# Getting to Know Google Sheets

# Interface

Google Sheets is a spreadsheet app similar to Microsoft Excel. It is much simpler to learn than Excel. While Google Sheets does not have all of the features of Excel, it still has many useful tools along with the capacity for multiple editors and comments.
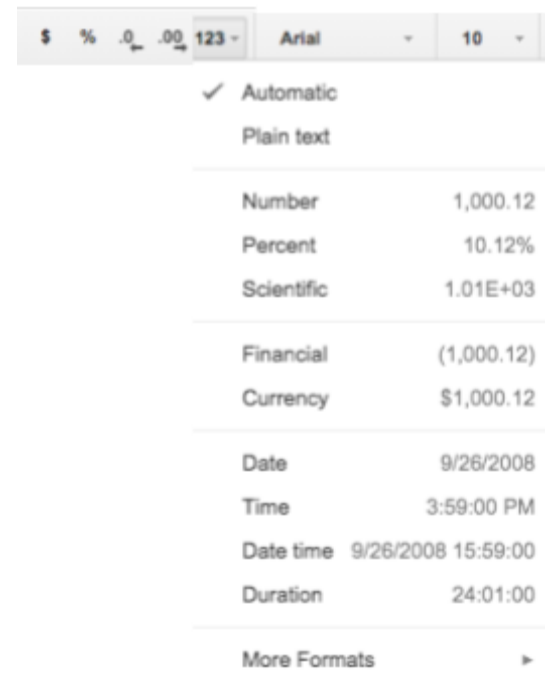


# Google Sheets Toolbar Features

The Google Sheets toolbar is similar to all other Google Docs toolbars but has many icons that apply specifically to the tasks required of a spreadsheet.

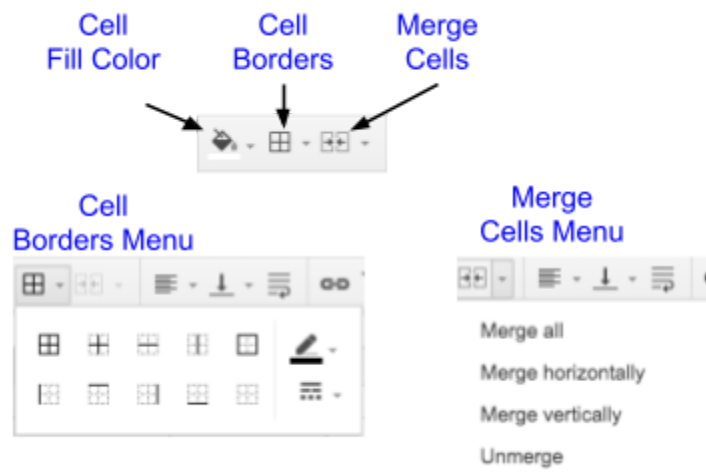**Number formatting options:**
- Currency
- Percent
- Decrease decimal places
- Increase decimal places
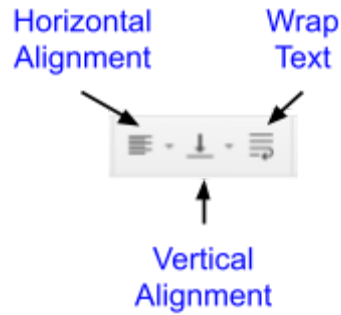- More number formatting options



**Cell formatting options:**
- Cell fill color
- Cell borders
  - Line color
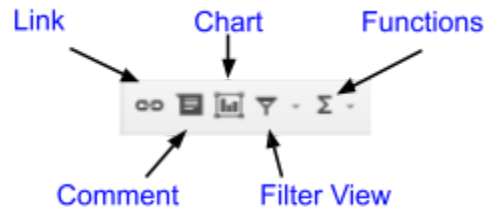  - Line style
- Merge cell options

**Text alignment options:**
- Horizontal alignment
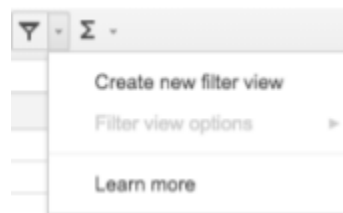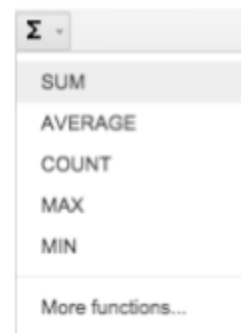- Vertical alignment
- Wrap text in cell

Horizontal Alignment

Wrap Text

Vertical Alignment

**Insert options:**
- Insert Link
- Insert Comment
- Insert Chart
- Filter view
- Functions

Link    Chart    Functions

Comment    Filter View

Filter View Menu

Create new filter view

Filter view options

Learn more

Functions Menu

SUM

AVERAGE

COUNT

MAX

MIN

More functions...

# Google Sheets Features

1. Clicking the **Edit** menu brings up the following features:

- Undo
- Redo
- Cut
- Copy
- Paste
- Paste special- used to paste with formatting options, etc.
- Find and replace- find text within the spreadsheet
- Delete values- delete the cell's contents
- Delete (row 1)- delete the row

Edit    View    Insert    Format    Data

Undo          ⌘Z

Redo          ⌘Y

Cut           ⌘X

Copy          ⌘C

Paste         ⌘V

Paste special        ▸

Find and replace...    ⌘+Shift+H

Delete values

Delete **row 1**

Delete **column A**

Clear notes

- Delete (column A)- delete the column
- Clear notes- clear the notes attached to a cell

2. Clicking the **View** menu brings up the following features:

- Freeze- freezes a certain row or column for easy scrolling
- Gridlines- show/hide gridlines for cells (only boundaries, not applied cell borders)
- Protected ranges- allows ranges of cells to be protected from editing when the Google Sheet is shared with other editors
- Formula bar- formula input below the toolbar
- All formulas- shows formulas in cells, not calculations
- Hidden sheets- show/hide sheets within the spreadsheet
- Compact controls- shows only menu and toolbar
- Full screen- shows only the spreadsheet, no menus or toolbar

| View | Insert | Format | Data | Tools |
|------|--------|--------|------|-------|
| Freeze | | | | ▸ |
| ✓ Gridlines | | | | |
| Protected ranges | | | | |
| ✓ Formula bar | | | | |
| All formulas | | | | Ctrl+` |
| Hidden sheets | | | | ▸ |
| Compact controls | | | | Ctrl+Shift+F |
| Full screen | | | | |

