

THE ULTIMATE GUIDE TO

Google Sheets

By The Zapier Team

The Ultimate Guide to Google Sheets

Everything you need to build powerful spreadsheet workflows in Google Sheets.

Zapier

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Learn everything you need to become a spreadsheet expert with @zapier's Ultimate Guide to Google Sheets:
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It's easy enough to list your expenses in a spreadsheet, use =sum(A1:A20) to see how much you spent, and add a graph to compare your expenses. It's also easy to use a spreadsheet to deeply analyze your numbers, assist in research, and automate your work—but it seems a lot more tricky.

Google Sheets, the free spreadsheet companion app to Google Docs, is a great tool to start out with spreadsheets. It's free, easy to use, comes packed with hundreds of functions and the core tools you need, and lets you share spreadsheets and collaborate on them with others.

But where do you start if you've never used a spreadsheet—or if you're a spreadsheet professional, where do you dig in to create advanced workflows and build macros to automate your work?

Here's the guide for you. We'll take you from beginner to expert, show you how to get started with spreadsheets, create advanced spreadsheet-powered dashboard, use spreadsheets for more than numbers, build powerful macros to automate your work, and more. You'll also find tutorials on Google Sheets' unique features that are only possible in an online spreadsheet, like built-in forms and survey tools and add-ons that can pull in research from the web or send emails right from your spreadsheet.

Contents

Chapter 1: Google Sheets 101—The Beginner’s Guide to Online Spreadsheets	1
Getting Started with Google Sheets	3
1. Create a Spreadsheet and Fill It With Data	3
2. Format Data for Easy Viewing	8
3. Add, Average, and Filter Data with Formulas	12
4. Share, Protect, and Move Your Data	17
That’s All For Now	23
Chapter 2: Google Forms Guide—Everything You Need to Make Great Forms for Free	25
A Tour of Google Forms	26
Building Your First Google Form	27
Google Forms Field Options	29
Form Sections and Logic	35
Design Your Form	39
Store Form Responses in a Spreadsheet	41
Share Your Form	43
Google Forms Add-ons	50
Integrate Google Forms with MailChimp, Salesforce, Trello, and More	53
Chapter 3: Spreadsheet CRM—How to Create a Customizable CRM with Google Sheets	57
Tools to Build Your Google Sheets CRM	57
How To Build a CRM in Google Sheets:	58
Add a Form to Your Spreadsheet	58
Create a Contact Management System	64
Qualify Contacts with Web Scraping	69
Build an Outreach System with Social Media and Email	78
Chapter 4: Write Faster with Spreadsheets—10 Shortcuts for Composing Outlines, Research, HTML Tables and More	89
Maintain an Editorial Calendar	90
Build Detailed Outlines	92
Import Data From Websites and Feeds	93
Identify and Translate Text	97
Format Text Automatically	98
Combine Text from Cells	99
Create Linked Text	100

CONTENTS

Display Images From a URL	101
Create HTML Tables For Your Blog Posts	103
Publish Your Spreadsheets	105
Chapter 5: How to Create a Custom Business Analytics Dashboard with Google Sheets	107
The Tools to Build a Customizable Dashboard	107
Decide What to Include in the Dashboard	108
Get Data For Your Dashboard	109
Build a Reporting Dashboard in Google Sheets	109
Add Additional Metrics to Your Dashboard	120
Beyond Google Analytics: How to Pull Data from Any App into Your Dashboard	124
Create Your Own Spreadsheet Dashboards	127
Chapter 6: 50 Google Sheets Add-Ons to Supercharge Your Spreadsheets	128
Getting Started with Google Sheets Add-Ons	129
Forms	132
Data Gathering	134
Text Tools	139
Formatting	144
Number Crunching	148
Sharing and Publishing	151
Email and Communication	154
Build Your Own Google Sheets Add-ons	157
How to Work Offline in Google Sheets	160
Go Make Google Sheets Your Own!	161
Chapter 7: Automate Google Sheets—An Introduction to Google Apps Script	162
Getting Started with Google Apps Script	162
Building your First Script	163
Exploring the Power of Google Apps	168
What else can you do with Google Apps Script?	173
Chapter 8: Extra Resources to Manage Your Spreadsheets	174
Google Sheets' <i>Getting Started Guide</i>	174
Google Sheets' <i>Functions List</i>	175
Google Sheets' <i>Add-ons Guide</i>	176
Find Alternate Spreadsheet Apps	177
Create Templates for Your Most-Used Spreadsheets	178
Effectively Organize Your Files and Folders	178
Back up All Your Files	179
Learn how to Build Great Forms and Surveys	180

Chapter 1: Google Sheets 101—The Beginner's Guide to Online Spreadsheets



Humans are great at processing images, making connections between words and concepts, and remembering obscure trivia. But we're bad—*really* bad—at mentally processing and storing accurate, easy-to-use data sets.

Data Tables—more commonly known today as spreadsheets—were invented to organize arrays of information that our brains can't recall. Spreadsheets help us sort and label in a way that makes sense, so we can reference it and perform calculations later.

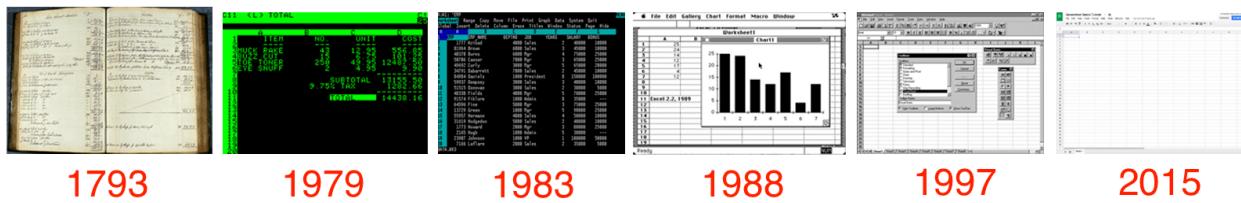
The practice actually dates back thousands of years, to the papyrus spreadsheets in the [diary of Merrer](#), an Egyptian Old Kingdom official involved in the construction of the Great Pyramid of Kufu.



Back then, paper was one of your only options for cataloguing huge amounts of data. Now, we’ve got computers to do the work for us.

When [VisiCalc](#), the first digital spreadsheet, was released in 1979, it eliminated the need to physically write data, calculate values, and store paper spreadsheets. As our tools evolved, programs like Excel (the most popular spreadsheet software of the last 30 years) made digital spreadsheets one of the most popular uses of computers.

There was only one problem: these spreadsheets were tied to a single machine, which made it difficult to share data. Plus, if your sheet was accidentally erased or lost due to computer failure, it was gone for good.



And so, as the next evolution of the papyrus scratchpad, Google brought spreadsheets online in 2006 with their Google Docs suite. Now in [Google Sheets](#), you can create spreadsheets together with others online, and crunch numbers from any internet-connected device.

Google Sheets is a spreadsheet app on steroids. It looks and functions much like any other spreadsheet tool, but because it’s an online app, it offers much more than most spreadsheet tools. Here are some of the things that make it so much better:

- It’s a web-based spreadsheet that you can use anywhere—no more forgetting your spreadsheet files at home.
- It works from any device, with mobile apps for iOS and Android along with its web-based core app.
- Google Sheets is *free*, and it’s bundled with Google Drive, Docs, and Slides to share files, documents, and presentations online.
- It includes almost all of the same spreadsheet functions—if you know how to use Excel, you’ll feel at home in Google Sheets.
- You can download add-ons, create your own, and write custom code.
- It’s online, so you can gather data with your spreadsheet automatically and do almost anything you want, even when your spreadsheet isn’t open.

Whether you’re a spreadsheet novice or an Excel veteran looking for a better way to collaborate, this book will help you get the most out of Google Sheets. We’ll start out with the basics in this chapter—then keep reading to learn Google Sheets’ advanced features, find its best add-ons, and learn how to build your own.

Interested in writing your own scripts for Google Sheets? We’ll dig into those in chapter 8 with [tutorials on writing Google Apps Script](#).

Getting Started with Google Sheets

The best way to learn a tool like Sheets is to dive straight in. In this chapter, you’ll learn how to:

1. Create a Spreadsheet and Fill It With Data
2. Format Data for Easy Viewing
3. Add, Average, and Filter Data with Formulas
4. Share, Protect, and Move Your Data

Common Spreadsheet Terms

To kick things off, let’s cover some spreadsheet terminology to help you understand the terms in this book:

- **Cell:** A single data point or element in a spreadsheet.
- **Column:** A vertical set of cells.
- **Row:** A horizontal set of cells.
- **Range:** A selection of cells extending across a row, column, or both.
- **Function:** A built-in operation from the spreadsheet app, which can be used to calculate cell, row, column, or range values, manipulate data, and more.
- **Formula:** The combination of functions, cells, rows, columns, and ranges used to obtain a specific result.
- **Worksheet (Sheet):** The named sets of rows and columns making up your spreadsheet; one spreadsheet can have multiple sheets
- **Spreadsheet:** The entire document containing your worksheets

Tip: If you’ve never used Google Sheets—or, especially if you’ve never used a spreadsheet before—be sure to check out Google’s [Getting Started Guide](#) for Sheets. You may also want to bookmark Google’s [spreadsheet function list](#) as a quick reference.

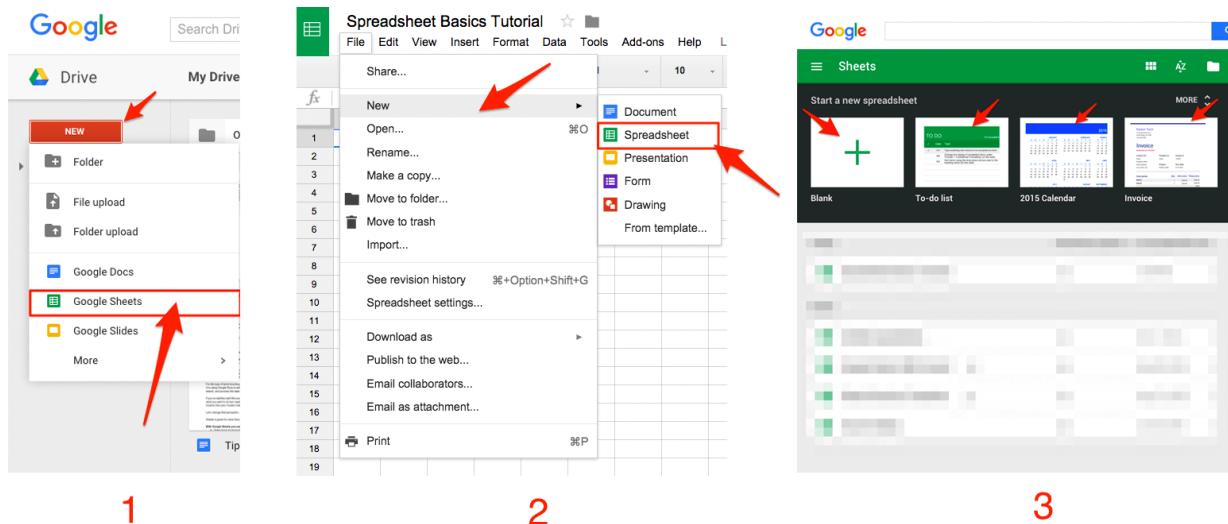
With that knowledge in hand, let’s dive in and start building our own spreadsheets.

1. Create a Spreadsheet and Fill It With Data

The best part about Google Sheets is that it’s free and it works on any device—which makes it easy to follow along with the tutorials in this book. All you’ll need is a web browser (or the [Google Sheets app](#) on your iOS or Android device), and a free Google account. On your Mac or PC, head over to sheets.google.com, and you’re ready to get started.

There are 3 ways to create a new spreadsheet in Google Sheets:

1. Click the red “NEW” button on your your [Google Drive dashboard](#) and select “Google Sheets”
2. Open the menu from within a spreadsheet and select “File > New Spreadsheet”
3. Click “Blank” or select a template on the [Google Sheets homepage](#)



This will create a new blank spreadsheet (or a pre-populated template if you choose one of those). For this tutorial, though, you should start with a blank spreadsheet.

The Google Sheets interface should remind you of at least one other spreadsheet app you’ve seen before, with familiar text editing icons and tabs for extra sheets.

The image shows a screenshot of the Google Sheets interface. The title bar says "Spreadsheet Basics Tutorial". The menu bar includes File, Edit, View, Insert, Format, Data, Tools, Add-ons, Help, and "All changes saved in Drive". The toolbar has icons for file operations, text styling, and data manipulation. The main area is a grid of cells labeled A1 through Y27. The status bar at the bottom right shows "michael@michaelgrubbs.com" and "Comments". A large red text overlay in the center of the sheet area says "Default Google Sheets Interface".

The only difference is that Google has reduced the clutter and number of displayed interface elements. So your first task should be obvious: Add some data!

Note: Many of the images in this chapter are actually animations—be sure to check out the [online copy of this chapter](#) to see the original GIFs.

Adding Data to Your Spreadsheet

Look around the white-and-grey grid that occupies most of your screen, and the first thing you’ll notice is a blue outline around the selected cell or cells.

As soon as you open a new spreadsheet, if you just start typing you’ll see that your data starts populating the selected cell immediately—usually the top left cell. There’s no need to double click cells when you add information, and not much need to use your mouse.

Tip: An individual square in a spreadsheet is called a **cell**; they’re organized into rows and columns with number and letter IDs, respectively. Each cell should contain one value, word, or piece of data.

Feel free to select any cell you’d like, then go ahead and type something in. When you’re done entering data into a cell, you can do one of 4 things:

1. Press **ENTER** to save the data and move to the **beginning** of the next row
2. Press **TAB** to save the data and move **to the right** in the same row
3. Use the **ARROW KEYS** on your keyboard (up, down, left, and right) to **move 1 cell in that direction**
4. Click any cell to jump **directly to that cell**

If you don’t want to type in everything manually, you can also add data to your Sheet *en masse* via a few different methods:

1. Copy and paste a list of text or numbers into your spreadsheet
2. Copy and paste an HTML table from a website
3. Import an existing spreadsheet in csv, xls, xlsx and [other formats](#)
4. Copy any value in a cell across a range of cells via a *click and drag*

Copy & Paste is pretty self-explanatory, but there are times when you’ll try to copy a “spreadsheet-y” set of data from a website or PDF, and it will just paste into one cell or format everything with the original styling. Try looking for data that’s actually in an HTML table (like movie data from [IMDB](#), for example) to avoid getting funky pasted data in your spreadsheet.

Note: Make sure you only click once on a cell before pasting data, so Google Sheets will turn it into a list with each item in its own cell. If you double-click on a cell, Google Sheets will paste all the data into *one cell* which is likely not what you want.

	Rank & Title	IMDb Rating	Your Rating
1.	The Shawshank	9.2	
2.	The Godfather	9.2	
3.	The Godfather	9	
4.	The Dark Knight	8.9	
5.	12 Angry Men	8.9	
6.	Schindler's List	8.9	
7.	Pulp Fiction (1)	8.9	
8.	The Good, the Bad and the Ugly	8.9	

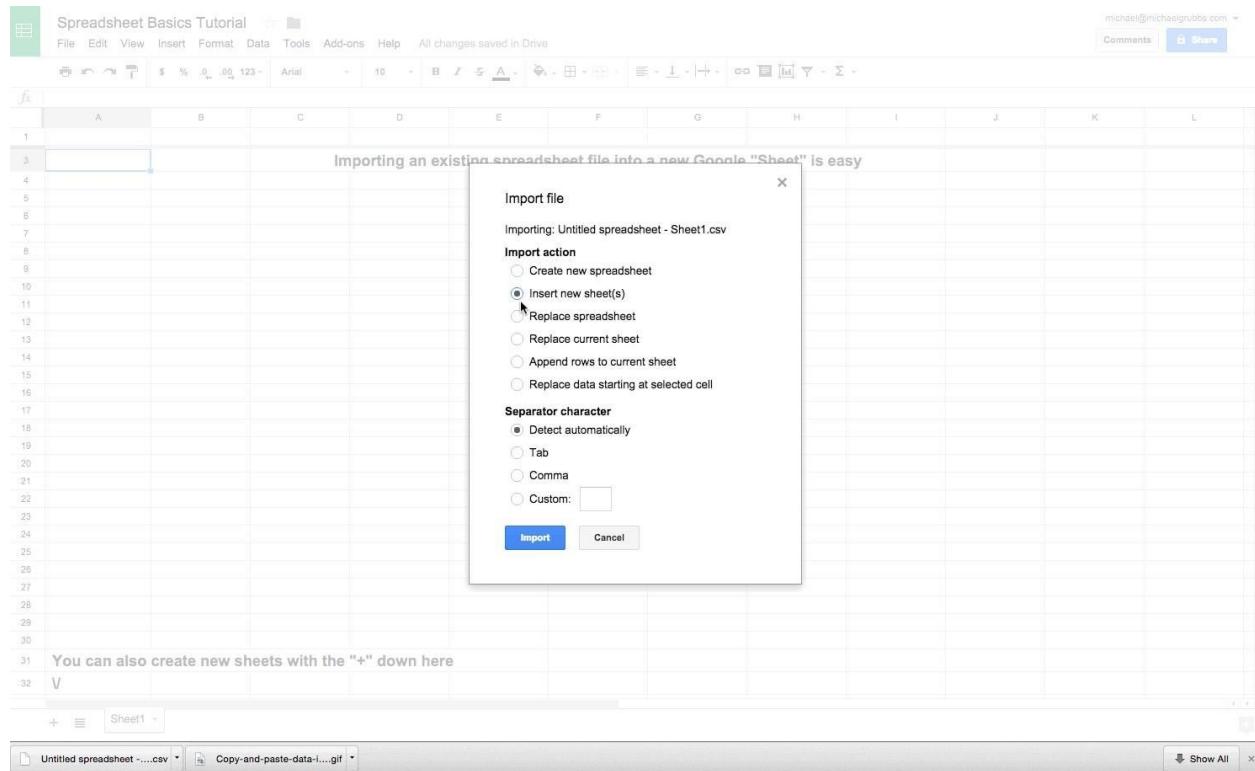
Showing 250 Titles

Rank & Title	IMDb Rating	Your Rating
1. The Shawshank Redemption (1994)	9.2	
2. The Godfather (1972)	9.2	
3. The Godfather: Part II (1974)	9.0	
4. The Dark Knight (2008)	8.9	
5. 12 Angry Men (1957)	8.9	
6. Schindler's List (1993)	8.9	
7. Pulp Fiction (1994)	8.9	
8. The Good, the Bad and the Ugly (1966)	8.9	
9. The Lord of the Rings: The Return of the King (2003)	8.9	

If you do end up with oddly formatted data, don’t worry: we’ll fix that in the next section!

