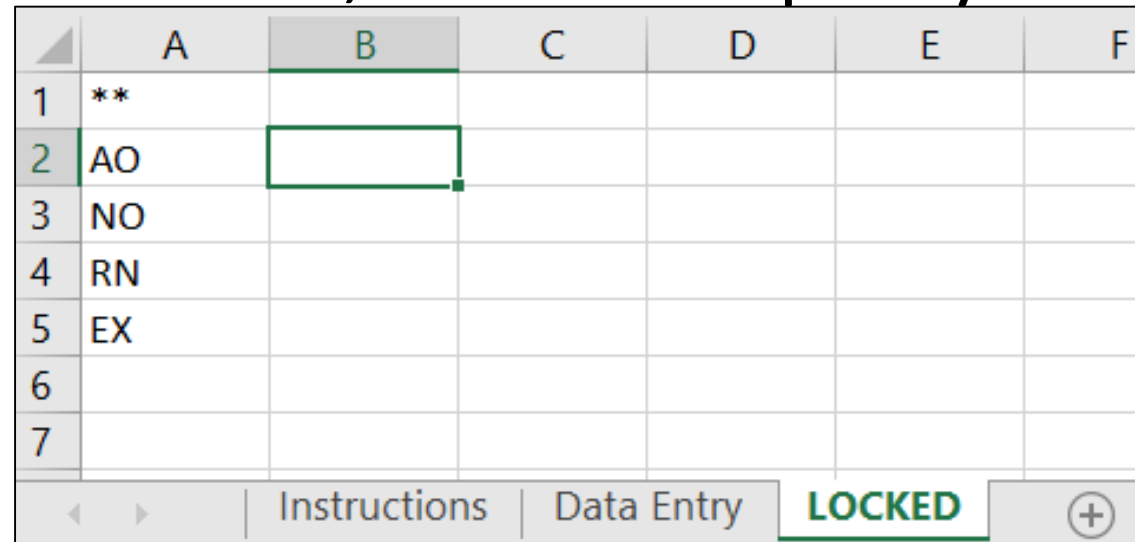
Specify Dropdown Options

- Rename each sheet
  - Sheet 1 - Instructions
  - Sheet 2 - Data Entry
  - Sheet 3 - LOCKED
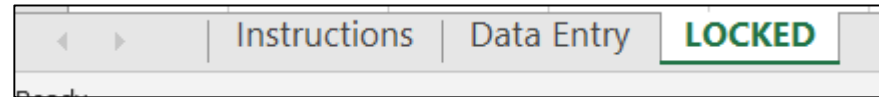
- Start with the "LOCKED" sheet, where we specify the dropdown options
  - In Cell A1 Type: **
  - In Cell A2 Type: AO
  - In Cell A3 Type: NO
  - In Cell A4 Type: RN
  - In Cell A5 Type: EX