3. Clicking the **Insert** menu brings up the following features:

- Row above
- Row below
- Column left
- Column right
- New sheet
- Comment- add comments to cells
- Note- add notes to cells
- Function- insert a Function
- Chart
- Image
- Link
- Form- create a form (does NOT affect current sheet but creates a link to the form created and a new sheet with responses)
- Drawing- insert a repositionable drawing

| Insert | Format | Data | Tools |
|--------|--------|------|-------|
| Row **above** | | | |
| Row **below** | | | |
| Column **left** | | | |
| Column **right** | | | |
| New sheet | | | |
| Comment | | | ⌘+Option+M |
| Note | | | Shift+F2 |
| Σ Function | | | ▸ |
| Chart... | | | |
| Image... | | | |
| Link... | | | ⌘K |
| Form... | | | |
| Drawing... | | | |

4. Clicking the **Format** menu brings up the following options:

- Number- format the number in the cell(s)
- Font size- change font size
- Bold
- Italic
- Underline
- Strikethrough
- Align- horizontal and vertical alignment options
- Merge cells
- Text wrapping
- Conditional formatting- apply formatting to cells based on rules
- Alternating colors- color alternating rows
- Clear formatting- clear all formatting from the cell(s)
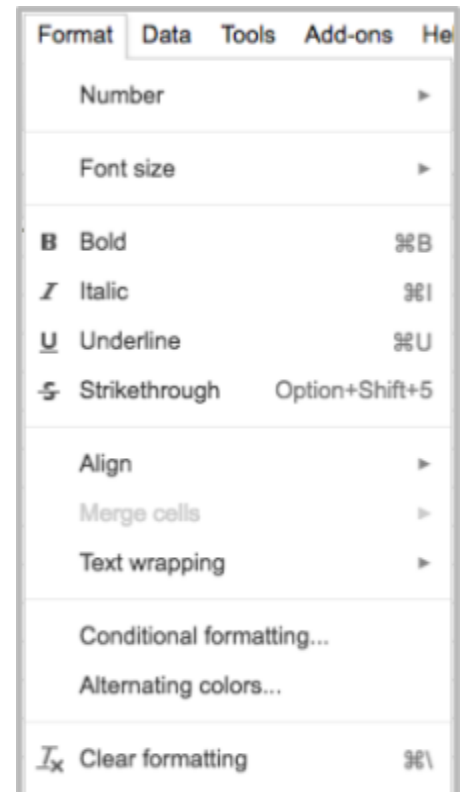
5. Clicking the **Data** menu brings up the following options:

- Sort sheet by column A, A-Z- A refers to the column name
- Sort sheet by column A, Z-A- A refers to the column name
- Sort range- specify a range of cells to sort
- Named ranges- label ranges with a name for ease of use
- Protected sheets and ranges- protect sheets and ranges from editing by collaborators
- Split text to columns- split text such as first and last name in one column into two columns, one for first, one for last
- Filter- filter data within a column by certain criteria
- Filter views- saved filter views
- Pivot table report
- Validation- restrict values in cells, show warnings, create a list to select from
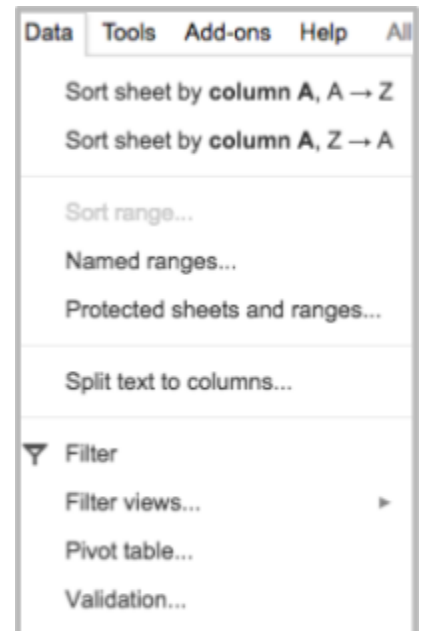
6. Clicking the **Tools** menu brings up the following options:

- Create a form- Links a form to current Google Sheets doc
- Script editor- Google Apps Script editor (ADVANCED)
- Spelling
- Enable autocomplete
- Notification rules- set notification for Sheets modifications
- Protect sheet- protect a sheet from modifications by editors
- Personal dictionary- add frequently misspelled words to autocorrect
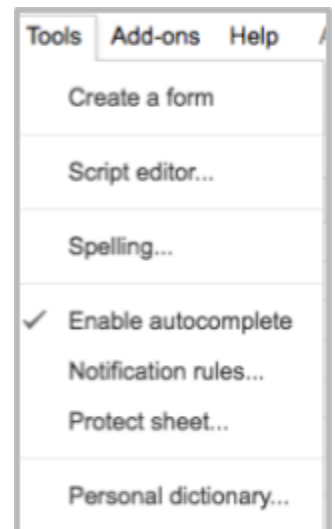
## Freezing Rows and Columns

You can freeze rows and columns in your spreadsheet to make it easier to scroll through data.  Freezing a top row with column headings will allow that top row to remain at the top while scrolling down through data. Freezing columns will allow you to scroll left and right through data while keeping the frozen columns at the left.

**To Freeze Rows, Columns or both:**

1. Click **View** from the menu bar

2. Click **Freeze**

3. Select row or columns to freeze and the number or location
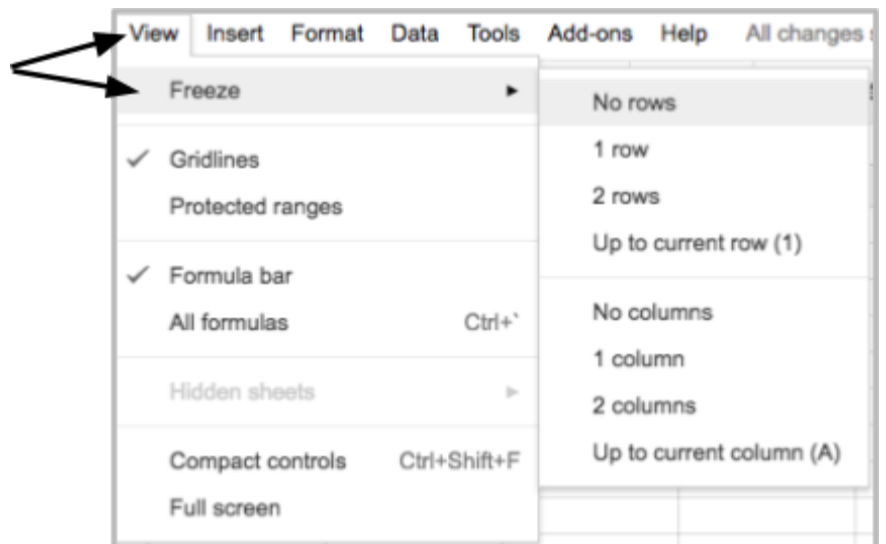
4. A **Row Freeze** will show as a darker grey line under the frozen row. A **Column Freeze** will show as a darker grey line to the right of the frozen column.