Importing a file is simple as well. You can either import directly into the current spreadsheet, create a new spreadsheet, or replace a sheet (i.e. an individual tab) with the imported data.

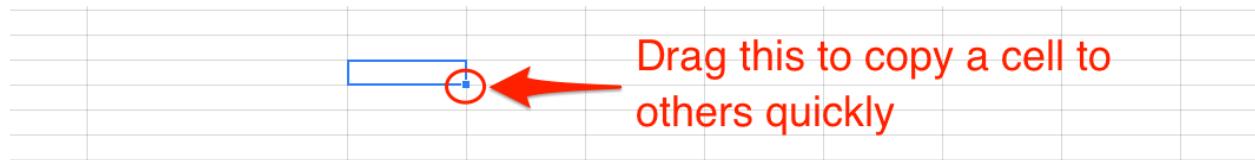
The most common files you’ll import are CSV (comma separated values) or XLS and XLSX (files from Microsoft Excel). To import a file from outside of your Google Drive, go to the FILE > IMPORT > UPLOAD menu.



I prefer to import the data into a new sheet every time to keep my old data and new imported data separate. Alternatively, if you have a Google Sheet (or a CSV, XLS, or other spreadsheet file) saved in your Google Drive account, you can import that directly into your spreadsheet using the same process—just search your Drive from the import window.

Dragging to copy a cell value needs a bit of explanation, because you’ll use this one a lot once you’ve set up formulas in your spreadsheets.

By dragging the small blue dot (pictured below) in the bottom-right corner of a highlighted cell across or down a range of cells, you can perform a number of different functions.



There are a number of ways you could use this feature:

1. Copying a cell’s data to a number of neighboring cells (including formatting)
2. Copying a cell’s “Formula” to neighboring cells (this is an advanced feature, and we’ll cover it in detail later)
3. Creating an ordered list of text data

Here’s an example of how to creating an ordered list might work: Try adding the text `Contestant 1` to Cell

A1, then *clicking and dragging* the little blue dot in the bottom-right corner of the highlighted cell either down or across any number of neighboring cells.

	A	B	C	D	E	F	G	H	I
1	Contestant 1	Contestant 2	Contestant 3	Contestant 4	Contestant 5	Contestant 6			
2	Contestant 2								
3	Contestant 3								
4	Contestant 4								
5	Contestant 5								
6	Contestant 6								
7	Contestant 7								
8	Contestant 8								
9	Contestant 9								
10	Contestant 10								
11	Contestant 11								
12	Contestant 12								
13	Contestant 13								
14	Contestant 14								
15	Contestant 15								
16	Contestant 16								
17	Contestant 17								
18	Contestant 18								
19	Contestant 19								
20	Contestant 20								
21									
22									
23									
24									
25									

If there was no number after Contestant, this dragging action would simply copy “Contestant” to any cells you drag over. But because the number is there, Sheets knows to increment the next cell +1.

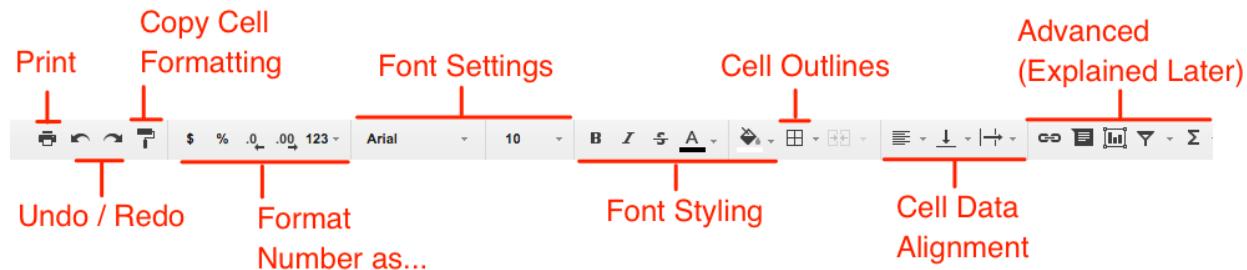
Let’s assume that you have either copied, pasted, imported, or typed-in a good chunk of data, and that your spreadsheet is looking pretty healthy.

Now, *How can we use this data?*

2. Format Data for Easy Viewing

Whether you’re tracking expenses, recording students’ grades, or [keeping track of customers in a homebrew CRM](#) (as we’ll build in chapter 3), you’ll want to manipulate and format your data.

The basic formatting options in Google Sheets are available above your first cell. They’re labeled in the image below, but for quick reference while you’re working on a sheet, just hover over an icon to see its description and shortcut key.



Print, Undo / Redo, and the Font Settings / Styling function similarly to what you’d expect from your favorite word processor. The shortcut keys are the same as well, so just treat it like you’re editing any other document!

As for everything else, the best way to show you how everything works is to dive right into an example.

I’m going to create a quick list of potential breakfast options for tomorrow morning, along with their ingredients, counts, prices, and links to YouTube videos for how to make them (who knew you could make a 3-minute video about scrambled eggs?).

Spreadsheet Basics Tutorial							
	A	B	C	D	E	F	G
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	
2	Eggs		4	2		1	1
3	Bread			2			
4	Milk				2		
5	Cereal (or Flour)				2	3	3
6	Butter	1		1		2	2
7	Salt	1					
8	Sugar		2			3	4
9	Total "Parts" Needed	6	7				
10	Number of Ingredients	3	4	2	4	4	
11	Avg Price / Serving	0.8	0.99	0.75	1	1.25	
12	Tutorial Link	https://www.youtube.com/watch?v=ltza8kY0zY					
13							
14	You can easily create something like this... But let's clean it up and make it awesome!						
15							
16							
17							
18							
19							
~							

It’s functional enough that you could use this *very* easily to keep track of information. In fact, a *vast majority* of my own spreadsheets look like this—Google Sheets makes it so simple to capture information, share it, and return to it later for reference that it acts as my highly-structured note-taking tool.

But let’s assume that you have to deal with dozens of spreadsheets per day (or worse, that you have to share spreadsheets back-and-forth) and this is what someone sends you. It’s really boring, and if it was a large data set it would be *painful* to skim through.

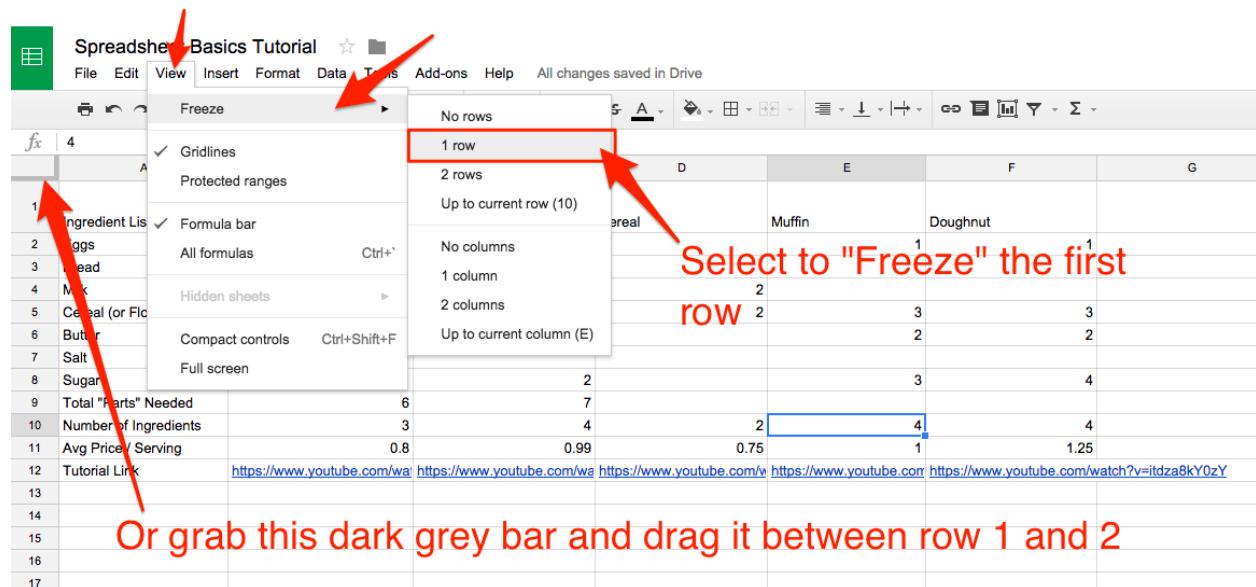
For the simple example above a lack of significant formatting is “okay.” It does the basics, storing my information and allowing me to save it. But it’s not something I would want to come back to each day.

Since I eat breakfast every morning, let’s take some time to make this spreadsheet more user-friendly with some formatting!

First we'll “Freeze” the first row in place. That means if we scroll down the spreadsheet, the first row will still be visible, no matter how much data lies below it. This allows you to have a long list and helps to keep tabs on what you're actually looking at.

There are two ways to freeze rows:

1. Click **VIEW > FREEZE > 1 ROW** in the navigation bar to lock the first row in place
2. Hover the dark grey bar in the top left of the spreadsheet (until it becomes a hand) and drag between rows 1 and 2



Freezing my header row is the first thing I do in *every* sheet I make.

Now, let's make the header text pop with some simple text formatting (remember, the text formatting tools are in the toolbar, just above your first row):

1. Drag to select the cells you want to format
2. Bold the text
3. Increase font size to 12pt
4. Center-align the whole row
5. Give give your cells a grey fill

	A	B	C	D	E	F	G
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	
2	Eggs	4	2		1	1	
3	Bread		2				
4	Milk			2			
5	Cereal (or Flour)			2	3	3	
6	Butter	1	1		2	2	
7	Salt	1					
8	Sugar		2		3	4	
9	Total "Parts" Needed	6	7				
10	Number of Ingredients	3	4	2	4	4	
11	Avg Price / Serving	0.8	0.99	0.75	1	1.25	
12	Tutorial Link	https://www.youtube.com/watch?v=ldza8kY0zY					
13							
14							

The next thing I’ll do to clean this up a bit is format my “Average Price / Serving” to be a dollar value. Here’s how things look at first:

	A	B	C	D	E	F	G
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	
2	Eggs	4	2		1	1	
3	Bread		2				
4	Milk			2			
5	Cereal (or Flour)			2	3	3	
6	Butter	1	1		2	2	
7	Salt	1					
8	Sugar		2		3	4	
9	Total "Parts" Needed	6	7				
10	Number of Ingredients	3	4	2	4	4	
11	Avg Price / Serving	0.8	0.99	0.75	1	1.25	
12	Tutorial Link	https://www.youtube.com/watch?v=ldza8kY0zY					
13							
14							

Before

Now, let’s clean that up with the “Format as \$” button for the specific values (or entire row) highlighted.

9	Total "Parts" Needed	6	7				
10	Number of Ingredients	3	4	2	4	4	
11	Avg Price / Serving	\$0.80	\$0.99	\$0.75	\$1.00	\$1.25	
12	Tutorial Link	https://www.youtube.com/watch?v=ldza8kY0zY					
13							
14							
15							
16							
17							

After Currency Formatting

You’ll see that your selected cells are now displayed as a dollar amount, rather than a regular number.

Note: if you perform this operation with the whole row / column highlighted, future values will take the formatting as well!

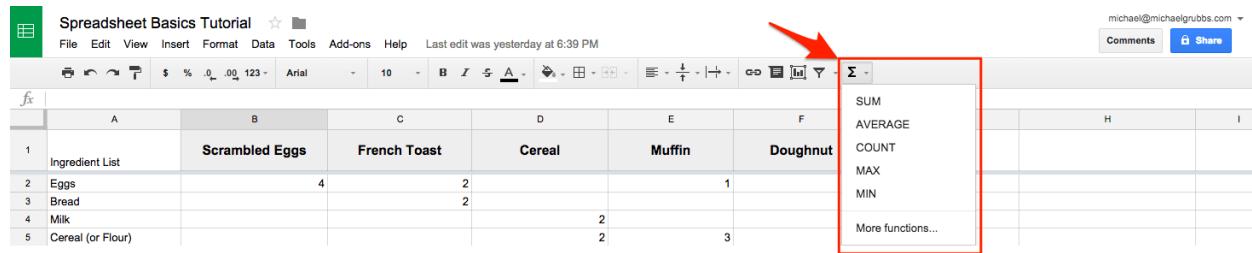
Now that you’ve got the hang of inserting and formatting your data, it’s about time we start actually

calculating some sums, averages, and more from your data!

3. Add, Average, and Filter Data with Formulas

Google Sheets, like most spreadsheet apps, has a bunch of built-in formulas for accomplishing a number of statistical and data manipulation tasks. You can also combine formulas to create more powerful calculations and string tasks together. And if you’re already accustomed to crunching numbers in Excel, the exact same formulas work in Google Sheets most of the time.

For this tutorial, we’ll focus on the five most common formulas, which are shown in the formula drop down menu from the top navigation.



You can click a formula to add it to a cell, or you can start typing any formula with a = sign in a cell followed by the formula’s name. Sheets will auto-fill or suggest formulas based on what you type, so you don’t need to remember every formula.

The most basic formulas in Sheets include:

- **SUM:** adds up a range cells (e.g. $1+2+3+4+5 = \text{sum of } 15$)
- **AVERAGE:** finds the average of a range of cells (e.g. $1,2,3,4,5 = \text{average of } 3$)
- **COUNT:** counts the values in a range of cells (ex: $1,blank,3,4,5 = 4$ total cells with values)
- **MAX:** finds the highest value in a range of cells (ex: $1,2,3,4,5 = 5$ is the highest)
- **MIN:** finds the lowest value in a range of cells (ex: $1,2,3,4,5 = 1$ is the lowest)
- **Basic Arithmetic:** You can also perform functions like addition, subtraction, and multiplication directly in a cell without calling a formula

We’ll explore these formulas by improving our breakfast spreadsheet.

Using the SUM Formula

Let’s start with adding up the **total number of ingredients** required for each recipe. I’ll use the **SUM** formula to add each value in the recipes and get a total amount.

There are three ways to use the basic formulas accessible via the top navigation:

1. Select a range then click the formula (this will put the result either below or to the side of the range).
2. Select the result cell (i.e. the cell where you want the result to appear), then click on the formula you want to use from the toolbar. Finally, select the range of cells to perform your operation on.
3. Type the formula into the result cell (don’t forget the = sign) then either manually type a range or select the range

I’ll demonstrate all three methods in the gif below. First, I’ll sum my ingredients by selecting a range, and clicking SUM from the formula menu. Second, I’ll select a result cell and highlight the range of cells to be summed together. Finally, I will demonstrate typing a formula and range manually.

	A	B	C	D	E	F	G
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	Lowest Price per Ingredient
2	Eggs		4	2		1	1
3	Bread			2			0.1
4	Milk				2		0.5
5	Cereal (or Flour)				2	3	0.2
6	Butter		1	1		2	0.25
7	Salt		1			2	0.05
8	Sugar			2		3	0.1
9	Total "Parts" Needed		6	7	4		
10	Number of Ingredients						
11	Avg Price / Serving						
12							
13							
14							

Note: In order to select a range of cells, click the first cell and hold SHIFT then click the last cell in the range. So if you want A1 through A10, click A1 then hold SHIFT and click A10.

When you’ve finished selecting the cells that you want to add together, press ENTER.

In my example, you see a grey help section pop up when I start typing the formula. When you create a formula for the first time, you’ll instead notice a blue highlight and a question mark next to the cell.

You can click the question mark to toggle help context for formulas on or off. These tips will tell you what type of information can be used in each formula, and will make your formula creation (especially when you start combining formulas) much easier.

Now that we have a formula set up to SUM all of the ingredients together, let’s make sure that it applies to all of the cells in that row. I’ll select my formula cell and drag the blue dot across the other cells to copy the formula to those cells.

	A	B	C	D	E	F	G
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	
2	Eggs	4	2		1	1	
3	Bread		2				
4	Milk			2			
5	Cereal (or Flour)				3	3	
6	Butter	1	1		2	2	
7	Salt	1			3		
8	Sugar		2			4	
9	Total "Parts" Needed	6					
10	Number of Ingredients						
11	Avg Price / Serving	\$0.80	\$0.99	\$0.75	\$1.00	\$1.25	
12	Tutorial Link	https://www.youtube.com/watch?v=itdza8kY0zY					
13							
14							

You’ll notice that when you copy the formula to a neighboring cell, it shifts the range that the new formula is referencing. For instance, in the “Scrambled Eggs” column it was `SUM(B2:B8)` but in “French Toast” it’s `SUM(C2:C8)`.

Using the COUNT formula

Now that we know how many parts are needed for each recipe, I’d like to know how complicated it is to make. I’ve simplified this by assuming that fewer ingredients means that the recipe is less complicated.

In order to count the number of ingredients in each recipe, I’ll use the `COUNT` formula.

The count formula essentially checks to see if the cells in a range are empty or not, and returns the total that are filled.

This formula will be set up in my spreadsheet the same way as my `SUM` row.

	A	B	C	D	E	F	G
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	Price per Unit
2	Eggs	4	2		1	1	0.33
3	Bread		2				0.1
4	Milk			2			0.5
5	Cereal (or Flour)				3	3	0.2
6	Butter	1	1		2	2	0.25
7	Salt	1					0.05
8	Sugar		2		3	4	0.1
9	Total "Parts" Needed	6	7	4	9	10	
10	Number of Ingredients	=COUNT(B2:B8)					
11	Avg Price / Serving	COUNT(value1, [value2, ...])					
12	Tutorial Link	Example	https://www.youtube.com/watch?v=itdza8kY0zY	https://www.youtube.com/watch?v=itdza8kY0zY	https://www.youtube.com/watch?v=itdza8kY0zY	https://www.youtube.com/watch?v=itdza8kY0zY	
13							
14							
15							

Here’s a trick we didn’t cover in the previous section, though: highlight the cell range that you’re trying to count and checking in the bottom right corner of your spreadsheet. If you’ve highlighted a pure list of numbers, Sheets will automatically **SUM** them for you and display the result. If you’ve highlighted a mixed range of numbers and text, it will **COUNT** the values.