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Protect Drop Down Options
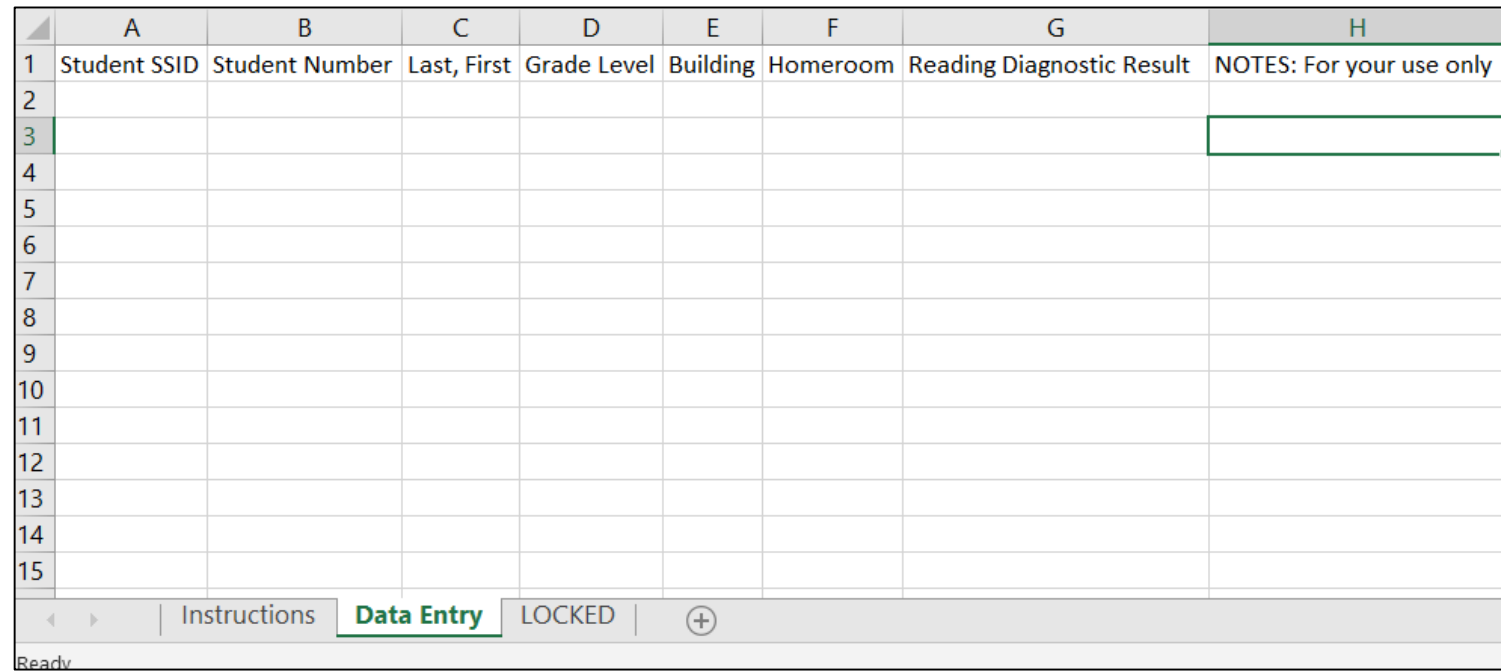
- Right click on the LOCKED Sheet name

- Choose "Protect Sheet…"

- Choose the top two options

- Specify a password if desired

- Click OK

- The sheet is now protected

Create Data Entry Sheet

Select the data entry sheet

- Enter the data to collect
- For this example we will create the following headers
  - SSID
  - Student Number
  - Last, First
  - Grade Level
  - Building
  - Reading Diagnostic Result
  - Notes: For your use only