Frozen Column

Frozen Row

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Name | Timestamp | School | ELA | Math |
| 2 | Branden Lowrey | 8/25/2016 | FRG | 51.35 | 71.62 |
| 3 | Milo Layden | 10/10/2016 | WIN | 71.45 | 76.21 |
| 4 | Natalia Abner | 10/23/2016 | BOW | 75.17 | 74.49 |
| 5 | Leonia Leaton | 9/18/2016 | ELD | 89.38 | 50.51 |
| 6 | Andreas Oler | 10/17/2016 | BUR | 69.23 | 83.49 |

5. To remove Frozen rows or columns, select **No Rows** or **No Columns** from the **Freeze** list

# Using Functions and Formulas

To make calculations easier and faster in Google Sheets, functions can be used. This also allows for copying of functions to other cells for efficiency.

**To insert a function into a cell:**
1. Click the **Function** icon, or click **Insert, Function**

2. Choose a **Function** from the list or click More Functions to see the full list of available functions for Google Sheets

   These can be accessed by clicking in a cell and typing the equal sign = then the first letter of the function you are searching for and select the function or type the name of the entire function.

   **Make sure there is a ( after the Function name before adding values to the function.**
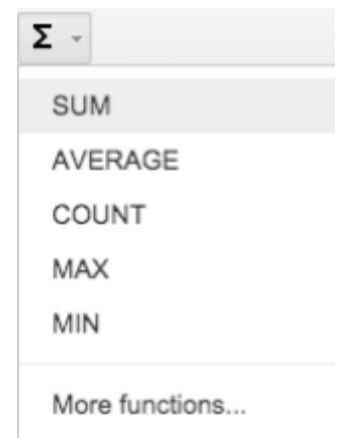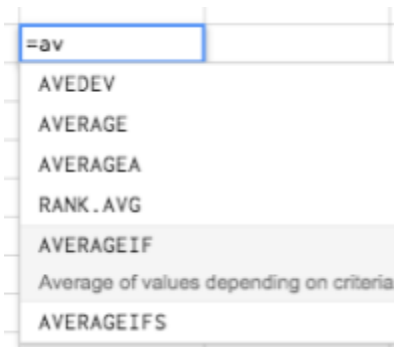
3. Click the cells you want to include in the **Function** or type their cell names (A1:A5, B2, B7)
   a. Separate individual cells by a comma
   b. Separate ranges by a colon
   c. End the function with an end parentheses
   d. Use the Formula bar to edit long formulas easily

4. Press **Enter** to calculate the value
5. The function can be edited by clicking the cell and editing in the formula bar.

# Paste Special

Paste special is a function used to duplicate certain aspects of a copied cell. This is useful to copy functions to new cells to calculate the same (as in a grade book) or to avoid typing a numbered sequence, etc.
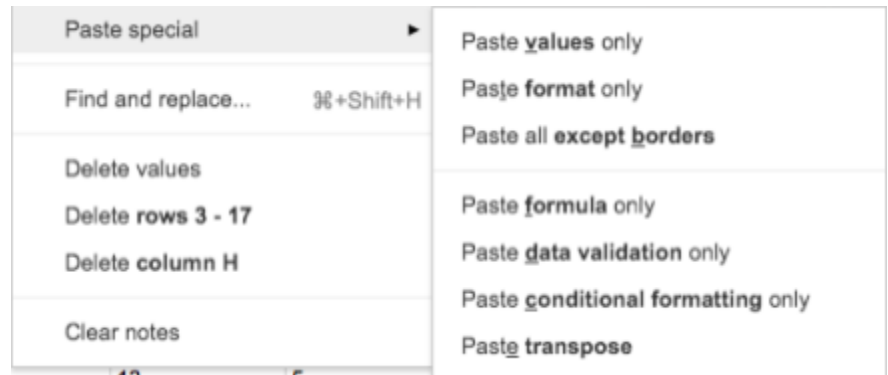
**To use Paste Special:**
1. In a cell create the function or value you want to paste
2. **Copy** the cell
3. Select the cells you want to paste the function or value to
4. Click **Edit** (or right click and choose Paste Special)
5. Click **Paste Special**

Copy cell ⟶ =sum(A2:G2)

=sum(A2:G2)

Select cells ⟶
to paste to
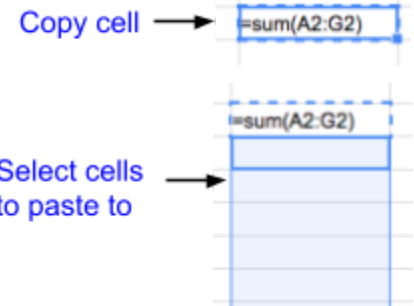
6. Select the **Paste Special** option for the cells

   In this case **Paste Formula only** was selected to paste the formula into the cells

| Paste special | ▶ | Paste **values** only |
|---|---|---|
| Find and replace... | ⌘+Shift+H | Paste **format** only |
| | | Paste all **except borders** |
| Delete values | | |
| Delete **rows 3 - 17** | | Paste **formula** only |
| Delete **column H** | | Paste **data validation** only |
| | | Paste **conditional formatting** only |
| Clear notes | | Paste **transpose** |

7. Cells are populated with the formula, changing the values to reflect the change in location

   This example was used to calculate the sum of a range of cells with each row being a unique field.

=sum(A2:G2)
=sum(A3:G3)
=sum(A4:G4)
=sum(A5:G5)
=sum(A6:G6)
=sum(A7:G7)

# Sorting

Google Sheets allows data to be sorted much in the same way as Microsoft Excel. There are two ways to access a sort, either through the Data menu, or by clicking the dropdown arrow on any column.

**To sort using the Data menu:**
1. Select the column or the range of cells you would like to sort
2. Click the **Data** menu
3. Click the type of sort you would like to do:
    a. Sort sheet by column (A), A-Z
    b. Sort sheet by column (A), Z-A
    c. Sort range- specify a range of cells to sort



> **NOTE: Options a & b should not be used when there is a Header Row on your spreadsheet unless you have used Freeze row to isolate the header row.**

4. For options a, and b your data will be sorted according to which sort you chose

5. For option c, you can specify what you would like to sort by and whether your data includes a header row

    You can also add additional sorts to make a more complex sort.

    The **Sort range** is the most useful sort since it gives you options to sort your data from multiple columns at one time.