You also have the option to perform any of the five number-based operations on a range of numbers by clicking the **SUM** button in the bottom right and selecting the new default formula from the pop-out menu. From then on, anytime you highlight a range it will perform the last-selected formula.

	A	B	C	D	E	F	G
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	Price per Unit
2	Eggs	4	2		1	1	0.33
3	Bread		2				0.1
4	Milk			2			0.5
5	Cereal (or Flour)			2	3	3	0.2
6	Butter	1	1		2	2	0.25
7	Salt	1					0.05
8	Sugar		2		3	4	0.1
9	Total "Parts" Needed	6	7	4	9	10	
10	Number of Ingredients	3	4	2	4	4	
11	Avg Price / Serving						
12	Tutorial Link	https://www.youtube.com/watch?v=...					
13							
14							
15							
16							
17							
18							

Sum: 6
Avg: 2
Min: 1
Max: 4
Count: 3

✓ Count Numbers:

So according to my spreadsheet, “Cereal” is the least complicated breakfast, but I’m still not convinced that an easy breakfast is worth it.

What if it costs too much? What if the extra effort of cooking another meal saves me money?

Let’s refine our decision by figuring out the average cost per serving of the breakfast choices by using the **AVERAGE** formula.

Using the **AVERAGE** formula

I’ve added some faux minimum and maximum prices per unit on my ingredients list to the right of my breakfast options. We’ll want to get an average price for each ingredient using the low and high rates, then multiply the resulting average price of the ingredient by its respective unit count in each recipe.

I’ll start by highlighting the range of values (in this case it’s two side-by-side rather than a vertical range) and selecting the **AVERAGE** formula from the toolbar.

This will drop the result into the column to the right of the maximum price column. Next, I drag the formula down to apply it to the other min and max price combinations.

I'll label my column "Average Unit Cost" so we know what we're looking at. Then, let's move on to calculating the cost of the breakfast using simple arithmetic.

Using Simple Arithmetic Formulas

We need to calculate the total cost of the breakfast by multiplying the average price of each ingredient by its unit count in the recipe. To accomplish this, manually type a formula into the “Avg Price” row.

Our basic arithmetic formula would look like this for the “Scrambled Eggs” column:

1 =\\$I2*B2+\$I3*B3+\$I4*B4+\$I5*B5+\$I6*B6+\$I7*B7+\$I8*B8

The \$ symbol before column I (the average prices) tells Sheets that no matter where we put the formula in our spreadsheet, we always want to reference the I column. That way, if we copy the formula to the other recipes, it will always use the average unit cost column rather than shifting the reference to the next column over when you drag to copy (like it did in the SUM and COUNT examples).

Spreadsheet Basics Tutorial

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

fx =\$I2*B2+\$I3*B3+\$I4*B4+\$I5*B5+\$I6*B6+\$I7*B7+\$I8*B8

If you click a cell, it will show the underlying formula here

	A	B	C	D	E	F	G
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	Lowest Price per Ingredient
2	Eggs	4	2		1	1	0.33
3	Bread		2				0.1
4	Milk			2			0.5
5	Cereal (or Flour)				2	3	0.2
6	Butter	1	1		2	2	0.25
7	Salt	1					0.05
8	Sugar		2		3	4	0.1
9	Total "Parts" Needed	6	7	4	9	10	
10	Number of Ingredients	3	4	2	4	4	
11	Avg Price / Serving	\$2.14					
12	Tutorial Link	https://www.youtube.com/watch?v=itdza8kY0zY	https://www.youtube.com/wa	https://www.youtube.com/wg	https://www.youtube.com/wv	https://www.youtube.com/watch?v=itdza8kY0zY	
13							

If you don’t want to type those values in manually, there are cleaner ways to perform this type of formula: You could accomplish the same price calculation by using this advanced formula:

1 =SUM(ARRAYFORMULA(B2:B8*\$I2:\$I8))

There are many formulas in Sheets that take care of complex tasks for you, many of which we’ll dig into in the next chapters.

Now that we have some working data and calculations, perhaps my coworkers (who are likely planning to eat breakfast tomorrow) might benefit from this sheet.

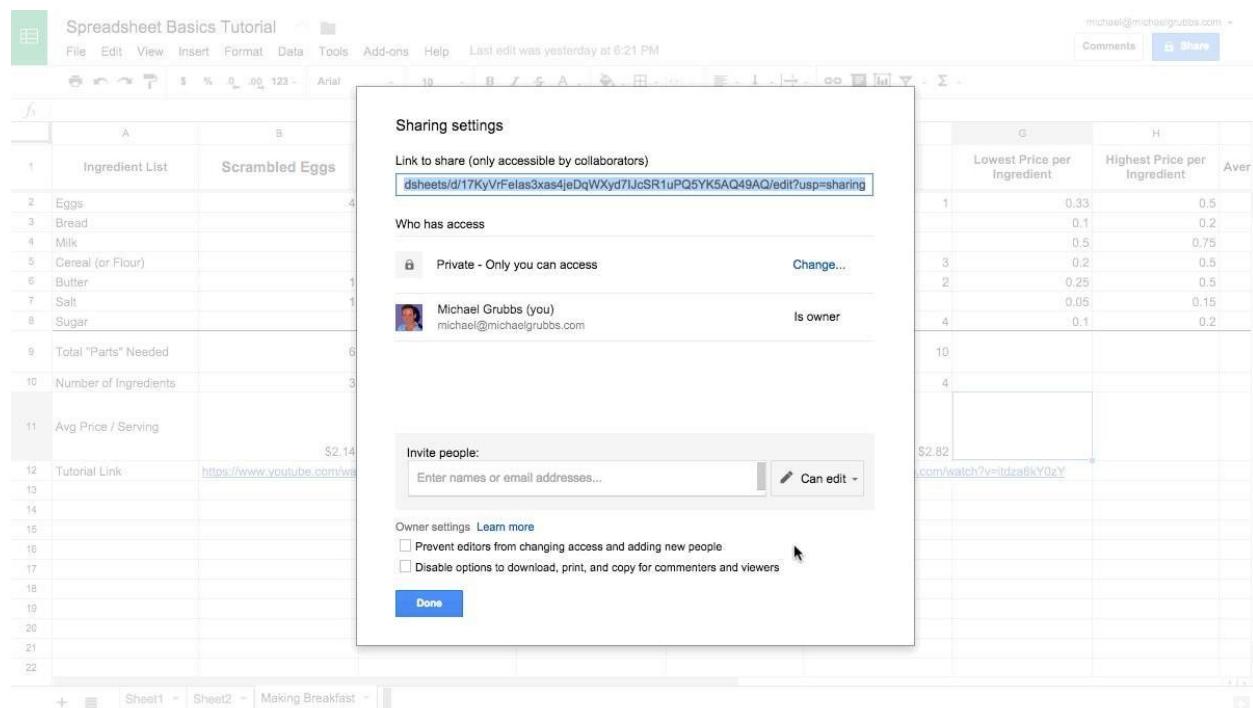
Let’s prepare to share our spreadsheet, and invite some collaborators to view, edit, and use our data.

4. Share, Protect, and Move Your Data

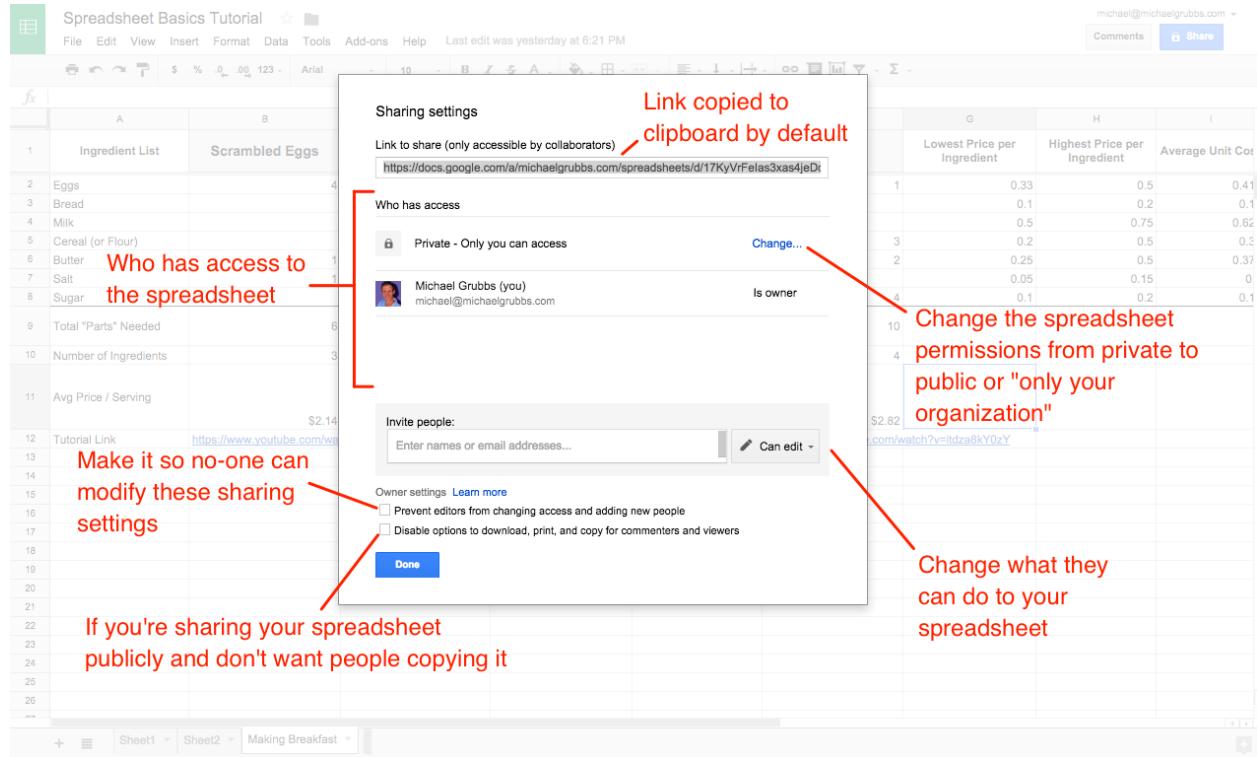
What makes Sheets so powerful is how “in sync” you’ll feel with your coworkers. Jointly editing a spreadsheet is one of the critical functions of Sheets, and Google has made it a seamless experience.

Here’s how it works:

1. Click either FILE > SHARE or use the blue “Share” button in the top right
2. Click “advanced”, then enter emails of who can view or edit your spreadsheet
3. Select any other privacy options and hit done



When you open the “advanced” sharing panel, you’ll see a number of options.

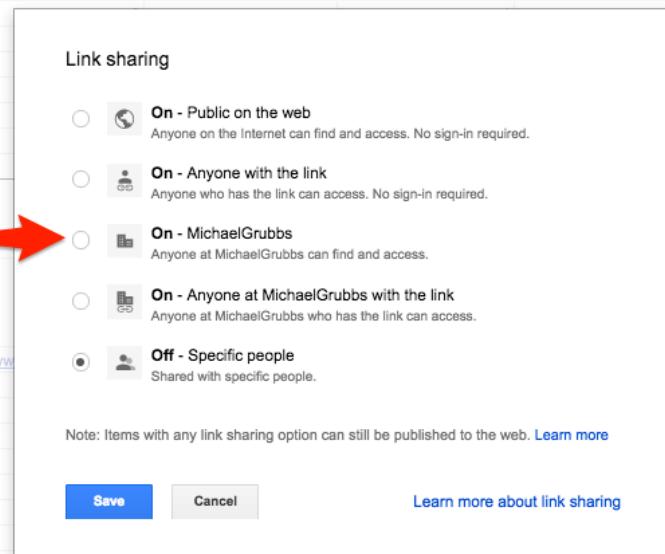


The default functionality when you click the “Share” Button is to copy a link to the spreadsheet to your clipboard.

When you share this link with someone via a messenger or email, if they click the link it will bring them to the spreadsheet. However, unless you’ve invited them via email (in the email field) and selected “Can Edit”, they will still need to request permission to make changes.

If you’d like to give anyone within your organization or company editor-level access, click the “change...” button in the “Who has Access” section and select “On - (Your Organization Name)**”. (Note: this option will only appear if you’re using [Google Apps for Work](#).)

Anyone in your company
who can access the folder
where it's stored can
access



Someone is “In your organization” when they have an email address and Google account for your company. In this case, I’ve named my “company” MichaelGrubbs, so everyone in my organization has an @michaelgrubbs.com email address and anyone signed in to one of those accounts can access the spreadsheet.

You can learn more about sharing and permissions here—you’ll want to make sure you are using the right permissions for the audience you’re sharing with.

Sharing Spreadsheets with Your Devices and Apps

Even though Google Sheets and Drive are built for sharing between users, you’ll notice that many times your spreadsheets are created as internal documents, and sharing is secondary to actually getting work done.

You can streamline your spreadsheet workflows and real-time data-sharing by taking advantage of these helpful add-ons:

1. **The Google Docs mobile apps.** You can use the Google Sheets mobile app to view and edit your spreadsheets, share links on the go, and add users. It’s a solid companion to—but not a replacement for—the web app.
2. **Google Drive sync to your desktop.** Google Drive allows you to easily upload files from your local desktop environment to your online Drive. This makes them accessible to your collaborators and also allows you to quickly import them into spreadsheets and other documents.
3. **A Third-Party tool like Zapier.** You can use Zapier to automatically add data to your spreadsheets, send files to your Google Drive account, alert you of changes to your Sheets... you name it!

Let’s continue working on our spreadsheet example to demonstrate using Zapier, an app integration tool, to make Google Sheets even more powerful.

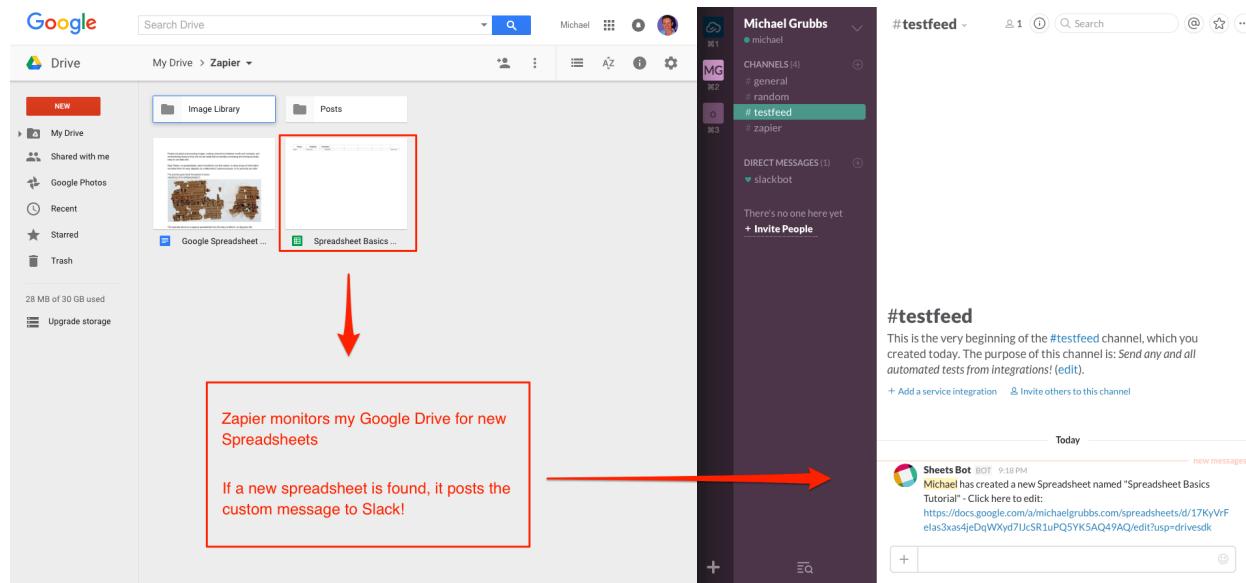
Rather than hitting the “Share” button on my spreadsheet to send it to my colleagues, I’d like to send a Slack message alerting them that I’ve created this new spreadsheet.

You can automatically send a message to a Slack channel with Zapier’s [Google Sheets Trigger](#) and [Slack Action](#).

Zapier Integration:

- Share new Google Sheets spreadsheets to Slack

I’ve set my Zap up to look for new Spreadsheets in my Google Drive then post the file name and a link to the spreadsheet in a Slack Channel.



This is great for updating your team when you create new documents that you’d like to quickly loop everyone in on.

You can set up filters and conditions to decide when to post, and you have complete control over what information you’d like to include in your message. You can also trigger messages based on different actions in Google Sheets—like when someone adds a new row or changes the data in a cell. Check out the [Zapier’s Google Sheets page](#) for more information on supported data and triggers.

Now let’s switch the direction of the data-flow and consider how our colleagues would interact with our Spreadsheet.

I’d like to allow myself and my team to interact with my spreadsheet and keep track of what they had for breakfast in a breakfast log. Without an automation tool like Zapier, tasks like this quickly become the reason that people fail to collaborate successfully using spreadsheets.

Think about it, if this were a normal spreadsheet without any automation, you’d be asking someone to:

1. Break out of their current activity
2. Track down the spreadsheet
3. Fill in a few pieces of potentially inconsequential data
4. Save and re-share this file (if it’s not already an online and synced document)

5. Repeat for any number of tasks / documents

This is where automating tasks becomes so vital.

Let’s set up our spreadsheet so that it has a clean sheet to receive some automated data. I’ll create a new worksheet using the + button in the bottom left.

The screenshot shows a Google Sheets interface with a blank spreadsheet titled "Spreadsheet Basics Tutorial". A new tab labeled "Breakfast Log" is being selected at the bottom. The "Breakfast Log" tab is currently active, showing a clean sheet with columns A through N and rows 1 through 16. The status bar at the bottom indicates "Making Breakfast" is the active tab.