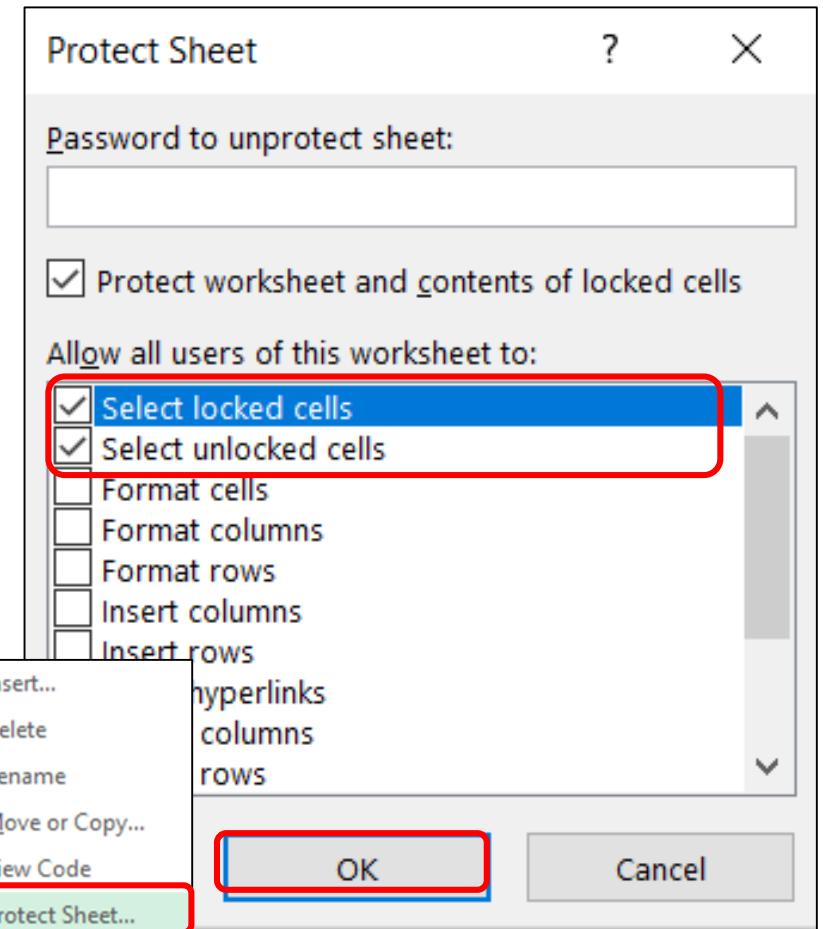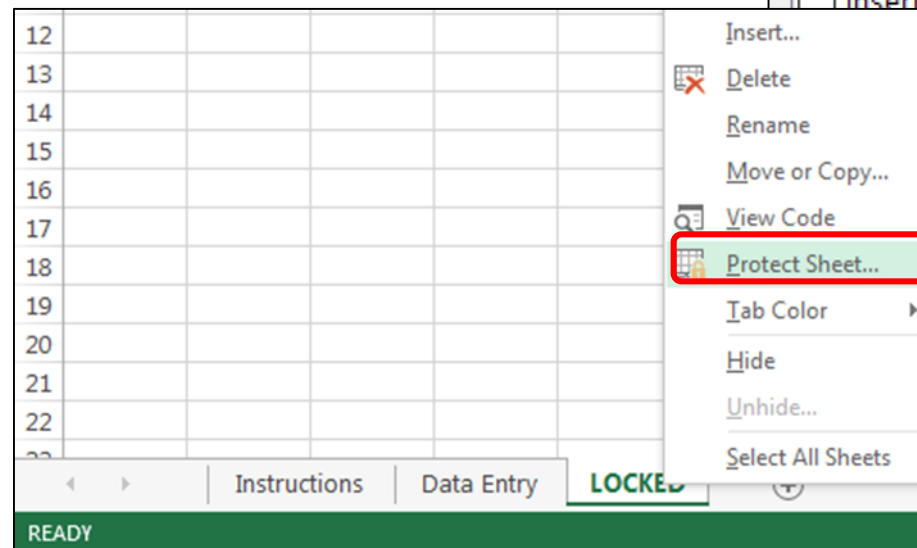|	A	B	C	D	E	F	G	H
1	Student SSID	Student Number	Last, First	Grade Level	Building	Homeroom	Reading Diagnostic Result	NOTES: For your use only
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Instructions | **Data Entry** | LOCKED

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If desired, populate student data

Generate an export from your SIS for the students and data you would like to collect the diagnostic result

- Search Criteria example: All K-3 students with a district relationship of 1
- Export Fields example - SSID, Student Number, Last First, Grade Level, Building, Homeroom

Select the columns and rows of your spreadsheet

	A	B	C	D	E	F	G	H	I
1	Student SSID	Student Number	Last, First	Grade Level	Building	Homeroom	Reading Diagnostic Result	NOTES: For your use only	
2	ZZ1234567	123456789	Doe, Jane	3	Cherry Hill	Smith			
3	ZZ1234568	123456790	Brown, Steven	2	West	Darst			
4	ZZ1234569	123456791	Stone, Beth	1	Cherry Hill	White			
5	ZZ1234570	123456792	Smith, Jackson	KG	West	Slate			
6									
7									