6. Click **Sort** if using Step 5
7. Your data will be sorted according to the type of sort

You can also sort by the column dropdown. **This method is NOT recommended if you have a Header Row unless you first Freeze that row.**

**To sort by clicking the column dropdown arrow:**
1. On any column that you would like to sort, click the dropdown arrow to the right of the column name
2. A menu will pop up
3. Click the type of sort you would like to do:
    a. Sort sheet A-Z
    b. Sort sheet Z-A

4. The column will sort depending on which option was chosen and all data in other columns will remain in the correct row.
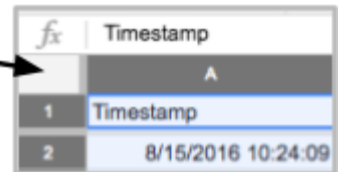
# Filtering and Filter Views

In Google Sheets you can also filter data within a column to isolate certain types of data.
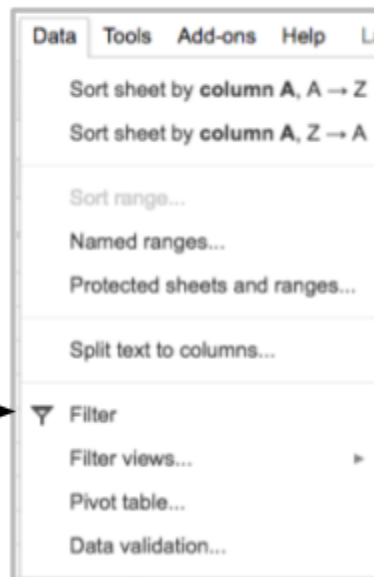
**To turn on Filtering:**
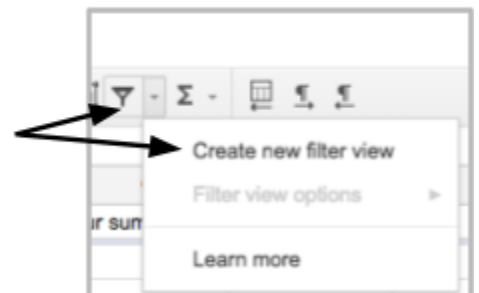1. Select all of your data using Control A or clicking the Select all toggle
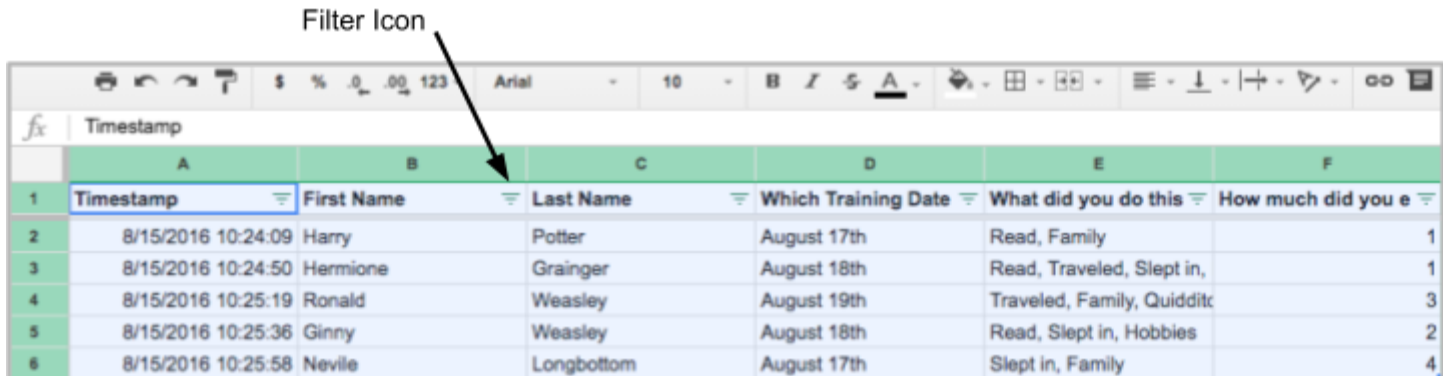
2. Go to the Data menu or click the Filter icon