Now, I’ll use Zapier again and make Slack the triggering action with Google Sheets on the receiving end of the automation (the “Action” side of the Zap).

Zapier Integration:

- Add Slack messages to a Google Sheets spreadsheet

I’ve set up my Zap to instantly take a Slack message posted into a dedicated channel and create a new row in the breakfast log along with the time and user who posted it.

The screenshot displays both Google Sheets and Slack interfaces. On the left, the "Breakfast Log" sheet in Google Sheets contains the following data:

Person	Breakfast	Timestamp
michael	Scrambled Eggs	1449197844
michael	French Toast	1449197847
michael	Cereal	1449197850
michael	OMG THIS IS COOL	1449197855

On the right, the Slack "#zapier" channel shows the same messages, indicating they have been successfully integrated into the Google Sheets spreadsheet.

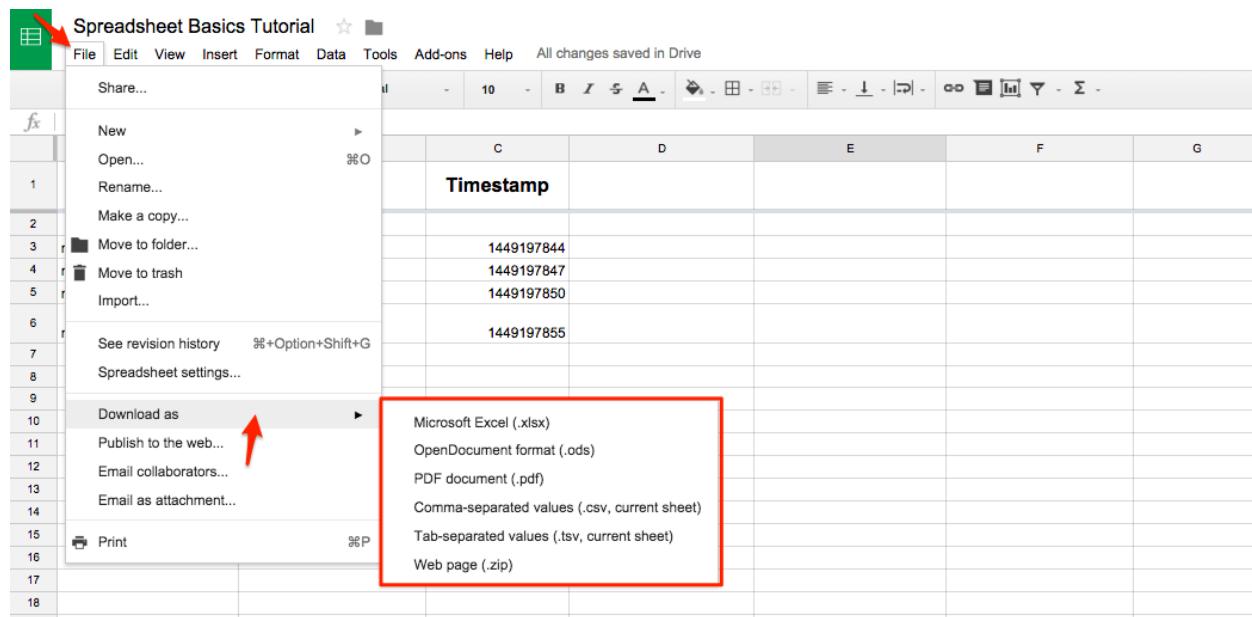
And this can work for [hundreds of other applications](#) that you can use as Triggers or Actions with Zapier. You can send information to your spreadsheet via email, monitor your social channels, set it on a schedule; there are dozens of different ways to accomplish any given task with the apps you’re already using.

Zapier Integrations:

- Save new Typeform entries to a Google Sheets spreadsheet
- Save Gmail emails matching certain traits to a Google Spreadsheet
- Save Twitter mentions to a Google Sheets spreadsheet
- Add new FullContact business cards to a Google Sheets spreadsheet

Downloading Your Data

If you need to send your files to external collaborators, upload a file into another system, or just like having backups for posterity, then turn towards one of Google Sheets’ many data export options.



The most common exports will be either .xls (Excel document) or .csv (comma-separated values). If you’re not sure which format to use, a .csv is usually the best bet.

Use Your Spreadsheet in Offline Mode

If you love what you’ve seen so far but were worried that you wouldn’t be able to use Sheets without a connection, then fear not. Google Sheets has an “**Offline Mode**” that will automatically sync your changes to the document when you reconnect to the internet.

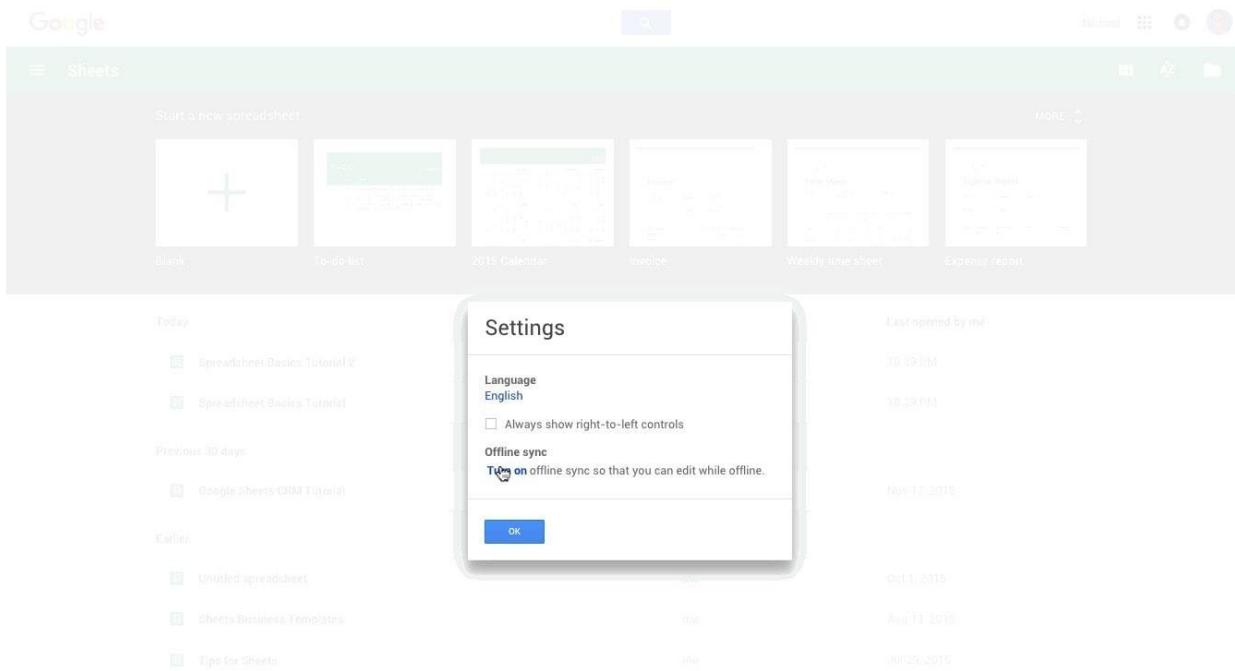
This is useful for any situation where you’d need to treat Google Sheets like a desktop application—on a flight or a road trip, for example.

Here’s what you’ll need:

1. [Google Chrome](#)
2. [Google Drive Chrome Web App](#)
3. [Google Drive Sync](#)

Instructions for setting up your offline sync are really straight-forward, but the bulk of the process is just downloading and using the three core components above.

Actually turning it on looks like this (get ready to be amazed):



And just like that, you can use Google Sheets even when you’re offline—no WiFi necessary.

Note: For more tips on using Google Sheets offline, jump to the end of [chapter 6](#).

That's All For Now

You’ve done it: you learned how to make new spreadsheets, add data and format it, use formulas to calculate values, share your spreadsheet, and collaborate on it with others.

Google Sheets is a powerful tool—it’s everything you’d expect from a spreadsheet, with the extra perks of an online app. While the example spreadsheet that we created may have been a bit silly, the practical applications of using Sheets for your workflows (both business and personal) are limitless.

Whether you need to make a budget, outline your next proposal, gather data for a research project, or log info from any other app that connects with [Zapier](#), a Google Sheets spreadsheet can bring your data to life.

And with everything stored in Google Drive, you’ll never worry about losing your files again—even if your computer dies.

Now that you know how to make a spreadsheet, it’s time to fill your spreadsheet with data. The best way to do that in an online spreadsheet is with a form—and in chapter 2, we’ll look at the free [Google Forms](#) tool that can help you gather data and save it directly to your spreadsheet.

Enjoy? Read and share this chapter online: zpr.io/uB9n

Written by freelance writer [Michael Grubbs](#).

Image Credit: AP Photo/Egypt’s Supreme Council of Antiquities

Chapter 2: Google Forms Guide—Everything You Need to Make Great Forms for Free



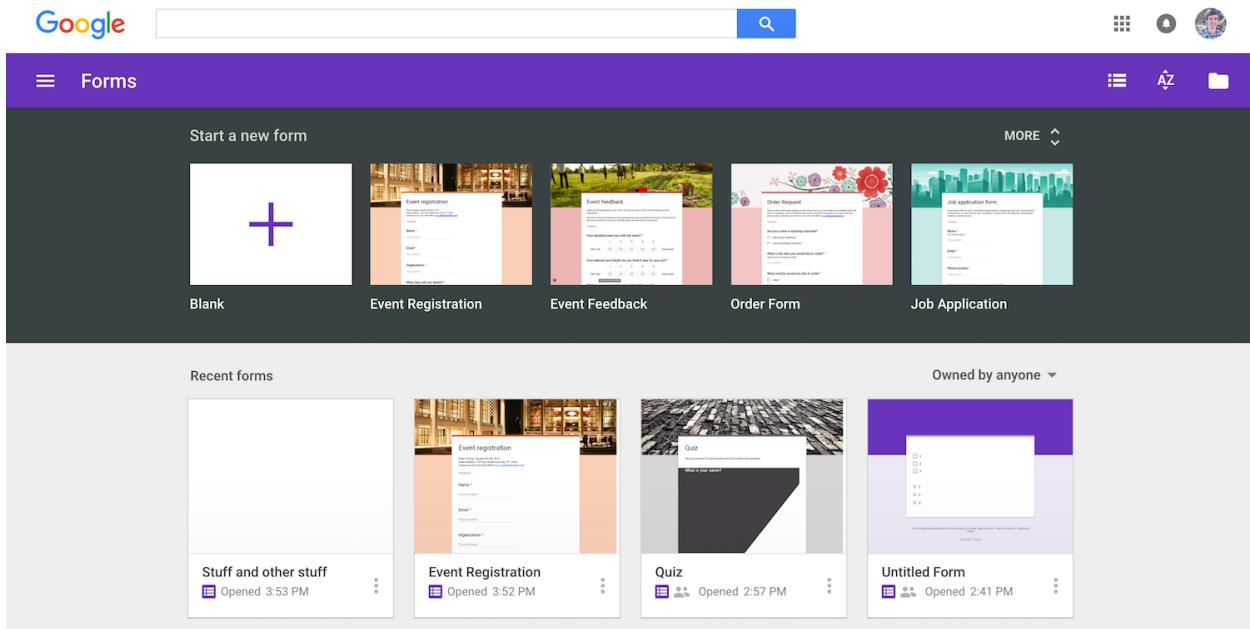
Forms are among the internet's most versatile tools. Whether you need a contact form or a checkout page, a survey or a student directory, a form is all you need to easily gather that information. With Google Forms, it only takes a few minutes to make one for free.

[Google Forms](#)—along with Docs, Sheets, and Slides—is part of Google's online apps suite of tools to help you get more done in your browser for free. It's easy to use and one of the simplest ways to save data directly to a spreadsheet, and it's the best sidekick to Google Sheets' spreadsheets.

When you need to gather data for your spreadsheets, a form is your best friend. In this chapter, let's take an in-depth look at Google Forms' features, hidden tools, and add-ons to help you make the forms you need in minutes.

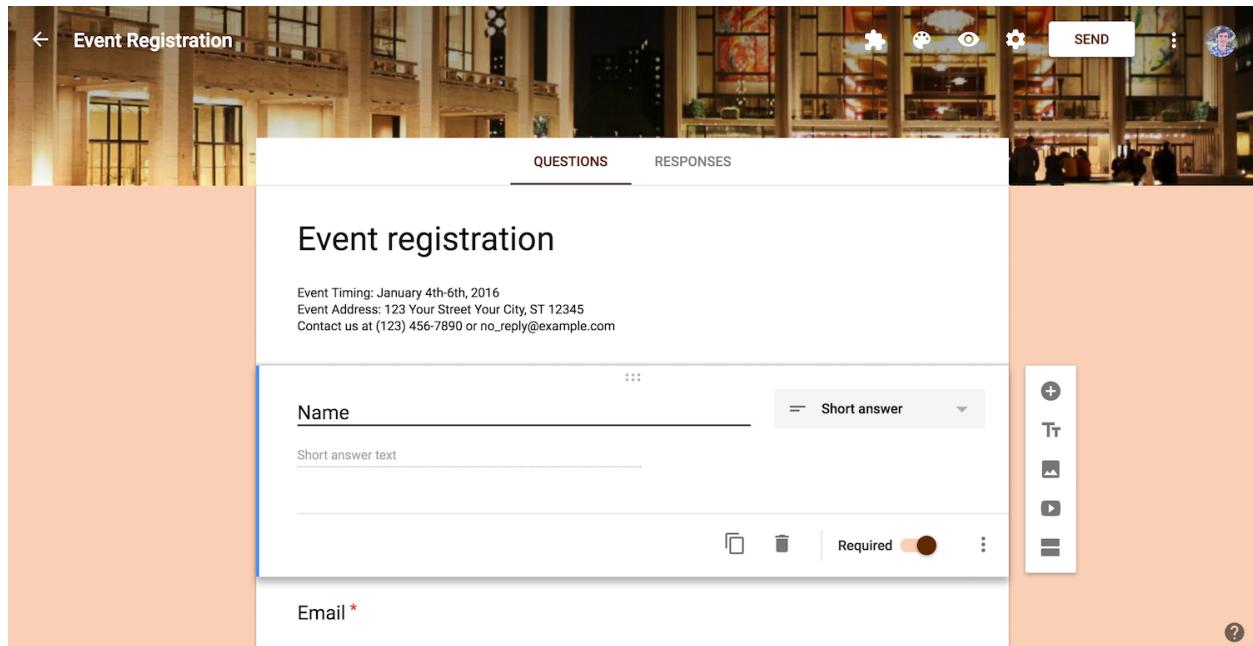
Tip: Want a handy reference of the Google Forms tips from this chapter? You can download a copy of it for free from [our site](#).

A Tour of Google Forms



Google Forms started life as a Google Sheets feature in [2008](#), two years after Sheets' original launch. You could add a form to a spreadsheet, format it in a separate sheet, and see your form responses in another sheet. It was basic, but it got the job done.

Google added more features to Forms over time, then finally turned it into its own standalone app in [early 2016](#). Today you can make and manage forms at docs.google.com/forms, with templates and quick access to all your forms in one place.



Google Forms is now a full-featured forms tool that comes free with your Google account. You can add standard question types, drag-and-drop questions in the order you like, customize the form with simple photo or color themes, and gather responses in Forms or save them to a Google Sheets spreadsheet.

Let's start out by making a quick contact form so you can see how easy it is to use.

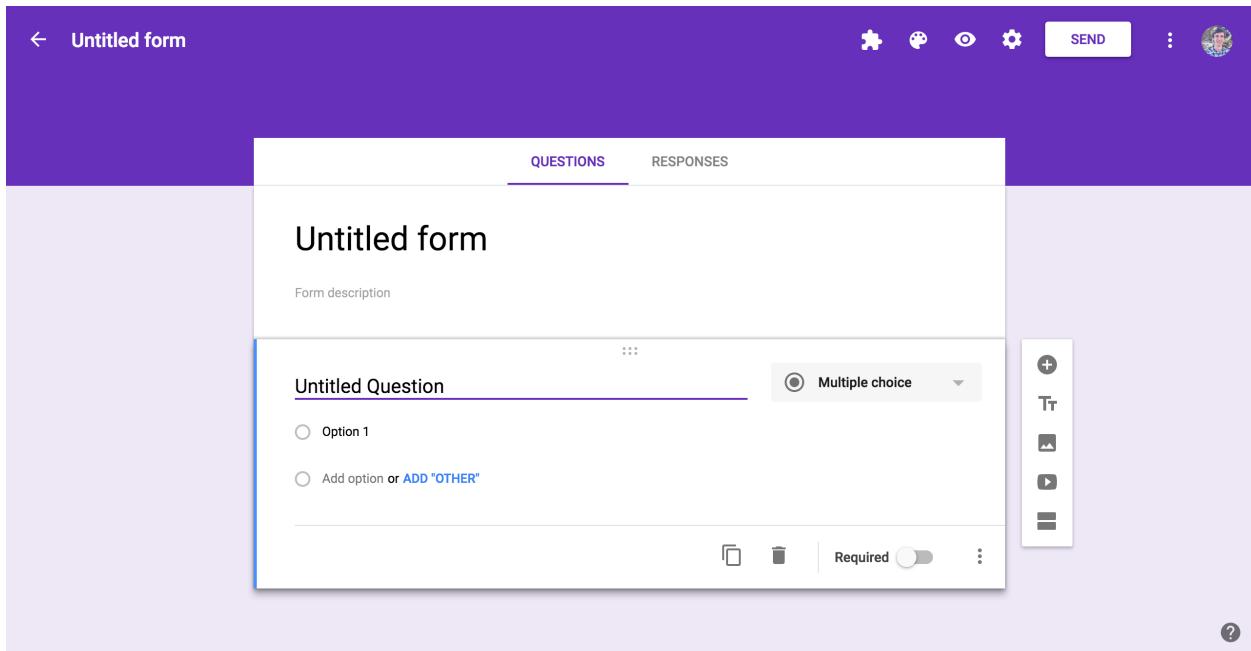
Building Your First Google Form

The screenshot shows a Google Sheets document titled "Testsheet". The "Tools" menu is open, displaying options like "Create a form", "Script editor...", "Spelling...", and "Enable autocomplete". A red arrow points to the "Create a form" option. The main area of the screen shows a table with columns A, B, and C, and rows 1 through 7. Row 1 contains a "Name" header. Rows 3 and 4 contain "Task Lists" entries with corresponding icons. Rows 5, 6, and 7 show links to external apps: ASANA, DAPUI, and INSIGH.