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Format Data Collection

With the cells on the spreadsheet selected

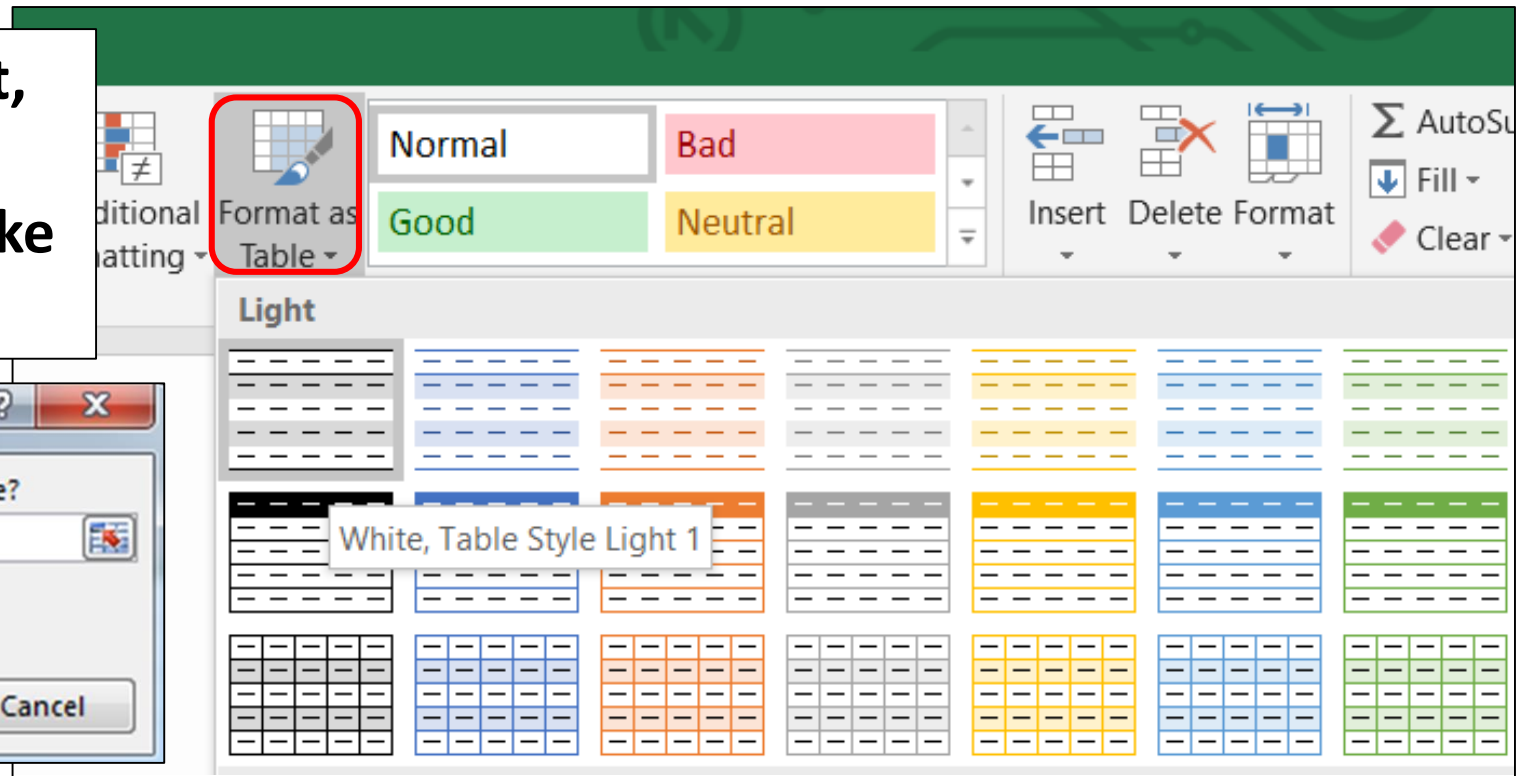**From the Home tab select, "Format as Table" button to choose a format to make for easier viewing**
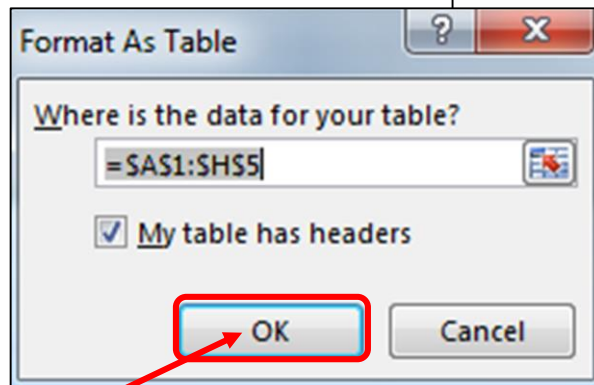
In the Format as Table Prompt, click OK