3. Click Filter

4. Now each column has a filter icon

Filter Icon



5. Click on the Filter Icon in the column you want to filter and decide how you want to filter it. The window will populate with the available data and can be deselected or configured based on the user's needs.
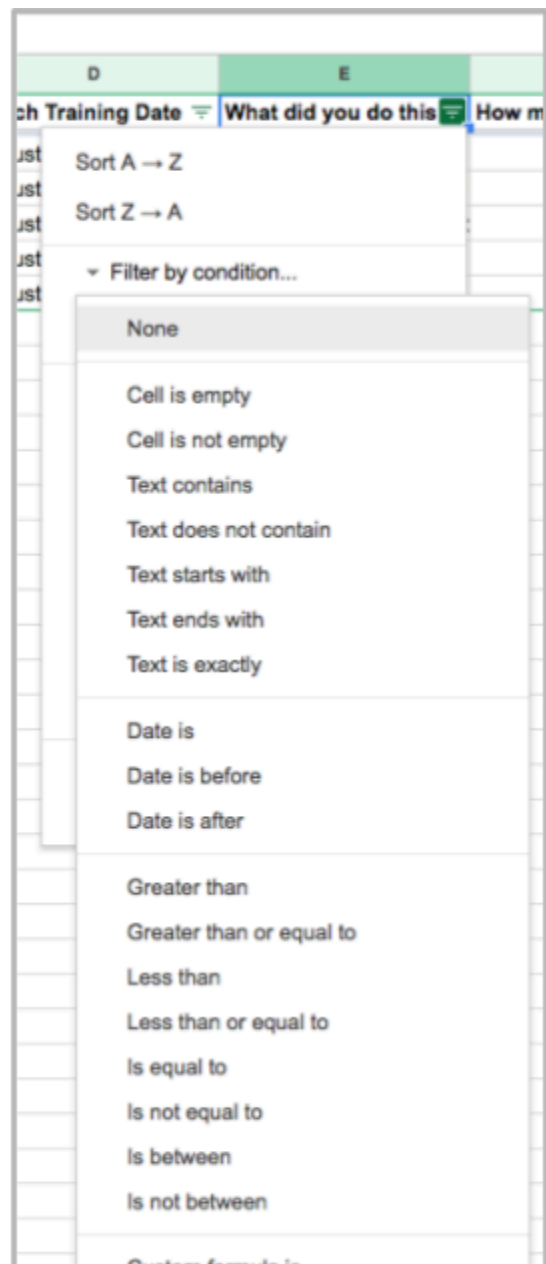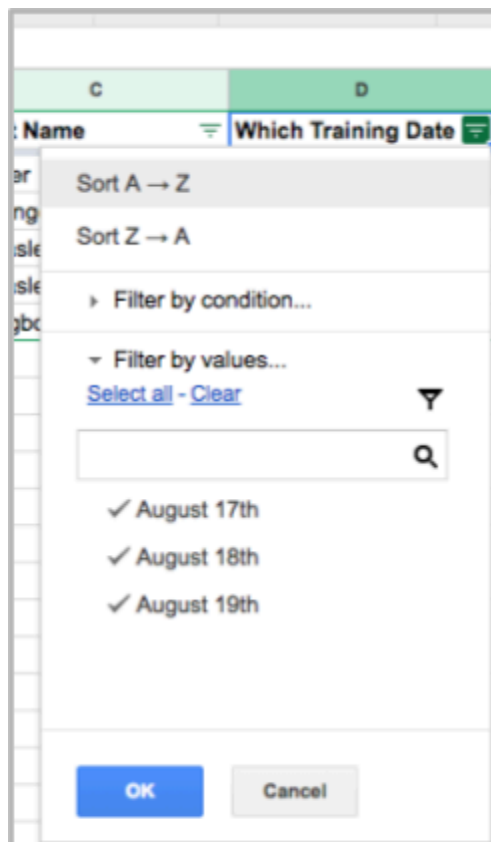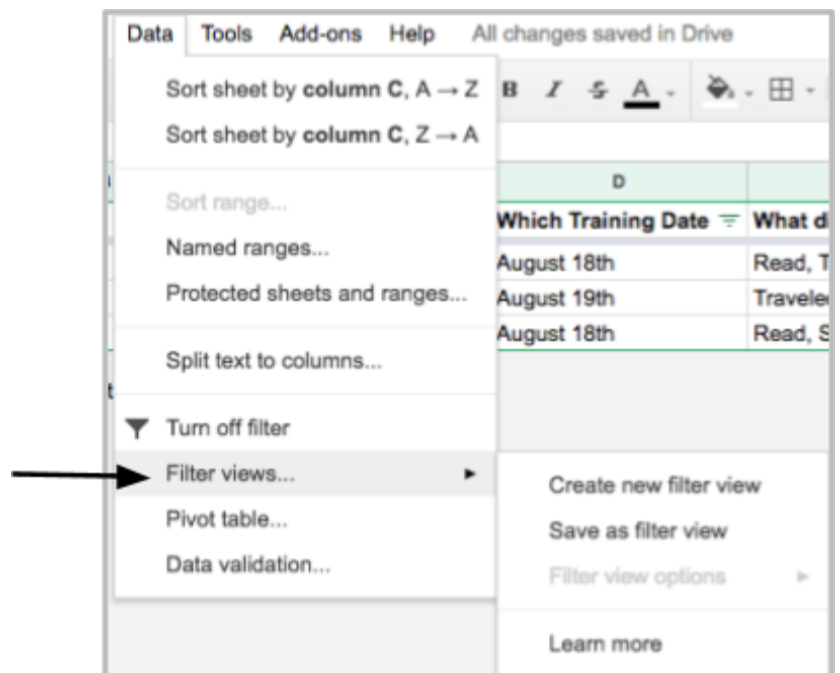
6. Click OK to set the filter for that Column. Clicking the filter icon again on that column will allow you to modify the filter. Clicking on a different column filter icon will allow you to filter based on additional criteria in other columns.

| Data | Tools | Add-ons | Help | Al |
| --- | --- | --- | --- | --- |

Sort sheet by **column D**, A → Z

Sort sheet by **column D**, Z → A

Sort range...

Named ranges...

Protected sheets and ranges...

Split text to columns...

7. To remove filters and return to all of your data, go to the Data Menu and click Turn off filter

Turn off filter

Filter views...                    ▶

Pivot table...

Data validation...
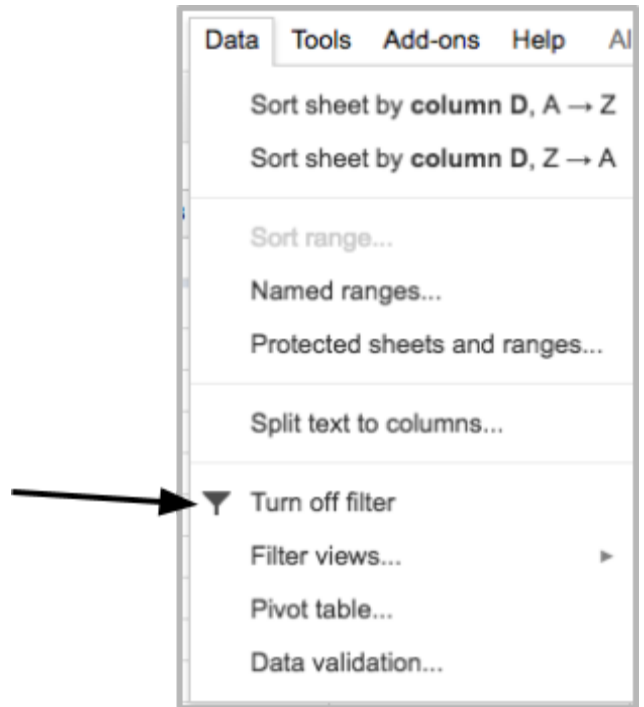
8. You can also create and save filter views that you want to use frequently on a Spreadsheet. These filter views cannot be transferred to other spreadsheets, only the spreadsheet that they were created using.

| Data | Tools | Add-ons | Help | All changes saved in Drive |
| --- | --- | --- | --- | --- |

Sort sheet by **column C**, A → Z    B  *I*  S  A ◟    ◈ ◟  ⊞ ◟

Sort sheet by **column C**, Z → A

|  | D |  |
| --- | --- | --- |

Sort range...

Named ranges...

Protected sheets and ranges...

Split text to columns...

Turn off filter

Filter views...                    ▶

Pivot table...