The simplest way to start building a form is right from the Google Forms app. Go to docs.google.com/forms, then either choose a template or start a blank form.

There's also a link to Google Forms in Docs, Sheets, and Slides: click *File* -> *New* -> *Form* to start a new

blank form. Or, in Google Sheets, click *Tools* -> *Create a Form* to start a blank new form that's automatically linked to that spreadsheet. That's the quickest way to get data into a new or existing spreadsheet: open the spreadsheet where you want the data, start a form, and the form responses will automatically be saved there without any extra clicks.

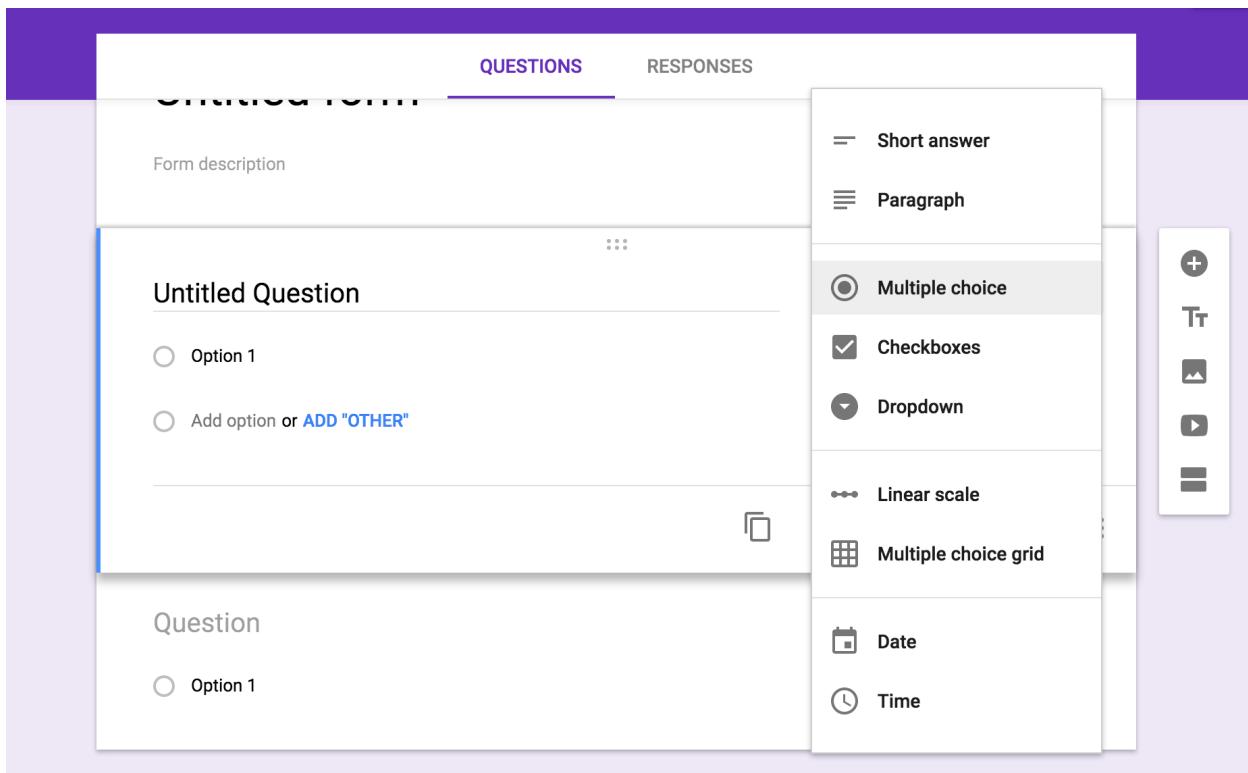


The Forms editor is straightforward. Your form fills the center of the screen, with space for a title and description followed by form fields. Click a form field to edit it and add a question. Use the dropdown box next to the field to choose the field type, such as multiple choice, checkboxes, short answer, and so on.

Google Forms offers several settings options. The floating toolbar on the right lets you add more form fields. On the top right menu you can change the form's color scheme, preview the form, use the *Send* button to share the form, and access other extra options, including installing add-ons for Forms. Switch from the *Questions* tab to the *Responses* tab in your form editor to see current responses to your form and link it to a spreadsheet.

All you need to do is add your questions and send the form out, so let's look at the form options and what you can do with each.

Google Forms Field Options



Google Forms includes 12 field types: 9 question types, along with text, photo, and video fields. Just click the + icon in the right sidebar to add a new question, or click the text, photo, or video icons to add media to your form.

Each field includes a copy button to duplicate the field, for a simple way to add similar questions to your form. There's also a delete button, options to make the field required, and a menu with extra options on the right side. You can switch question types at any time, though do note that your field settings and questions will reset if you switch from multiple choice, checkbox, or menu to any of the other question types. And, to quickly fill in questions in fields, just press enter to start adding another one.

Quick Tip: Accidentally remove a form element or add one too many? Just tap CMD + Z or Ctrl + Z to undo, just as you would in a document.

Here's what each field type offers:

The screenshot shows a Google Form interface. At the top, there are tabs for 'QUESTIONS' and 'RESPONSES'. The 'RESPONSES' tab has a value of '11'. Below the tabs, the form title 'Workgroup Feedback' is displayed in a large, bold font. Underneath the title, there is a short paragraph: 'Thanks for being part of our workgroup this week!' followed by a horizontal line. Below this line, another paragraph reads: 'The following 10 questions are to help us continue to improve our courses and workgroups. To refresh your memory about our automation training, be sure to check the Zapier Learning Center first: zapier.com/learn/'.

Title and Description: The title and description fields are added automatically to every form and field—though the description is hidden by default on most fields—and you can add an extra title block anywhere with the Tt button. You can leave the title and description blank on questions, but the main form title must be filled in.

The description doesn't include formatting options—though you can include links (in shortened format, like `zapier.com`, or as the full length style like `https://zapier.com/`), and form readers can click those to see your site or related material.

This screenshot shows the configuration for a 'Short answer' question in the Google Form editor. The question text is 'What's your email address?'. The validation dropdown menu is open, showing options: 'Text', 'Contains', 'Doesn't contain', 'Email address' (which is selected and highlighted in grey), and 'URL'. Other settings visible include 'Text' for the validation type, 'Custom error text' input field, and a 'Required' toggle switch which is turned on.

Short Answer: This field is perfect for asking for small bits of text: names, email addresses, values, and more. You get one line of text to answer the question—though your users could actually enter as much text as they want.

To make sure you get the answers you need, this field includes number, text, length, and regular expression data validations. Number validations help you watch for ranges of values, while text validations are perfect to watch for email addresses or links.

Paragraph: Much the same as the short answer field, this is a field for text—long-form text. Length and regular expression are the only data validations available here, so only use it when you want detailed feedback or longer notes in the answer.

The screenshot shows a Google Form interface. A question "What's your favorite notes app?" is displayed, followed by a list of four options: "Evernote", "OneNote", "Apple Notes", and "Add option or ADD 'OTHER'". The "Multiple choice" field type is selected. On the right side, there are icons for adding more fields, and below the form, there are standard edit controls (copy, delete, required toggle, and more options).

Multiple Choice: The default field for new questions in a Google Form, multiple choice lets you list options and have users select one. You can then have the form jump to another section based on the answer or have the answer options shuffled to prevent bias.

Checkboxes: Similar to multiple choice, this field lets you list answers and have users select as many as they want. It also includes data validation to require users to select a specific number of options. It doesn't include section jumps, however.

Dropdown: Want all of the answer options in a menu? This field's for you. It's the exact same as the multiple choice field—with the same section jump and shuffle options—only this time the answers are in a menu. This is useful for keeping your form compact when there are many answer options.

How much do you like Zapier

Linear scale

1 2 3 4 5

1 to 5

1 😞

5 ❤️

Required

Linear Scale: The field to let people select a number in a range, linear scale lets you set a scale from 0 or 1 to 2-10 with labels for the lowest and highest options. And yes, emoji work for labels, too.

What are your thoughts on the following items?

Multiple choice grid

Row 1. iPhone	X	Column 1. Hate it	X
Row 2. Tesla Model S	X	Column 2. It's ok	X
Row 3. Zapier	X	Column 3. Love it	X
Row 4. Milk	X	Column 4. Add option	
Row 5. Add option			

Require one response per row

Multiple Choice Grid: This is perhaps the most confusing field, as the fields are displayed in a list rather than in the grid as they'll appear to readers. Essentially, you'll add questions as rows, and options about them as columns.

You can include as many rows and columns as you want, though do note that readers will have to scroll right

to see more than 6 columns on desktop browsers or just 3 columns on mobile. You might want to keep the form preview open while setting up grid questions—just tap the eye icon on the top right, and refresh that page to see your changes.

Also, in addition to the standard option to require responses, the grid lets you require a response per row and can also limit users to only one response per column.

The screenshot shows a Google Form interface. A question "When would you like to visit the White House?" is displayed above a "Date" input field. The input field has a calendar icon and a dropdown menu labeled "Date". Below the input field are sections for "Month, day, year" and "Time". At the bottom of the form are standard controls: a blue "Required" toggle switch, a trash bin icon, and a three-dot menu icon. To the right of the form is a vertical toolbar with icons for adding a new section (+), text (T), images (camera), video (play button), and a separator line (=).

Date: Want to ask for a specific date or time, perhaps to schedule an event or log an activity? The date field is the one you want to select. It can ask for a date and month and, optionally, the year and time as well.

Do note that the date format will be shown in the default format for your location. If your Google Account is set to US English locale, dates will be formatted as MM/DD/YYYY; UK English accounts, on the other hand, will show dates as DD/MM/YYYY. Your users will see the date options in *your* locale's date format, unless they're logged into their Google Account, so be sure to keep that in mind when creating forms.

Tip: You can change your Google Account locale along with your account language at myaccount.google.com/language.

Time: Time lets you request a length of time in hours, minutes, and (optionally) seconds, for a way to log how long an activity took.

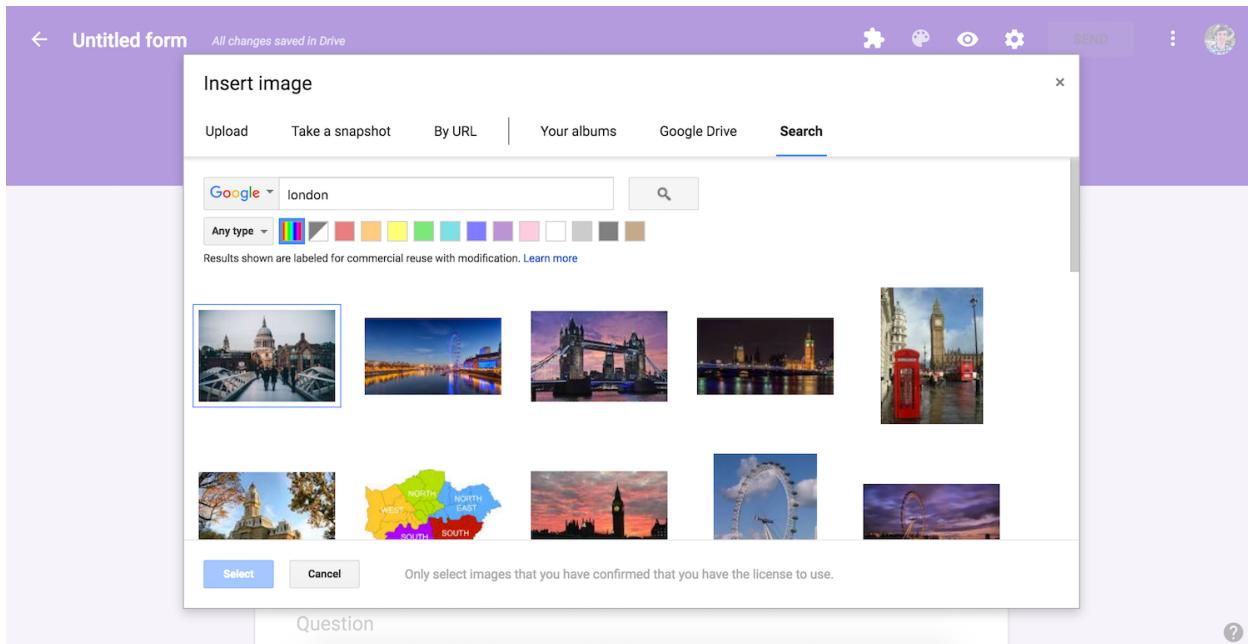


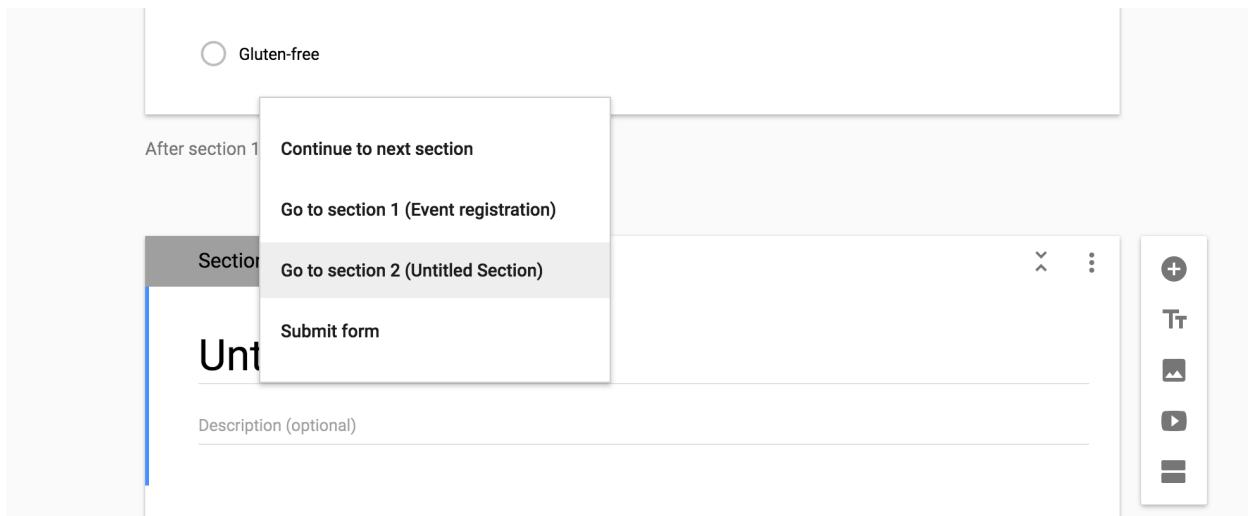
Image: Google Forms lets you upload an image, insert one from a link or Google Drive, or take a photo from your own webcam (as long as you have Flash installed). Or, you can search Google Images for photos, including royalty free stock photo and images from LIFE that are licensed to use inside Google Drive.

Video: Google Forms only supports YouTube videos, which you can add either through search or with a link.

Whether you've added images or videos, your form entry will have the standard title and description, along with options to resize and show the video or image centered, left, or right aligned.

With the questions out of the way, let's pull them together and make a complete form with sections and logic to route users to the correct questions.

Form Sections and Logic



Simple contact forms only need a few fields, but longer surveys can quickly get overwhelming with dozens of questions on one page. That's where sections come in handy: They let you break your form up into chunks to answer one set of questions at a time.

Just click the last button the right toolbar to add a section below the current question. Each section includes its own title and description, along with an arrow button at the top to show or hide questions and keep your form editor tidy.

You can drag-and-drop questions between sections, but you can't rearrange full sections. You could, instead, move the questions out and then delete that section. Or, if you want to reuse a section, just click the section's menu and select *Duplicate section* for another copy of those questions.

The screenshot shows a Google Forms editor. A multiple-choice question titled "Dietary restrictions" is displayed, with the "Vegetarian" option selected. A context menu is open over the "Vegetarian" option, listing four actions: "Continue to next section", "Go to section 1 (Event registration)", "Go to section 2 (Untitled Section)", and "Submit form". The "Go to section 2" option is highlighted. Below the question, there's a note "After section 1 Continue to next section" with a dropdown arrow. The form toolbar at the bottom includes icons for preview, trash, required status (which is turned on), and more options.

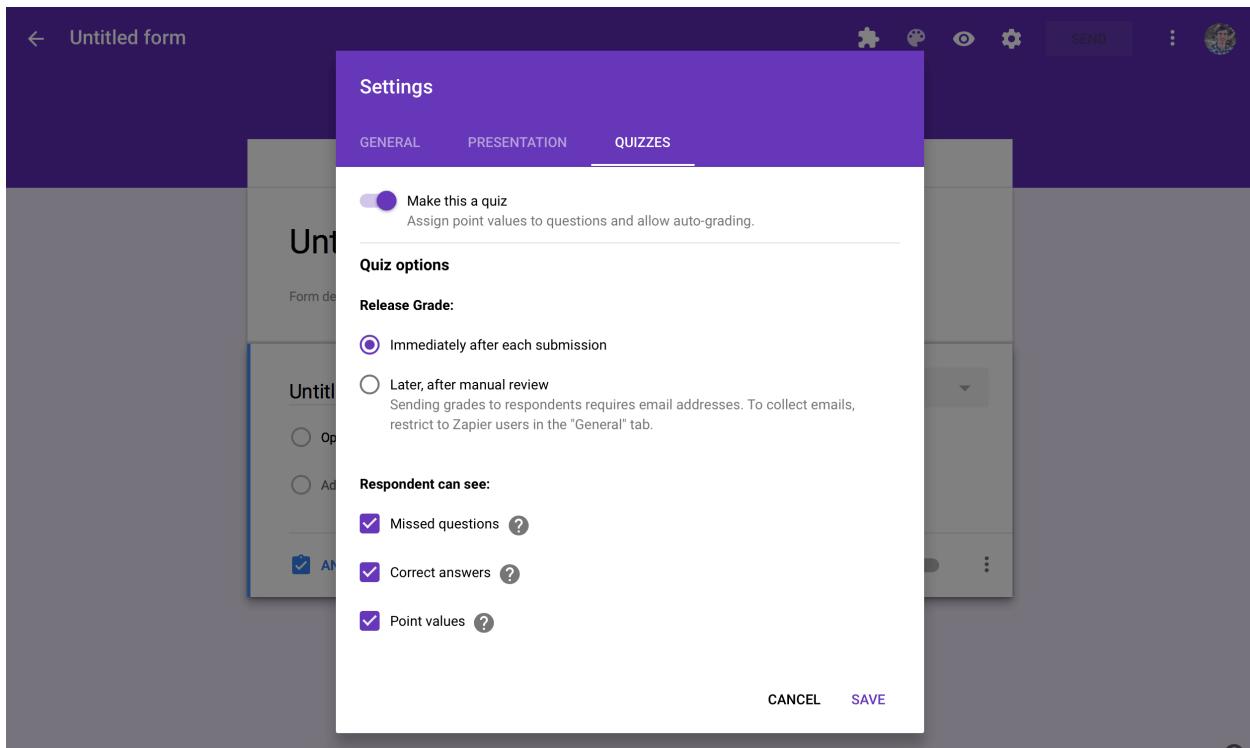
That's a perfect way to start a form with logic jumps. Say you want to ask some followup questions based on their answer—perhaps to ask which meat an event attendee wants, but only if they're not vegetarian.