Format Data Collection

Your data entry sheet should look something like this

	A	B	C	D	E	F	G	H
1	Student SSID	Student Number	Last, First	Grade Level	Building	Homeroom	Reading Diagnostic Result	NOTES: For your use only
2	ZZ1234567	123456789	Doe, Jane	3	Cherry Hill	Smith		
3	ZZ1234568	123456790	Brown, Steven	2	West	Darst		
4	ZZ1234569	123456791	Stone, Beth	1	Cherry Hill	White		
5	ZZ1234570	123456792	Smith, Jackson	KG	West	Slate		

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Populate Drop-Down Options

Place your cursor in cell G2

- From the Data tab, choose "Data Validation", and "Data Validation…"

Place cursor here first

Specify Drop-Down

- From the Data Validation prompt, under "Allow", select "List"
- For "Source:" first click your cursor into the prompt
- Next, navigate to the "LOCKED" sheet and select Cells A1-A5
- Click OK

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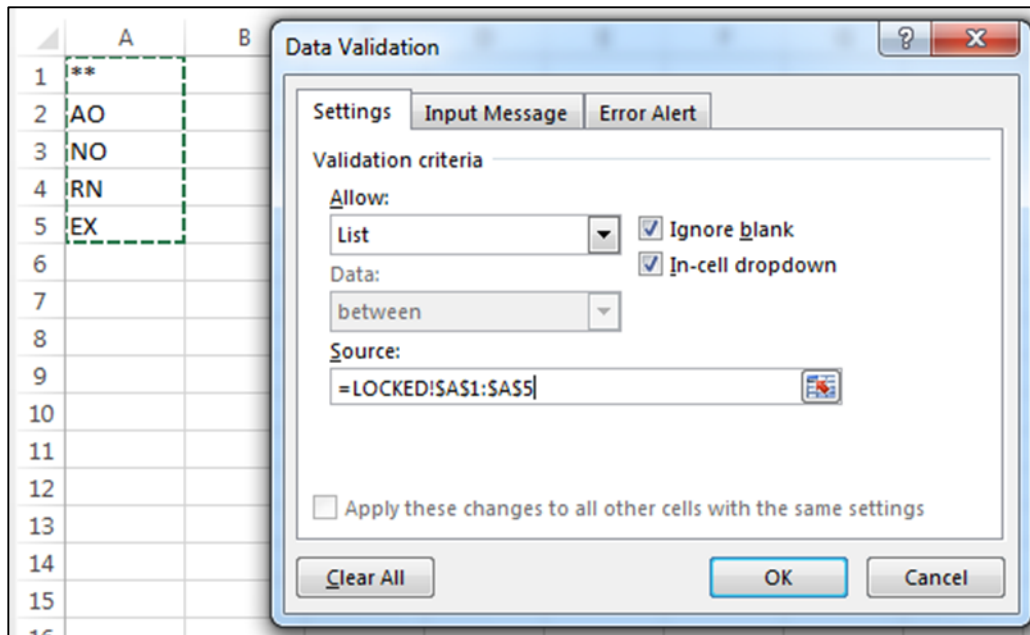
Add Drop Down to all Cells

- See the arrow appear when to the right of cell G2
- Click the arrow and the drop down options appear