Data validation...

| Which Training Date ⇲ | What d |
| --- | --- |
| August 18th | Read, T |
| August 19th | Travele |
| August 18th | Read, S |

Create new filter view

Save as filter view
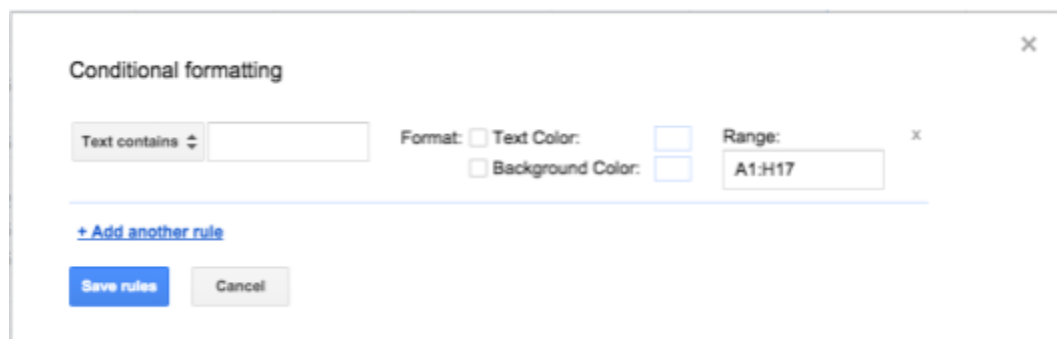
Filter view options    ▶

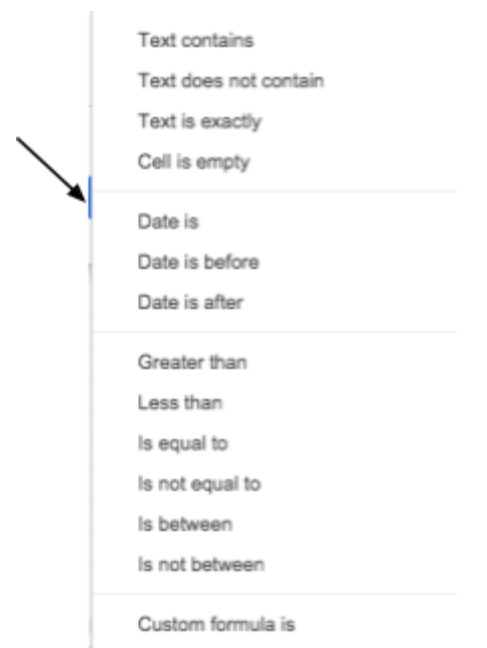Learn more

# Conditional Formatting

Conditional formatting in Google Sheets allows you to apply cell shading to cells within your spreadsheet that meet certain criteria.  This is useful for identifying low scores, missing data, etc.

**To set Conditional Formatting:**
1. Conditional formatting can be set up before any data has been entered if a range is selected, or after data has been entered if the range of data you want the conditional formatting applied to is selected first
2. Click the **Format** menu
3. Click **Conditional formatting**
4. The **Conditional formatting** dialog box will appear

Conditional formatting

Text contains ⇕ [          ]     Format: ☐ Text Color: [    ]     Range:
                                         ☐ Background Color: [  ]     A1:H17

+ Add another rule

Save rules    Cancel

5. Set the options for the **Conditional formatting**
6. Change either the **Text** or **Background color** or both if desired (You need to change one, or your cells remain the same.)
7. You can adjust the **Range** if needed
8. Add an additional rule(s) if needed
9. Click **Save rules**
10. The conditional formatting will be applied to the range if it was selected or to any data entered within a range of cells the Conditional formatting was set up for

Text contains
Text does not contain
Text is exactly
Cell is empty

Date is
Date is before
Date is after

Greater than
Less than
Is equal to
Is not equal to
Is between
Is not between

Custom formula is

**Example of Conditional formatting**

Selected range for Conditional Formatting

| D | E | F |
|---|---|---|
| test | test2 | test 3 |
| 0 | 0 | 19 |
| 8 | 1 | 13 |

Rule setup for Conditional Formatting



Rule applied to range of cells- all cells with a value between 0-5 were shaded green.

| D | E | F |
|---|---|---|
| test | test2 | test 3 |
| 0 | 0 | 19 |
| 8 | 1 | 13 |
| 10 | 2 | 9 |
| 10 | 1 | 15 |

# Validation

Validation in Google Sheets allows you to set up dropdown lists and restrict the data that can be placed into the cell.  This is useful for classroom applications as well as when collaborating on Google Sheets with others.

**To insert Validation:**
1. Select the cell(s)/range you would like to apply the Validation to
2. Click the **Data menu**
3. Click **Validation**
4. The **Data validation** dialog box will appear

**Data validation**                                                    ✕

Cell range:        Sheet1!J:J                ▦

Criteria:          List from a range ⬍    e.g., Sheet1!A2:D5    ▦

On invalid data:   ◯ Show warning   ⦿ Reject input

Appearance:        ☐ Display in-cell button to show list

                   ☐ Show help:  Click and enter a value from range        Reset

[ **Save** ]   [ Remove validation ]   [ Cancel ]

5. Select the **Criteria** that you would like to use for creating the data validation

List from a range

List of items

Number

Text

Date

Custom formula is

6. Select options for **invalid data**
7. Select options for **Appearance** (Display in-cell button to show list is helpful)
8. Click **Save**

**To Remove Validation:**
1. Select the cell(s) with Validation
2. Click the **Data** menu
3. Click **Validation**
4. Click **Remove validation**
5. The validation is removed from the cell(s)

**Example using Validation to create record keeping dropdown menu**

Select the range in this case, a row of the spreadsheet

| 19 | | | | |
|----|--|--|--|--|

Set **Criteria** using **List of items** and defining the list

Data Validation as applied to the row. The cells have a dropdown arrow to access the List of options to choose from.
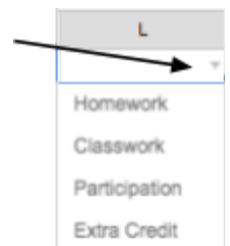


# Inserting Sheets

Google Sheets allows for multiple sheets within the same document. This can be useful for tracking certain information within the same sheet, creating tabbed spreadsheets, etc.
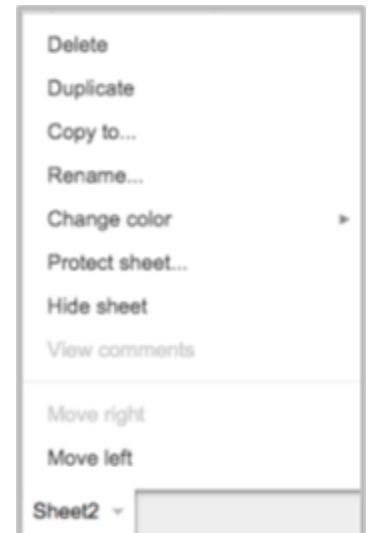
**To insert a new sheet:**
1. Click the + sign at the bottom left of page or click the **Insert** menu, **New Sheet**
2. A new sheet will appear to the right of the original sheet or other sheets
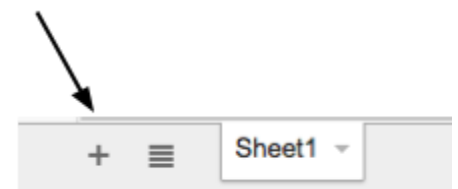
3. Clicking the dropdown allows you to perform certain sheet related tasks
4. New sheets can be renamed by double clicking on the tab name or clicking the dropdown arrow and clicking **Rename**

| Delete |
| Duplicate |
| Copy to... |
| Rename... |
| Change color |
| Protect sheet... |
| Hide sheet |
| View comments |
| Move right |
| Move left |