Just add sections with the optional questions, and then either add a section jump to the individual multiple choice, checkbox, or menu questions, or to the section itself. Make sure to think through where people who *shouldn't* see those questions are sent, too, perhaps with alternate questions in a separate section. Or, you can send them straight to the end of the form to submit their answers, if there's nothing else to ask.

Be creative: Form sections and jumps let you turn your form into a [mini-app](#), and they can be a great way to condense detailed surveys down into only the most important questions for each person.

Quick Tip: Be sure to *not* select your current section's name, or you'll end up making a loop where respondents can never get to the end of your form.

Build a Quiz



Another way to make an interactive form is with Google Forms' [Quiz mode](#). Inside your form settings, you'll find a *Quizzes* tab. Select *Make this a quiz*, and then choose whether to show the results immediately after the form is submitted or later once you review the answers. If you choose the latter, your form will need to require respondents to sign in with their Google account.

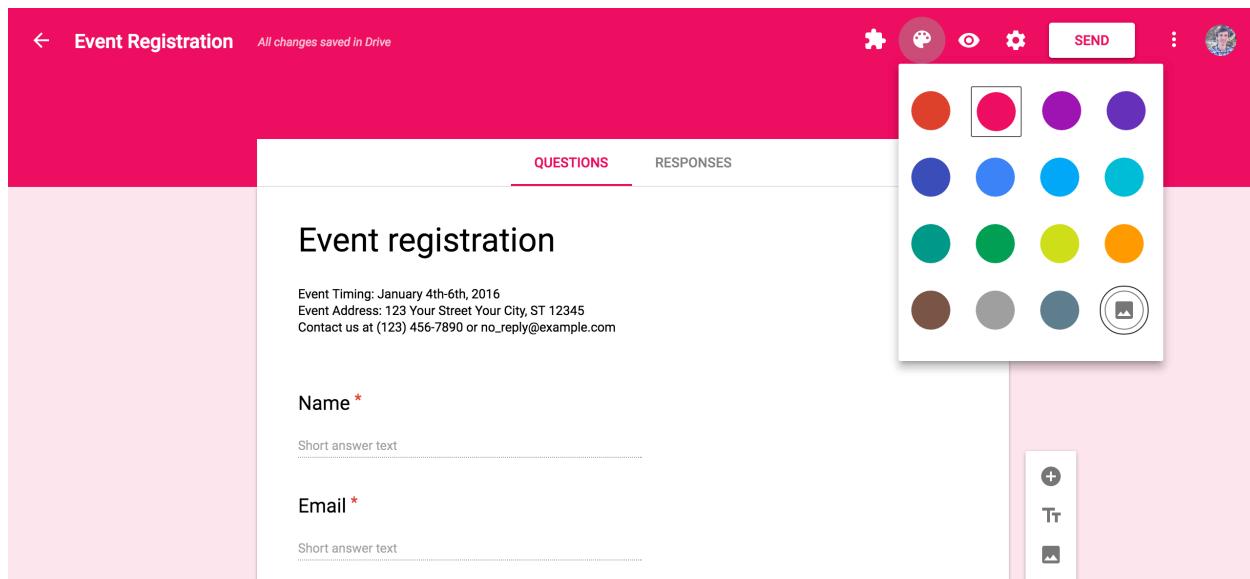
You can then choose to show missed and correct answers, as well as a value for each option if you'd like.

The screenshot shows a Google Forms quiz interface. At the top, a purple bar has a checkbox labeled "Choose correct answers:". Below the question, "What's the square root of 4", there are five options: 1, 2, 3, 4, 8, and 16. Option 2 is highlighted with a green background and a green checkmark, indicating it is the correct answer. To the right of the question, there is a text input field with "2" and a dropdown menu with "points". On the far right, a vertical toolbar contains icons for adding, text, images, video, and lists. At the bottom left of the question area, there is a "ADD ANSWER FEEDBACK" button, and at the bottom center, there is an "EDIT QUESTION" button.

With that enabled, you'll see a new *Answer Key* button on the bottom left of each question. Click it, then select the correct answer for the question. You can optionally add answer feedback both for correct and incorrect answers, with a link for respondents to view more info if you'd like.

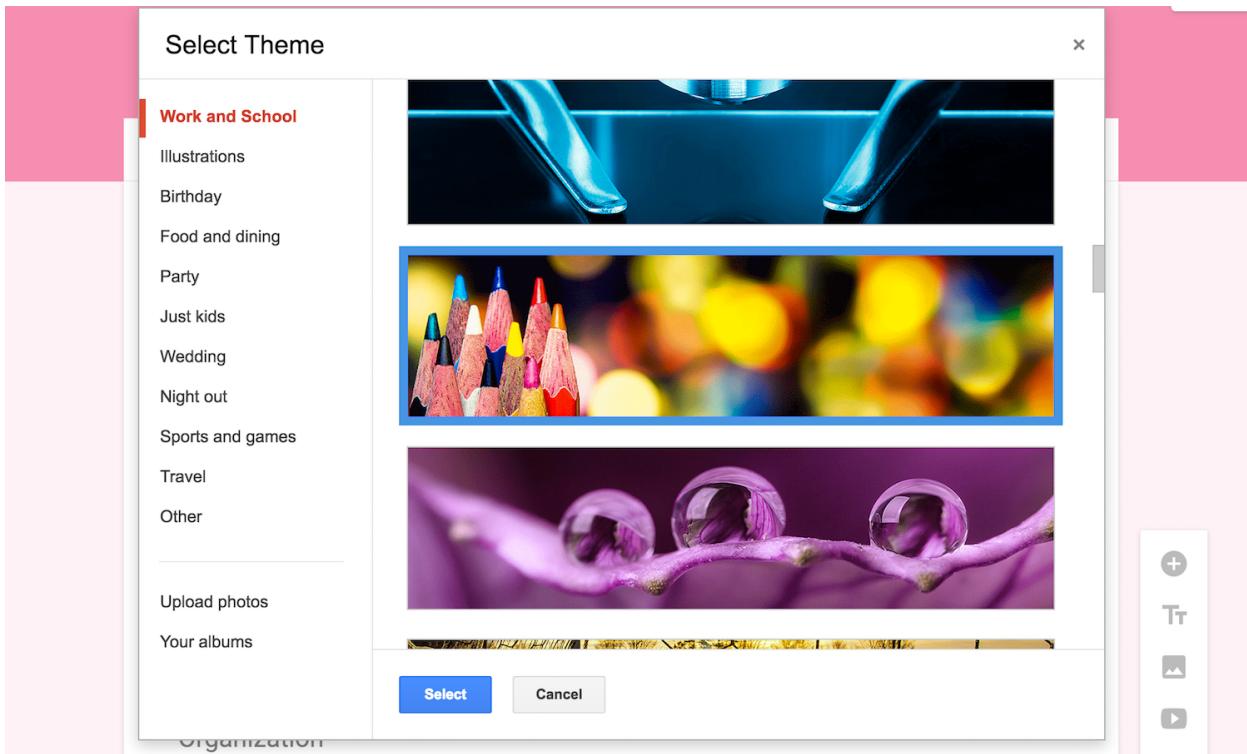
Note: Quizzes only work with multiple choice, checkbox, and drop-down questions.

Design Your Form



There's one spot where you don't have much option: your form's design. Google forms include a header color or image, along with lighter accent color as the background. By default, new forms come in purple, while template forms often include an image.

Click the color palette icon in the top right to tweak your design, if only a little. You can choose from 15 colors, each a darker color for the header with a complimentary background shade.

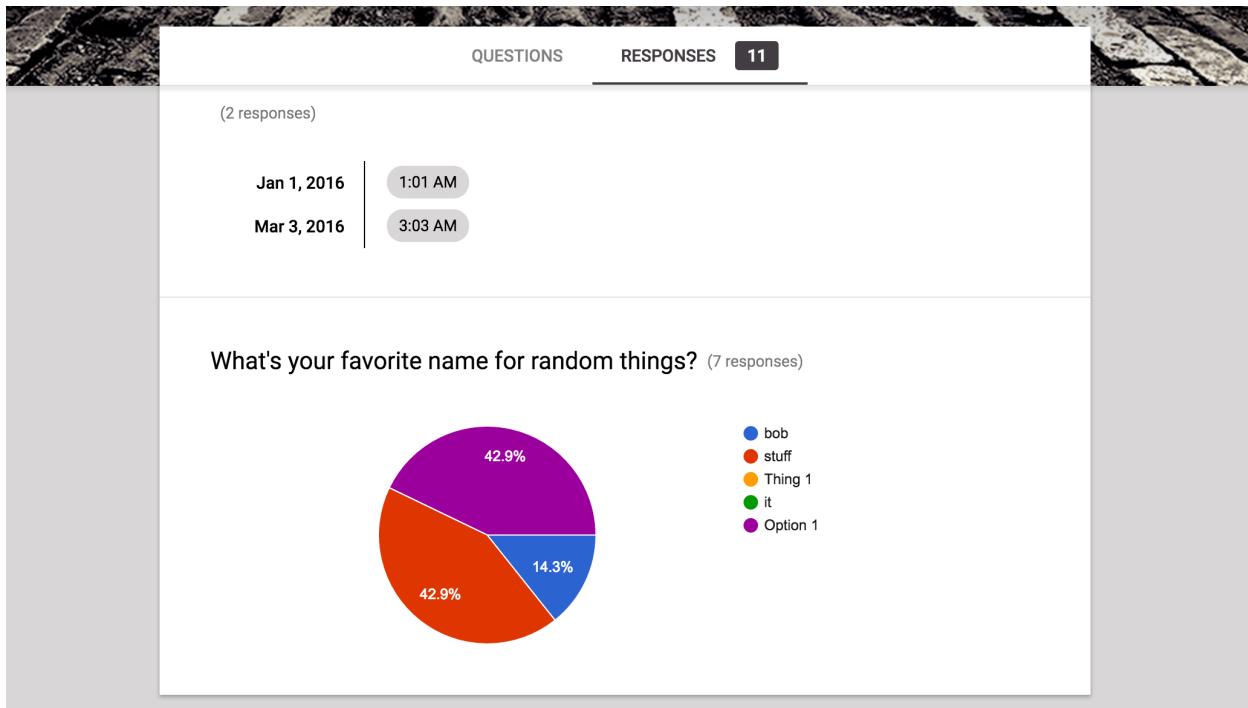


Click the photo icon to select a photo or Google Doodle-style drawing from Google’s library as your form’s header photo. Or, select one of your photos from Google Drive or upload a new one and crop it to fit in as a form header. Forms will then automatically select a background color that matches your photo.

Some of the included header images are animated GIFs with burning candles, moving balls, and more. Unfortunately, if you add them to your form, they appear as a standard still image. Perhaps in the future Google Forms will get GIF support—for now, images and colors are the only design options in Forms.

Note: If you add your own photo as a header, Google will only save the cropped version of it to Drive.

Store Form Responses in a Spreadsheet



Once you've created the form, you don't need to do anything extra to store respondents' answers in Google Forms. By default, it'll save each answer in the *Responses* tab, showing summary graphs and lists of answers. An individual response view shows the live form along with the results from each respondent.

That's great for quick form results, but for more tools to analyze answers, you can link your form to a Google Sheets spreadsheet. Just click the green Sheets icon in the Responses tab or click *Select Response Destination* in the menu, then create a new spreadsheet or select an existing one to store the answers.

Note: You can store results from multiple forms in one spreadsheet; each form's responses will be saved to a separate sheet. You cannot, however, save multiple forms' responses to a single sheet.

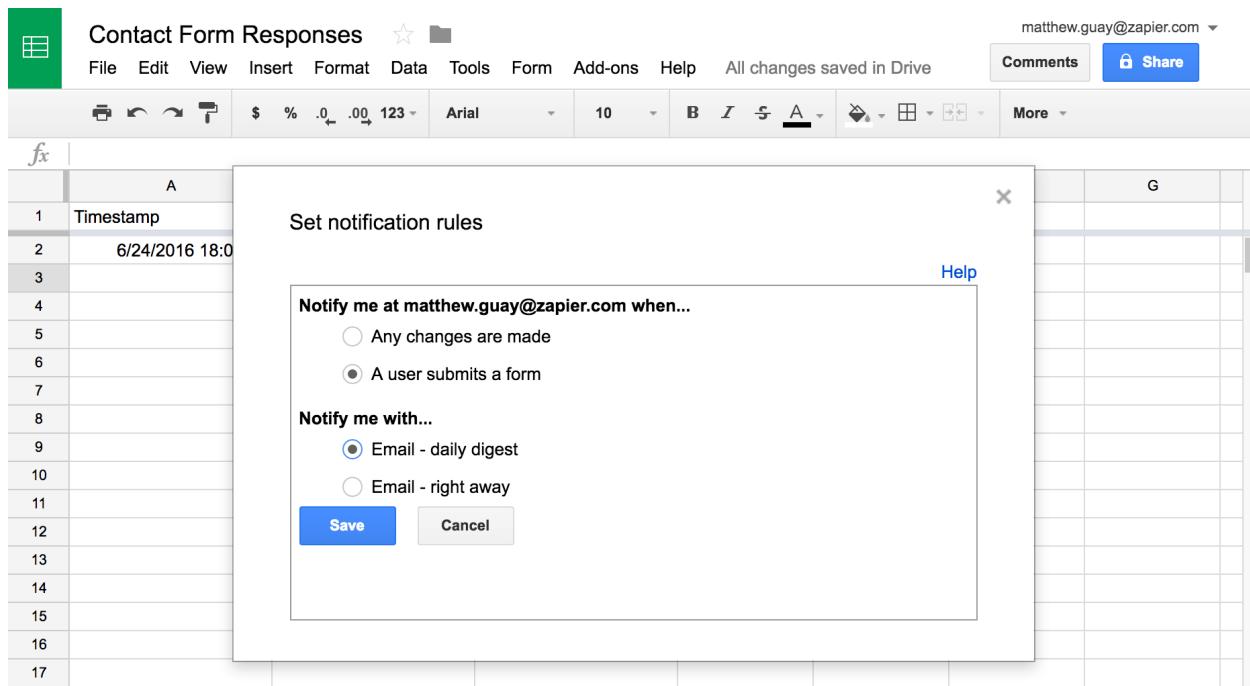
The screenshot illustrates the integration between Google Forms and Google Sheets. On the left, a 'Contact Form' is displayed with a message stating 'Your response has been recorded.' Below it is a link to 'Submit another response'. On the right, a 'Contact Form Responses' sheet in Google Sheets shows the following data:

	A	B	C	D
1	Timestamp	Email	Message	
2	6/24/2016 18:00:37	bob@techinch.com	Hi	
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

One great thing about saving Google Forms entries to a Google Sheets spreadsheet: It's *fast*. Change your form field names, and they're automatically updated in your spreadsheet. Get a new entry, and it'll show up in the spreadsheet as soon as your recipient clicks *Submit*.

Note: You can change form questions and answer options at any time, but if you do, it won't change entries that have already been added to your spreadsheet.

Google Forms always keeps a full copy of all your form data, so if you accidentally delete something from your spreadsheet, don't worry. Just open your Form response settings and unlink it from your spreadsheet, or click *Form* -> *Unlink Form* inside your spreadsheet. Then, reconnect the form to your spreadsheet, and Google Forms will add all the form data back to a new sheet.



With your form data in the spreadsheet, you can use [Google Sheets' formulas](#) to calculate values or [make custom graphs](#) to visualize your data. [Add conditional formatting](#) to the spreadsheet, and you'll be able to see patterns in your form responses at a glance.