- Drag the bottom right corner of the cell to populate the formula for every cell below G2 to the end of the list of students

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Put the Workbook into use

- Use the "Instructions" sheet to direct data owners as to the correct way to complete the "Data Entry" sheet

- Save the workbook and distribute it to appropriate district data owners
  - Be certain to include a deadline for data to be returned

- Use the completed workbook to update data in your SIS, and print for records

- Submit data to EMIS and return appropriate reports back to the data owner for verification

Quick Check

Using an Excel spreadsheet can be a efficient way to collect data from district personnel. By creating a spreadsheet with instructions and drop downs of valid options, data collected will be much more accurate and complete.

- What is the current data collection process in your district?

- Are you able to create pre-populated drop down lists?

- How could using drop down lists help you collect data?

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FTE Detail Report Subtotaling

FTE Detail Report Subtotaling

Subtotal the FTE Detail Report

- Sort by SSID, then by Enrollment Start Date

From the Data Tab choose Sort

Sort by SSID, then select "Add Level", then sort by "ENRL START DATE", then select "OK"

Sort Warning

This Sort Warning is generated because the ENRL START DATE column contains some numbers that are formatted as text
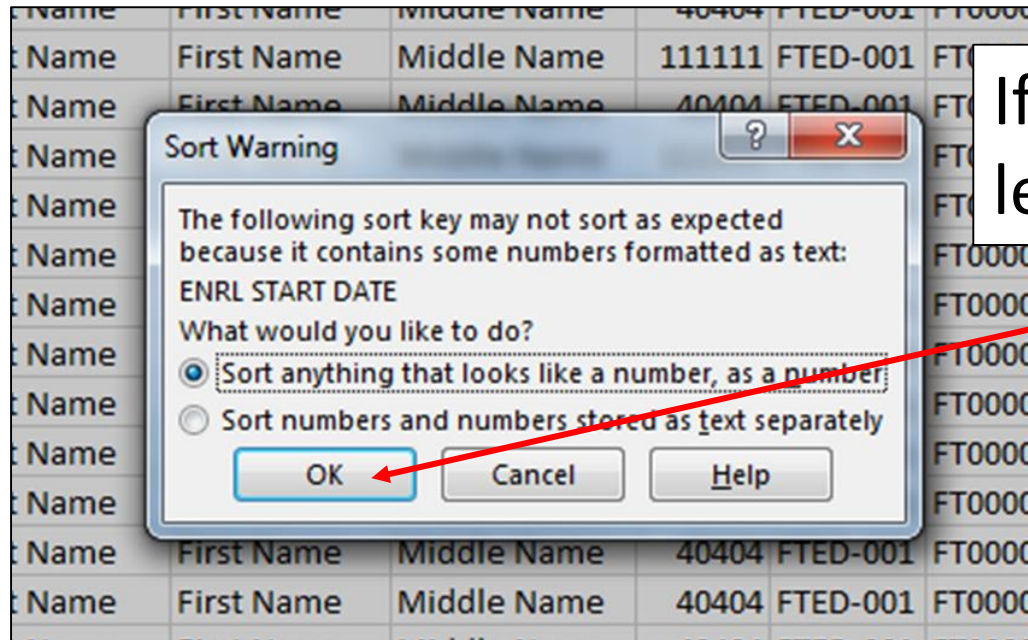
If a Sort Warning is generated, leave as defaulted and select "OK"

Apply Subtotals
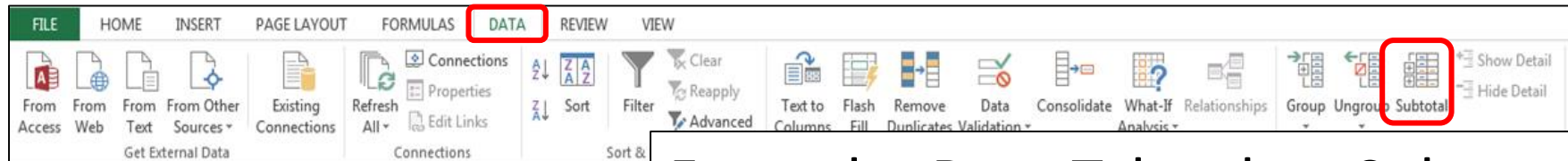
From the Data Tab select Subtotal