Sheet2

5. Sheets can easily be switched between by using the All Sheets list

Form Responses 1
Sheet1
✓ Sheet2

Form Responses 1  Sheet1  Sheet2
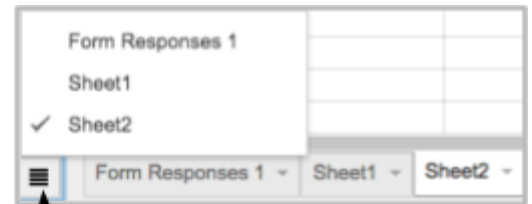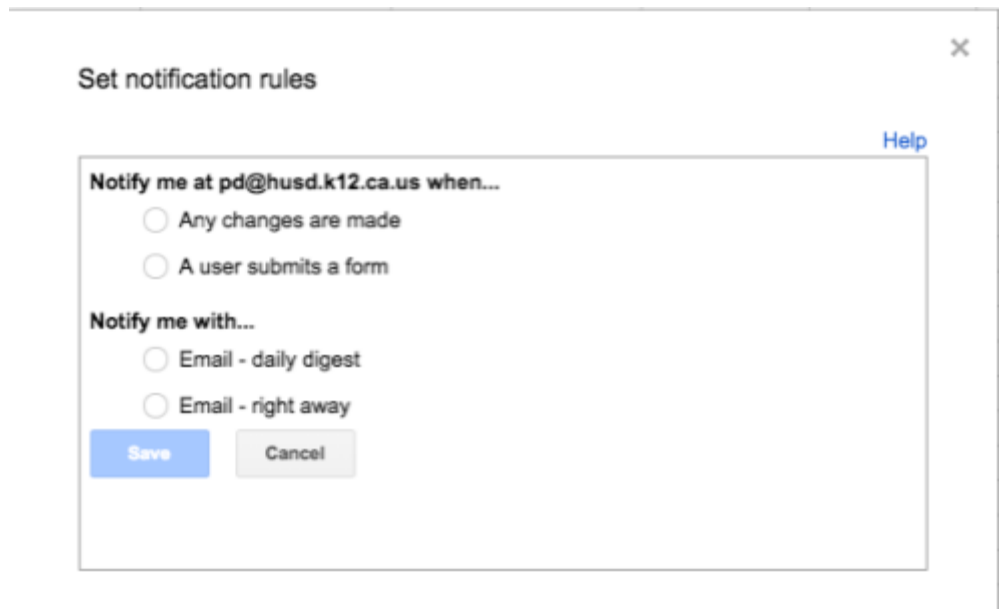
All Sheets list

# Notification Settings

Google Sheets allows notifications to be set up when data is modified or if linked to a form, a new response is recorded.

**To set notifications:**
1. Click the **Tools** menu

2. Click **Notification rules**

3. Choose the type of notification you would like to receive

4. Click **Save**
5. These notifications can always be edited or removed by going back to the Set notifications rules dialog box.
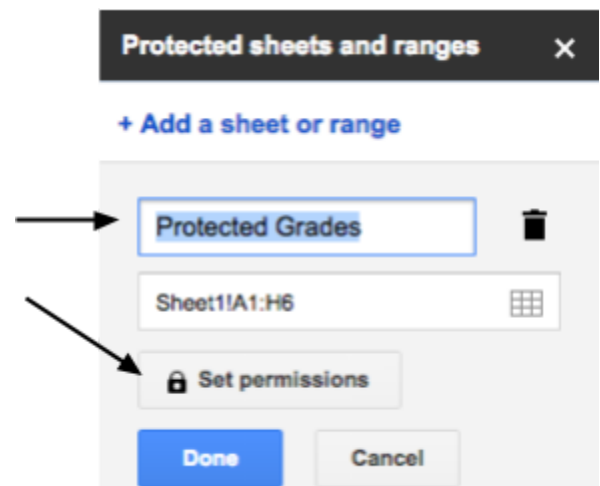


# Protected Sheets and Ranges

Google Sheets allows editors to set protected sheets and ranges so data cannot be edited when sharing with multiple collaborators.  Protecting sheets and ranges can only be done once the document has been **Shared with others** with **Can edit** rights.  The permissions are restricted for certain users and changed from a **Can edit** state to a **Can comment** state for the particular range or sheet.  Any ranges and sheets that do not fall within the protected section are still open for editing by the user the document is overall shared with **Can edit** rights.  **NOTE:  Any editor can set Protected Sheets and Ranges, please share carefully.**
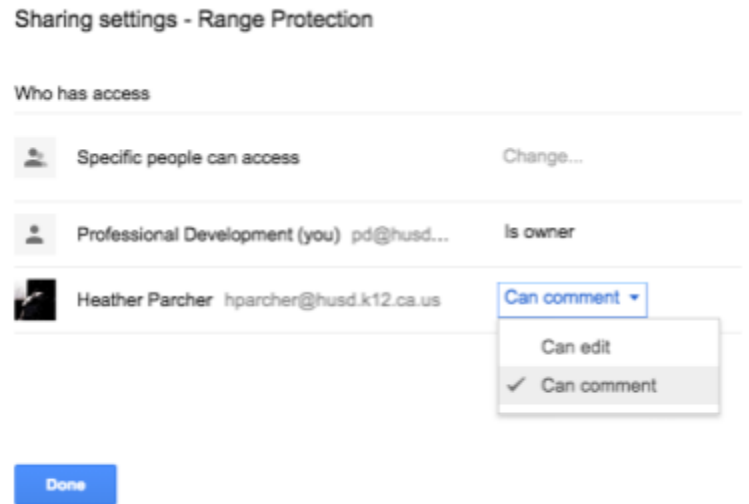
**To protect a Range:**
1. Share the document with **Can edit** accessibility
2. Select the range in the spreadsheet that you want to protect
3. Click the **Data** menu
4. Click **Protected sheets and ranges**
5. Give a name to the area to keep track of protected ranges
6. Click **Set permissions**

7. Change the **Can edit** rights to **Can comment** rights
8. Click **Done**
9. Click **Done** again in the Protected sheets and ranges dialog box
10. The owner of the document still has the ability to edit the protected range

Sharing settings - Range Protection

Who has access

| | | |
|---|---|---|
| 👤 | Specific people can access | Change... |
| 👤 | Professional Development (you)  pd@husd... | Is owner |
| 🖼 | Heather Parcher  hparcher@husd.k12.ca.us | Can comment ▾ |

  Can edit
✓ Can comment

**Done**

When the user who is granted **Can Comment** rights on the protected range, their spreadsheet looks shaded where the protect range exists.  The unshaded areas are still editable.