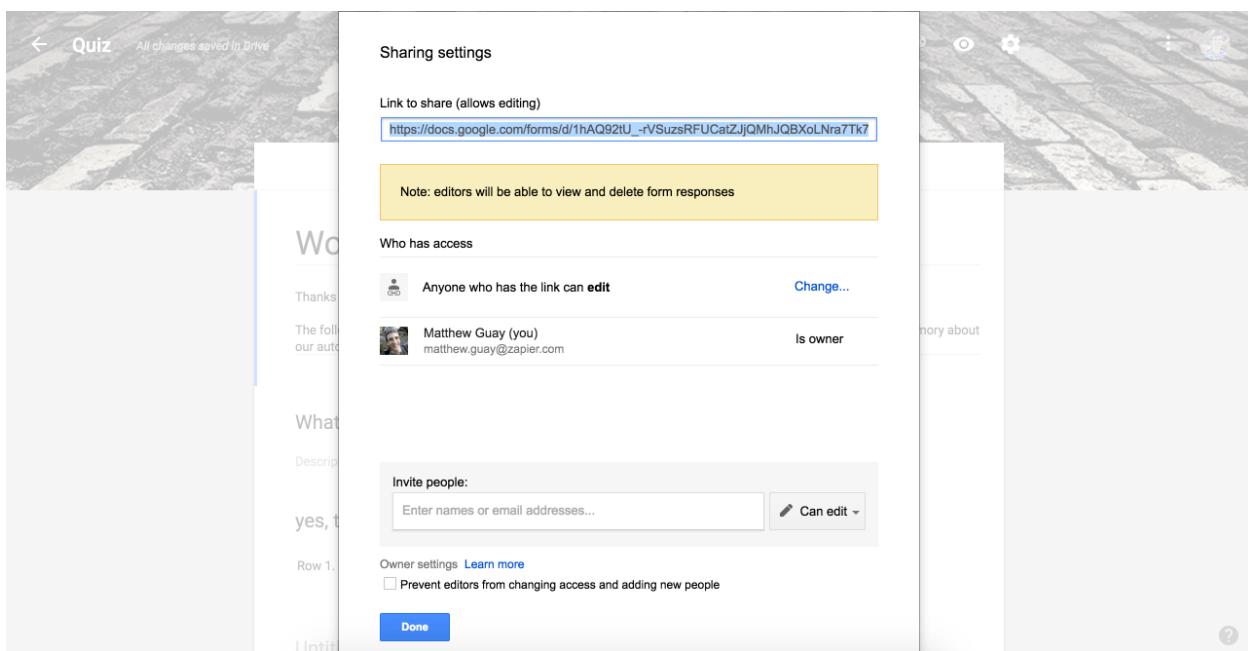
There's one other handy extra with Sheets: notifications. Google Forms by default can email you whenever the form is filled out, but click *Tools* → *Notification Rules* in Google sheets for more detailed options. There, you can choose to get emailed just once a day with a summary of all responses or whenever changes are made to a form entry.

Tip: For more features, you can add [Google Sheets add-ons](#) to include formulas in survey responses, send customized notifications, and more. We'll look at those in-depth in chapter 6.

Share Your Form

You've made a form, and now it's time to share it with the world and get responses to your questions. Or perhaps you want to get feedback from your team on your form. Either way, here's what you need to do in Google Forms.

Collaborate on Forms

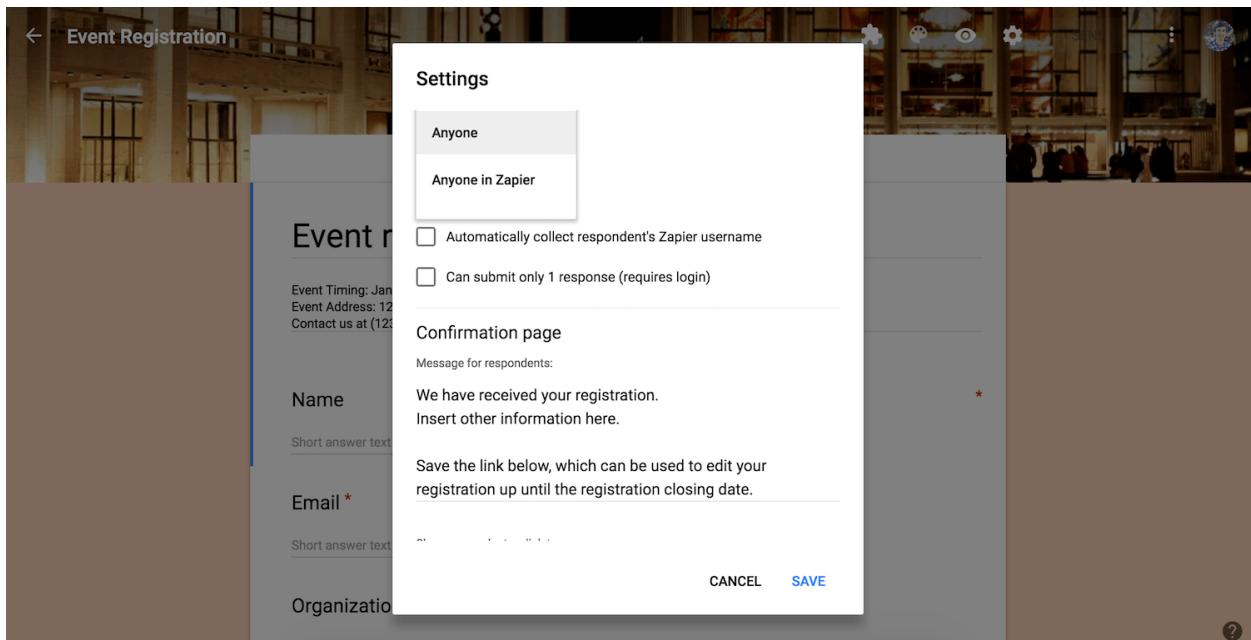


One of Google Forms' best features is that you can share the core form with others to let them help you build and edit the form. The same sharing features you'd expect in Google Docs and Sheets are included with Forms.

Just open the Forms menu and select *Add Collaborators*, then enter individual collaborators' email addresses. Or click the *Change...* link to make the form public to the web or just inside your organization.

Tip: Want to make your own form template? Just make a form, then click the form's menu and select *Make a copy*. Or share your original form, and then everyone with the link can make their own copy—an easy way to make shared team template forms.

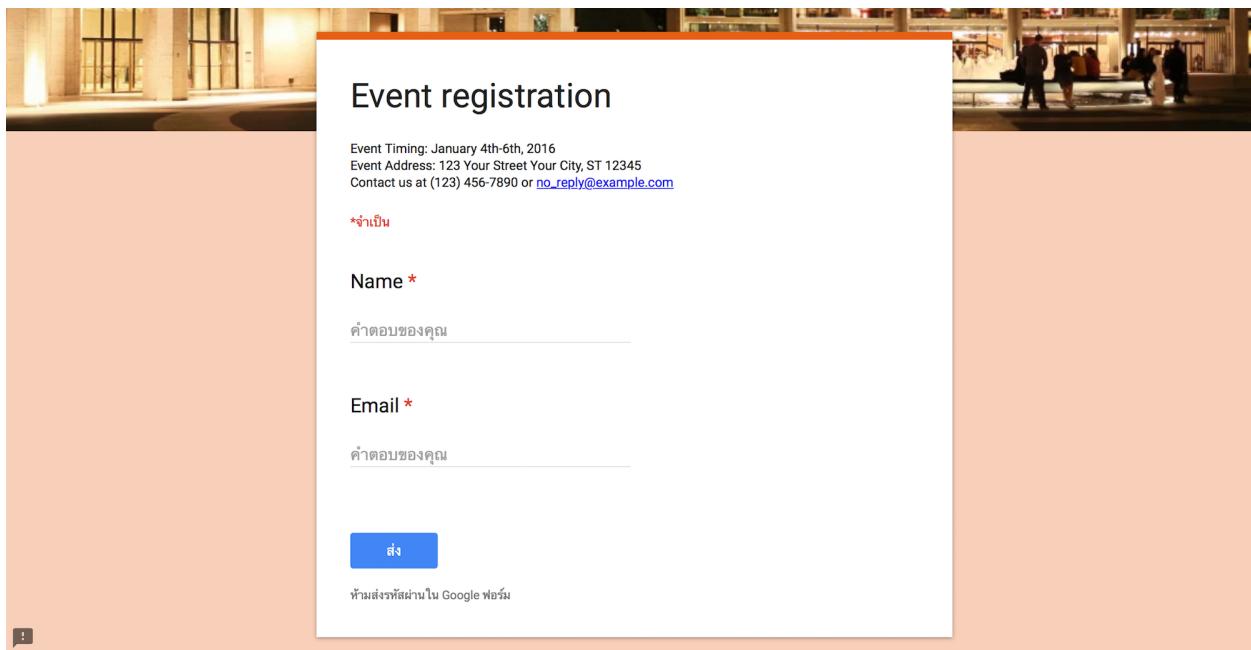
Form Sharing Settings



Once your form is finished, be sure to check the form settings before sharing it with the world. Click the gear icon to open the settings, where you can add a confirmation page to your form. This works the same as the form description field with no formatting but support for links.

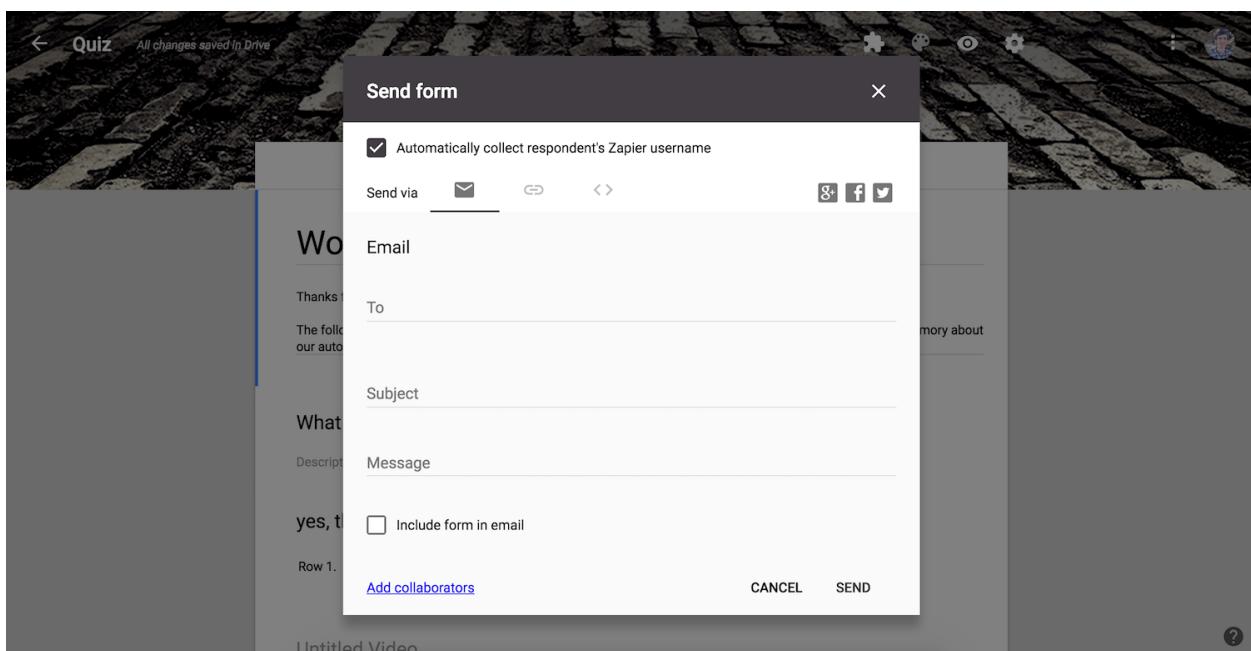
You can also choose to share the form either only inside your organization or publicly with anyone who has the link. There are also options to collect their username (their Google Apps email address) or only allow one response (which requires respondents to log into their Google account).

In the response options, you can let users submit another response, edit their responses, or see a summary of all responses. You can also have Google show a progress bar based on the number of completed sections or shuffle the question order.



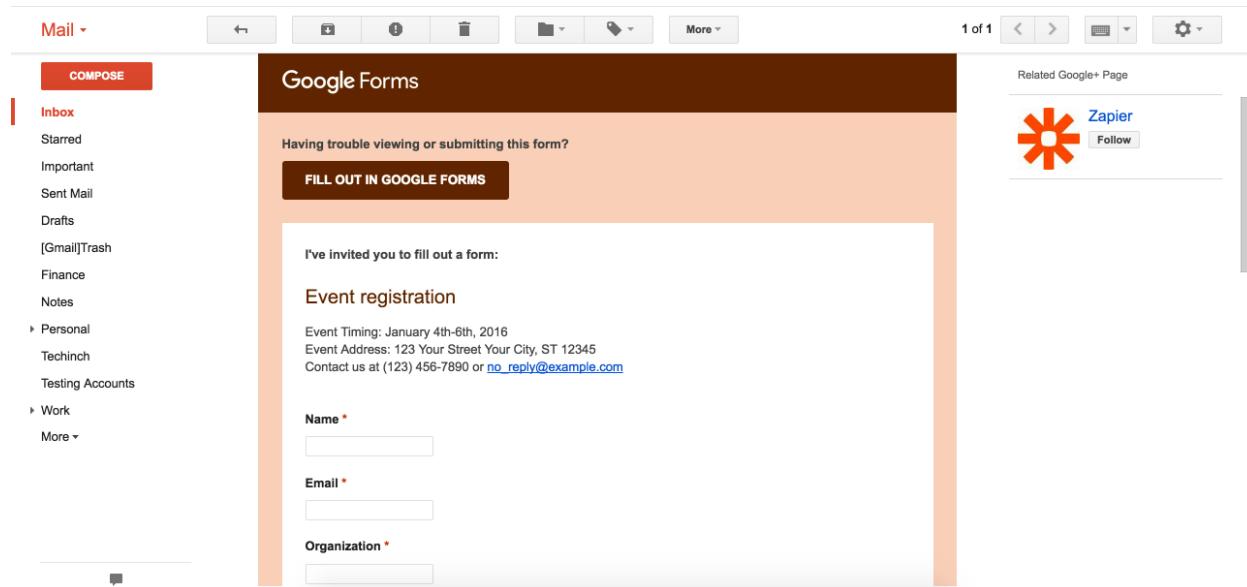
There's one more thing to note: language. Google will show the form's interface in the default language for your recipients' location. If your readers are in Japan, say, and your form questions are in English, the UI text like *Required* and *Submit* will be in Japanese while your questions are in English. If that's an issue, you can add a note to the beginning of your form to remind people to set their Google language from `google.com` first.

Share Finished Forms Online



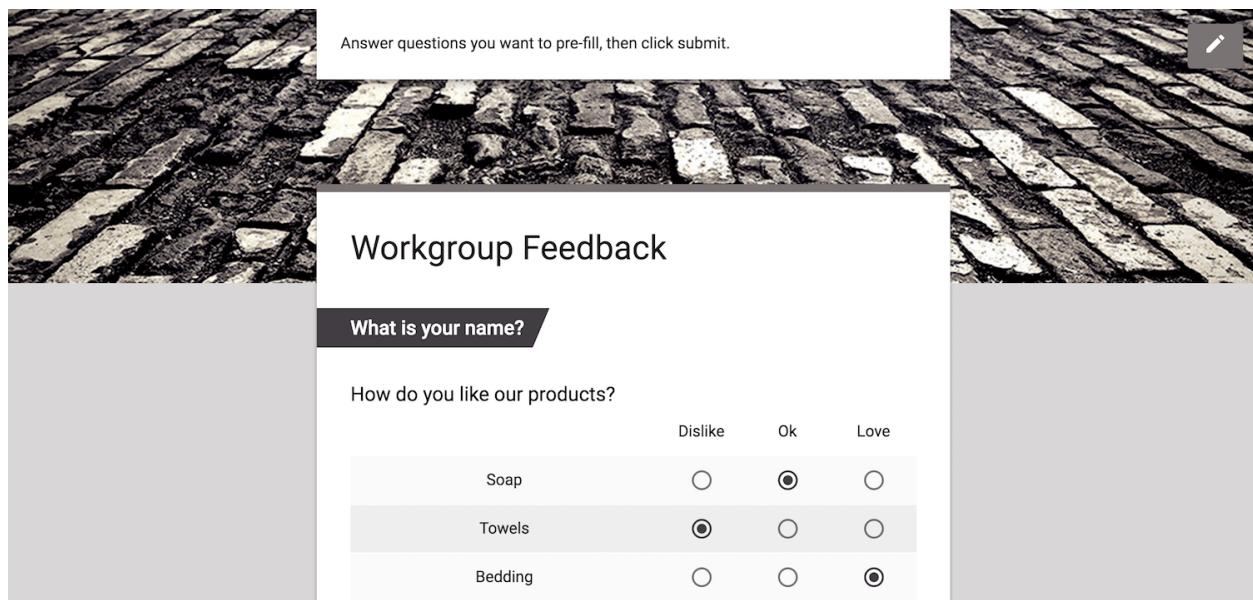
Read to get responses to your form? Just click the *Send* button in the top right to share the form via email or social networks, copy a link to the form, or get an embed code to add it to your site.

With the link, you can either copy a full-length link or get a shortened `goo.gl/forms/` link to share more easily on social networks. The embed option includes width and height options to fit the form within your site's design.



Sharing the form via email includes an extra option: including the form in the email. This copies your actual form options into the email, and if your recipient uses Gmail, they can fill out the form inside their Gmail inbox, click *Submit*, and send in their answer without ever seeing your real form. That only works in Gmail, though—Apple Mail shows the form fields but doesn't send the answers to Google Forms, while Outlook.com can't even open the form—so you might want to include a note with your form for non-Gmail users.

Share Pre-filled Form



Want to get feedback with a form partly filled in? Perhaps a contact clicks a button on your site that says they dislike one product, so you want the survey form to reflect that automatically. Or maybe you have a form that needs to be filled out with similar info each week, and you don't want to re-type it.

For cases like these, click the *Get pre-filled link* option in the Forms menu, then fill in the options you want on the form. Click *Submit* at the end, and Google will give you a unique link to share that copy of the form with the answers pre-filled.

Share Paper or PDF Form

The screenshot shows the 'Print' dialog on the left and a sample Google Form on the right.

Print Dialog:

- Total: 1 sheet of paper
- Cancel | Print
- Destination: Photosmart 5510 series (HP Photosmart 5510 seri...)
- Change...
- Pages: All (radio button selected), e.g. 1-5, 8, 11-13
- Copies: 1 (+ -)
- Layout: Portrait
- Color: Color
- Options: Simplify page

Sample Form:

What is your name?