In the Subtotal Prompt select
1. "At each change in:" SSID
2. "Use function:" Sum
3. "Add subtotal to:" ORIG FTE and ADJSTD FTE and ADJSTD SPECED CAT FTE
4. Select "OK"

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FTE Detail Report Subtotaled

This student's Original FTE, Adjusted FTE, and Special Education FTE, have been subtotaled and appear chronological order

RPT DEST IRN	Bldg IRN	CODE	SSID	Emis ID	Last Name	First Name	Middle Name	LEA IRN	CODE	CODE	DESCR	CODE	DATE	DATE	ORIG FTE	ADJSTD FTE	SPECED CAT FTE	LEGAL DI
40404	101010	F	AF5330185	EMIS ID	Last Name	First Name	Middle Name	40404	FTED-001	FT0000	FTE Detail	NFRG	08/01/2017	12/31/2500	1	0		222222
			AF5330185 Total												1	0	0	
40404	101010	F	AF9794373	EMIS ID	Last Name	First Name	Middle Name	40404	FTED-001	FT0000	FTE Detail	NFRG	07/01/2017	12/11/2017	0.376623	0		40404
40404	101010	I	AF9794373	EMIS ID	Last Name	First Name	Middle Name	111111	FTED-001	FT0000	FTE Detail	PSET	12/12/2017	12/31/2500	0.612676	0.612676	0.612676	444444
40404	101010	C	AF9794373	EMIS ID	Last Name	First Name	Middle Name	40404	FTED-001	FT0000	FTE Detail	PSRD	12/12/2017	12/31/2500	0.623377	0.387324	0.387324	40404
			AF9794373 Total												1.612676	1	1	
40404	101010	I	AG3444498	EMIS ID	Last Name	First Name	Middle Name	111111	FTED-001	FT0000	FTE Detail	SPCO	07/01/2017	12/31/2500	1	1	1	444444
			AG3444498 Total												1	1	1	
40404	101010	I	IS7050894	EMIS ID	Last Name	First Name	Middle Name	40404	FTED-001	FT0000	FTE Detail	OPDD	07/01/2017	09/03/2017	0.020547	0.020547		333333
40404	101010	I	IS7050894	EMIS ID	Last Name	First Name	Middle Name	40404	FTED-001	FT0000	FTE Detail	OPDD	09/04/2017	12/31/2500	0.979453	0.979453		333333
			IS7050894 Total												1	1	0	
40404	101010	I	IS7998181	EMIS ID	Last Name	First Name	Middle Name	111111	FTED-001	FT0000	FTE Detail	COMM	10/17/2017	12/31/2500	0.782609	0.782609		444444
			IS7998181 Total												0.782609	0.782609	0	
40404	101010	I	KJ3857778	EMIS ID	Last Name	First Name	Middle Name	40404	FTED-001	FT0000	FTE Detail	OPDD	07/01/2017	12/31/2500	1	1		333333

Undo Subtotals

To undo subtotals select "Subtotal" and then "Remove All"

Quick Check

Subtotaling the FTE Detail Report provides a format for easier analysis of the data. Since many students have multiple FTEs calculated, using Excel to sum by student will allow the detail to be available while providing subtotals below each student.

- Are there students with Adjusted or Special Education FTEs that are less than the Original FTE?

- Are you using this report with your FTE Adjustment report to identify reasons for the adjustments?

- Are you saving your reports between reviews?

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Summary

- Basic Excel techniques can be very useful when troubleshooting
  - EMIS data in the Student Information System
  - EMIS reports
  - preview/review files
- These techniques should be part of your everyday practices

Resources

- Microsoft Excel Help within Excel "?" Articles and Videos
- Google it
- Microsoft Excel Classes
- Your ITC

Questions?