Protected Range
(shaded)

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| | Classwork | Participation | Homework | Homework | Classwork | Extra Credit | Classwork | Participation |
| 1 | 1 | 0 | 0 | 0 | 0 | 19 | 6 | 26 |
| 2 | 0 | 7 | 5 | 8 | 1 | 13 | 5 | 39 |
| 3 | 2 | 8 | 11 | 10 | 2 | 9 | 5 | 47 |
| 4 | 1 | 2 | 12 | 10 | 1 | 15 | 9 | 50 |
| 5 | 7 | 5 | 5 | 10 | | 13 | 11 | 51 |
| 6 | 5 | 11 | 11 | 10 | 8 | 16 | 10 | 71 |
| 7 | 3 | 6 | 5 | 11 | 7 | 14 | 7 | 53 |
| 8 | 5 | 12 | 12 | 12 | 12 | 16 | 13 | 82 |

Editable Range
(unshaded)

**To protect a Sheet:**
1. Share the document with **Can edit** accessibility
2. Select the sheet in the spreadsheet that you want to protect (generally the sheet being currently edited)
3. Click the **Data** menu
4. Click **Protected sheets and ranges**
5. If necessary, click **Add a sheet or range**

6. Click the **Sheet** tab

7. Select the Sheet to protect from the dropdown
8. Click **Set permissions**
9. Change the **Can edit** rights to **Can comment** rights
10. Click **Done**
11. Click **Done** again in the **Protected sheets and ranges** dialog box
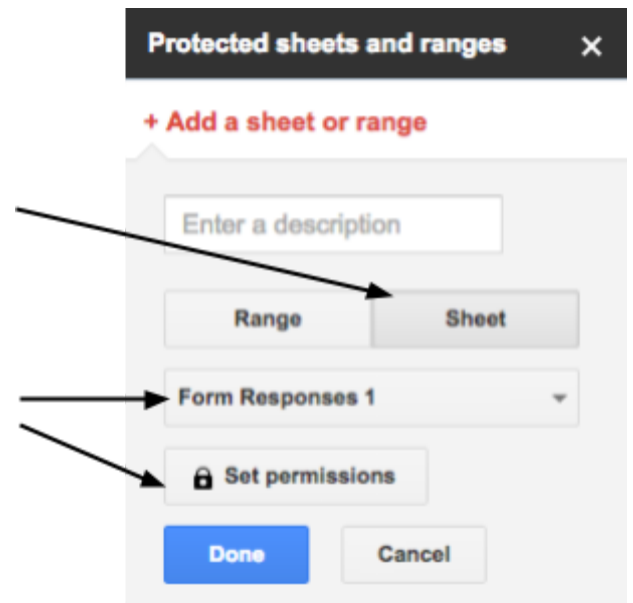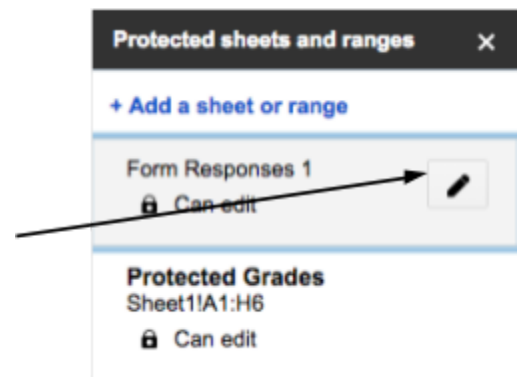
12. The owner of the document still has the ability to edit the protected sheet
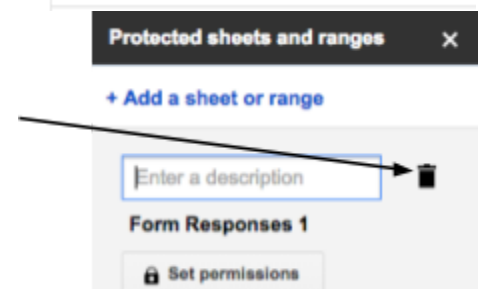The sheet will show a padlock icon next to the name to indicate that it is Protected.

**To remove protected sheets/ranges:**
1. Click the **Data** menu
2. Click **Protected sheets and ranges**
3. Click the name of the protected sheet/range you want to unprotect
4. Click the pencil to edit

5. Click the trash can to remove the protection

6. A warning dialog box will appear
7. Click Remove

## Inserting Charts

Google Sheets includes the ability to make charts.  Typical formats of charts are available to represent data visually such as bar, line, area, column, scatter, pie, map, trend and more.  To learn more about how to insert and customize charts in Google Sheets, see this tutorial from Google.

## Add-Ons

Add-ons are great ways to expand the usefulness and classroom applicability in Google Sheets.  They are essentially programs that others have created to increase the functionality of Google Sheets beyond what was designed by Google.  Some of the Add-ons make managing files easier as well as providing some of the options available in Microsoft Excel.

**To add an Add-on to Google Sheets:**
1. Click the **Add-ons** menu
2. Click **Get Add-ons**
3. Search for Add-ons you would like to add
4. Agree to any terms and conditions
5. The Add-on will now be available, with its options in the **Add-ons** menu
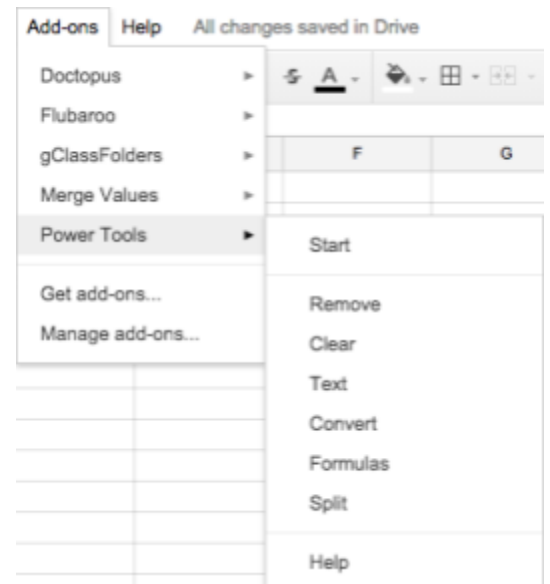
**Useful Add-ons for Google Sheets:**
- Flubaroo- easily grade assignments when using Google Forms
- Doctopus- Manage classroom files and folders in Drive
- Power Tools- convert text to columns, etc.

## Additional Resources

Google's Sheets Tutorial
Google's Google Sheets Resource Pages