1. How do you like our products?
Mark only one oval per row.

	Dislike	Ok	Love
Soap	○	○	○
Towels	○	○	○
Bedding	○	○	○
Hats	○	○	○

2. What's your favorite name for random things?
Mark only one oval.

- bob
- stuff
- Thing 1
- it

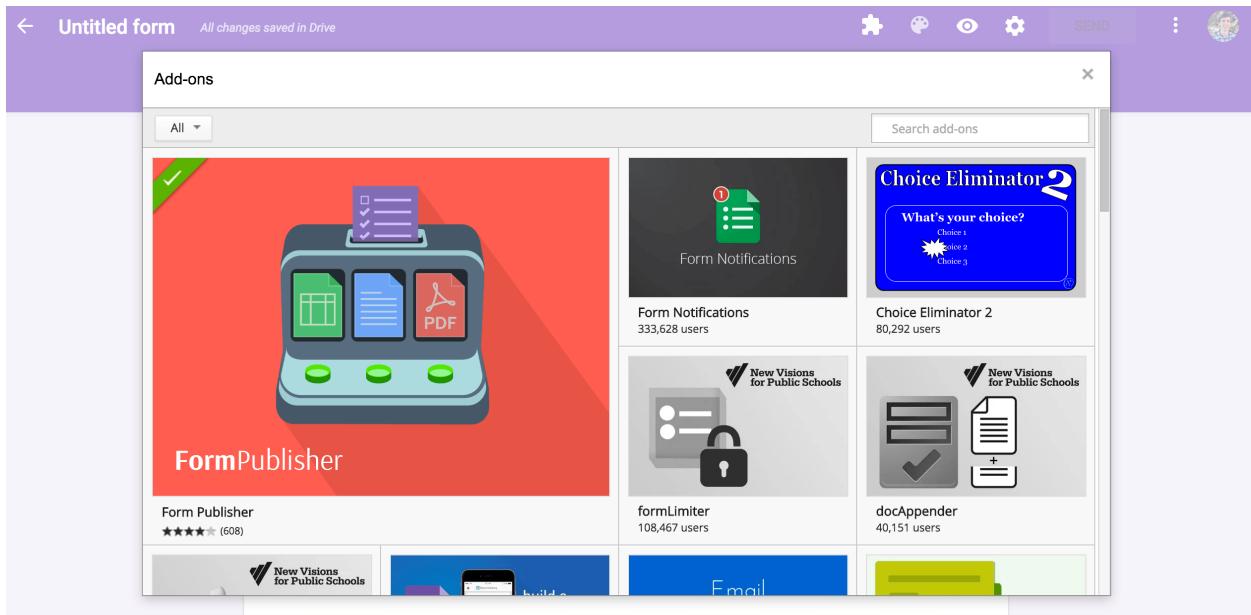
Send me a copy of my responses.

Powered by Google Forms

Need to gather responses offline? Google Forms can help with that too. Just click *Print* in your Forms menu, and Google Forms will make a ballot-style copy of your form that you can print or save as PDF.

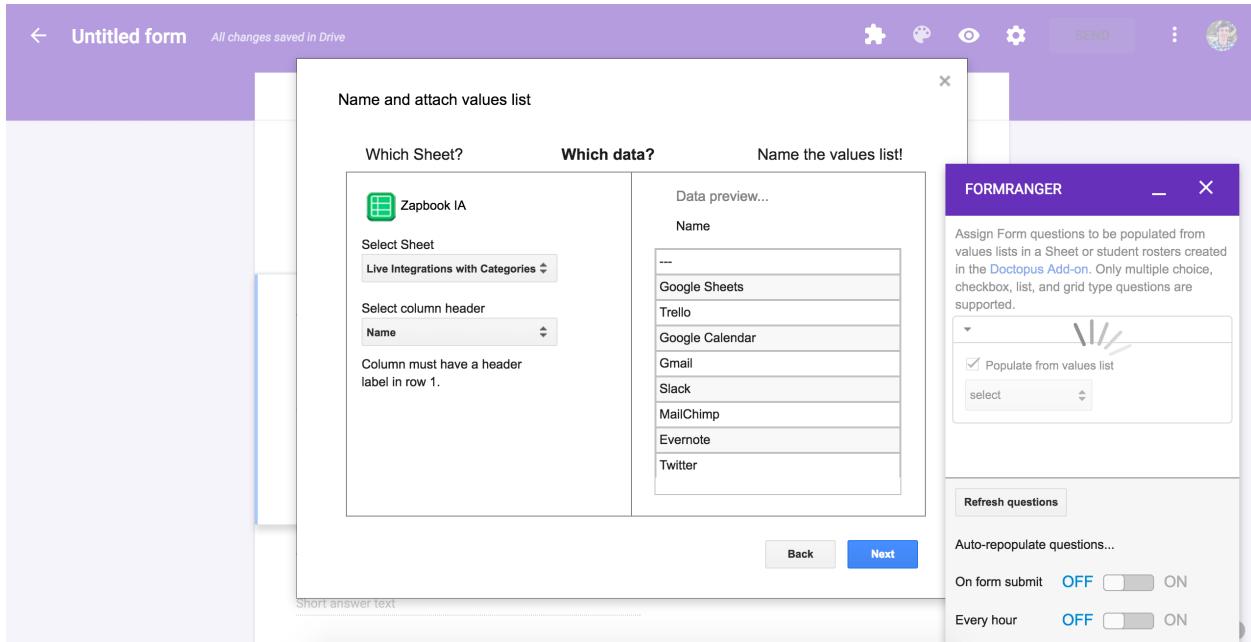
Grids and multiple-choice options show pill buttons to fill in, while text fields include blank lines for answers. Once respondents have filled out your paper forms, just type their answers into your Google Sheets spreadsheet to save them along with your other form entries.

Google Forms Add-ons



Google Forms is great on its own, but odds are it's still missing some features you want. Forms add-ons let you add extra features to your forms, get customized notifications, turn your form entries into documents, and more.

There's an entire library of add-ons tucked away in the Google Forms menu. Just click the menu, click *Add-ons...*, then find an add-on you want and install it. You'll then get a new puzzle piece icon in Google Forms, with a menu that lists each of your add-ons.



Most Google Forms add-ons run in a pop-over on the lower right side of your forms editor, and they may also include an options pane that opens in the center of your editor. To open an add-on, just select it in the add-ons menu, manage its settings from its add-on pop-over, and it'll then run in the background automatically. There's no menu option to manage or remove add-ons; instead, just open the Add-ons pane again, find the add-on you want to remove, click the green *Manage* button, and then select *Remove* in its menu.

Here are some of the best Forms add-ons to get started:

- **All Questions Required?** adds a simple toggle to make all questions required—or not—in a single click.
- **CheckItOut** lets you check in or out items with a form, essentially by rearranging data from one category to another in a spreadsheet. It's a great tool for managing inventory or shared items, or it could be used creatively to, say, approve tasks or do other jobs where you need to move items between two categories.
- **Choice Eliminator 2** eliminates options from multiple-choice, list, or checkbox questions if they've already been selected. It's a great way to, say, make a signup form where respondents can each select one day or an order form for limited quantity items.
- **Data Director** adds form responses to alternate sheets and sends email notifications based on conditions. You could use it to sort all similar entries into different sheets automatically.
- **docAppender** adds your form results to the end of a Google Docs document instead of a spreadsheet. Each response can be added to unique documents based on form questions, or they each can be added to the same document.
- **formLimiter** limits how many times your form can be answered. It can watch for a number of responses, a date and time, or a set value in your results spreadsheet, and then will disable your form once that's hit.
- **Form Notifications** sends custom email notifications to you and optionally to form respondents with details about the form results and a thank you message.

- **Form Publisher** makes template Google Docs documents, PDF files, or unique spreadsheets for each entry, and then share them via email.
- **Form Field Export** turns your Google Forms fields into JSON data to import into other form apps.
- **formRanger** pre-populates choices in multiple choice or checkbox questions from a table in a spreadsheet. That gives you an easy way to add questions about data you've already saved to a spreadsheet.
- **formRecycler** imports questions from other forms to quickly reuse them without copying the entire form.
- **g(Math)** adds graphs and functions to forms. Type your formula in LaTeX format, or add a function to graph, then insert it as an image into your form.

Or, if you're storing your form data in a Google Sheets spreadsheet, there's a wealth of [Sheets add-ons](#) to do more with your data, which we'll look at in chapter 6.

Build Add-ons with Google Apps Script

Upload a file for 25th Anniversary

Name

Ministry

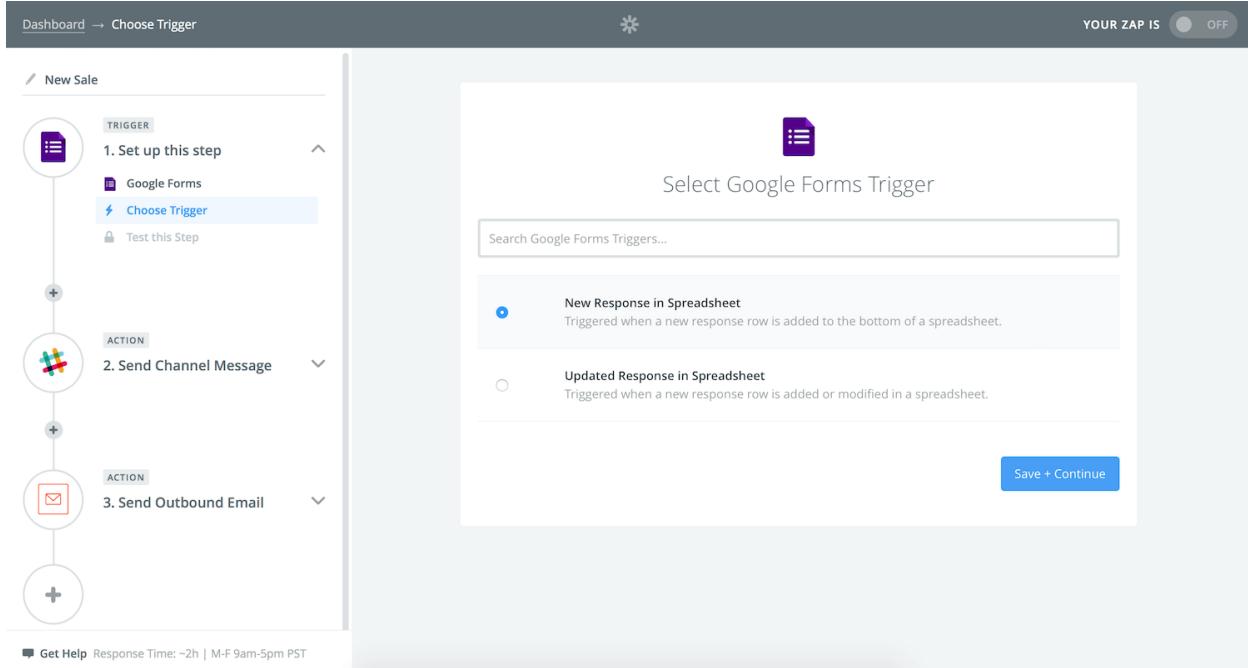
FILE Upload a file

SUBMIT

Need to receive files in a Google Form? There's no add-on for that, but you can use a Google Apps Script to [accept files in a secondary form](#) and add them to Google Drive. That's but one of the many things you could do with [Google Apps Script](#), the scripting language for building macros and add-ons in Google's apps which we'll dive into in chapter 7 of this book.

Apps Scripts let you add form options, send notifications, and more with just a few lines of Javascript code. You can find Google Apps Scripts online, or learn to build your own using Google's tutorials for [building Forms add-ons](#).

Integrate Google Forms with MailChimp, Salesforce, Trello, and More



Another way to do more with your forms is with Zapier integrations. With connections to over 600 apps, Zapier can save your form data to other apps, send you customized notifications, and put forms at the center of your workflows.

There's only one catch: Your forms have to be connected to a Google Sheets spreadsheet to work with Zapier. Just make sure your form entries are being saved to a spreadsheet, then connect it to Zapier, and build the custom workflows you need to get work done directly from forms.

Here are some popular integrations to get started:

Get Notified When Your Form is Filled Out

Want to get notified whenever your form is filled out or when specific entries are added to your form? Zapier can send you customized email notifications with filters that watch for the text you want. Or you can send the notifications to Slack, SMS, or any other communications tool you want.

Zapier Integrations:

- Send email via Gmail for new Google Forms submissions
- Share Google Forms responses in a Slack channel
- Send Twilio SMS messages with new Google Forms responses

Save Form Entries in a Database or Spreadsheet of Your Choice

For a more customizable way to save your form data, Zapier can route your form entries to multiple spreadsheet sheets in any spreadsheet or database app you want. With your data sorted automatically, you'll be able to get work done with your form even faster.

Zapier Integrations:

- Update Google Sheets rows from new Google Forms responses
- Create MySQL rows from new Google Forms responses
- Create Airtable records from new Google Forms responses
- Append new Google Forms responses to a text file on Dropbox

Save New Contacts to Your CRM

Make sure you can always get in touch with people who fill out your forms by logging their contact info to your address book or [customer relationship manager \(CRM\) app](#). Zapier can add new contacts to your CRM, save a note with info about what they wrote in the form, and even update existing contacts to log every time they fill out one of your forms.

Zapier Integrations:

- Create HubSpot contacts from Google Forms responses
- Create Salesforce contacts from Google Forms responses
- Create contacts in Google Contacts from new Google Forms responses

Grow Your Email Newsletter List

Use your form to expand your marketing efforts and stay in touch with your fans. Just connect it to your [email newsletter app](#), and add everyone who fills out the form to your email newsletter list. Or, if you want to add them to another list, you could use Zapier to remove them from one list and then add them to another.

Zapier Integrations:

- Create MailChimp subscribers from Google Forms submissions
- Create ActiveCampaign subscribers from Google Forms responses
- Unsubscribe new Google Forms respondents from MailChimp

Turn Form Entries Into Tasks and Projects

Your team has stuff that needs done, and a form can be an integral part of your workflow when connected to your [to-do list](#) or [project management app](#). Zapier can then start new projects, add tasks and events, and make sure everything's in place to get your work done.

Zapier Integrations:

- Create Trello cards from Google Forms responses
- Create Google Calendar events from Google Forms submissions
- Create JIRA issues from new Google Forms responses
- Create Asana tasks from new Google Forms responses

Create Documents from Form Entries

For more customized documents, template tools like WebMerge can take your form data, create PDF documents from templates, and save or send them wherever you want. Or, you can create text files from form entries for individual copies of each record.

Zapier Integrations:

- Merge new Google Forms responses with a WebMerge document
 - Add new Google Forms responses to a WebMerge data route
-

Whether you need to make a simple poll or want a dynamic survey with customized questions for different response types, Google Forms has the essential tools you need. It's not the most powerful or customizable form builder. Instead, it's incredibly easy to use, right from your Google account.

And thanks to its deep integration with Google Sheets—and a wealth of add-ons—it can be a powerful tool to gather data and mine it for insights without leaving Google Apps.

Next time you need a new form or survey, give Google Forms a try. With these tips and tricks, it just might be the handy form tool you've always needed.

Learn more about the entire Google Apps suite:

- [Gmail Review](#)
 - [Google Drive Review](#)
 - [Google Docs Review](#)
 - [Google Sheets Review](#)
 - [Google Forms Review](#)
-

Now that you've learned the [basics of Google Sheets](#) and know how to gather data in a form, let's put it together and build a quick app inside a spreadsheet. In chapter 3, you'll learn [how to build a full CRM app inside a spreadsheet](#), one where you can pull in data from the web about your contacts and even reach out to them with automated emails.

Enjoy? Read and share this chapter online: zpr.io/uB9f

Written by Zapier content marketer [Matthew Guay](#).

Chapter 3: Spreadsheet CRM—How to Create a Customizable CRM with Google Sheets



When [VisiCalc](#) came out as the first consumer spreadsheet software in 1979, it brought the number-crunching capabilities of big business to everyone. It was the first time anyone could harness the power of automated calculations to manage their own data.

Spreadsheets gave us the potential to input, modify, and calculate *anything we wanted* and store it digitally for re-use. You could build anything from run-of-the-mill grocery lists to financial models that feed off of massive data sets—the possibilities seemed endless. Spreadsheets were the original killer app, one of the main reasons you'd want to own a computer.

And now, you can use spreadsheets to build your own apps. With internet-connect spreadsheets like [Google Sheets](#), you can format and analyze data with standard spreadsheet tools, and *also* pull in data from the web and run complex workflows automatically.

We'll learn how to do just that in this chapter, by building a full-featured, automated contact management system (or [CRM](#)) with just a spreadsheet.

Tools to Build Your Google Sheets CRM

This tutorial tells you everything you'll need to build each part of the spreadsheet. But sometimes, it's easier to follow along with a pre-made spreadsheet. For that, we've included a template with every example featured in this tutorial—all you have to do is copy it to your account.

Just open the [template in Google Sheets](#), then copy it to your own Google Drive account by clicking File and selecting Make a Copy.

The screenshot shows a Google Sheets spreadsheet titled "Sheets Business Templates". The "File" menu is open, and the option "Make a copy..." is highlighted with a red box and a red arrow pointing to it. The spreadsheet contains data about various companies, including their names, websites, emails, and phone numbers.

	C	D	E	F	G
1	low did you find this survey?	Company	Company Website	Email	Phone
2	michaelGrubbs.com	MichaelGrubbsCom	http://www.michaelgrubbs.com	michael@michaelgrubbs.com	123456
3	Moblized	Moblized	http://www.moblized.com	michael@moblized.com	
4	Zapier	Zapier	http://www.zapier.com	johnny@zapier.com	800444
5	Google	Google	http://www.google.com	google@google.com	999888
6	McScrooge Corp	McScrooge Corp	http://www.disney.com	Donald@duck.com	123666
7	Ageless Cream Inc	Ageless Cream Inc	http://www.ageless.com	Button@Benjamin.com	888111
8	MarketerMan	MarketerMan	http://www.Marketer.com	mark@eterman.com	888777
9					
10					

You can also take this sheet, tear it apart, and modify it so it suits your needs. Each use case is implemented in its own tab, so you can see how they would potentially interact to form a complete contact management system.

I recommend either following along and tinkering with each element as it's brought up. But if you're feeling brave, you could build your own spreadsheet from scratch. The latter will help you really get the feel for *creating* in Google Sheets rather than just *using* it.

How To Build a CRM in Google Sheets:

Add a Form to Your Spreadsheet

One of the most significant “Aha” moments you’ll have with Sheets is realizing that your spreadsheets are connected to the internet—which means they can do work for you online. Google Sheets can automatically import data from other websites (something we’ll look at later on), and it also includes a form tool, Google Forms, to gather data and save it directly to your spreadsheet.

We looked at [Google Forms features and tools](#) in chapter 2—jump back for a refresher if you haven’t made your own forms in it yet. Now, let’s try it out by setting up a form to collect lead information from prospective clients.

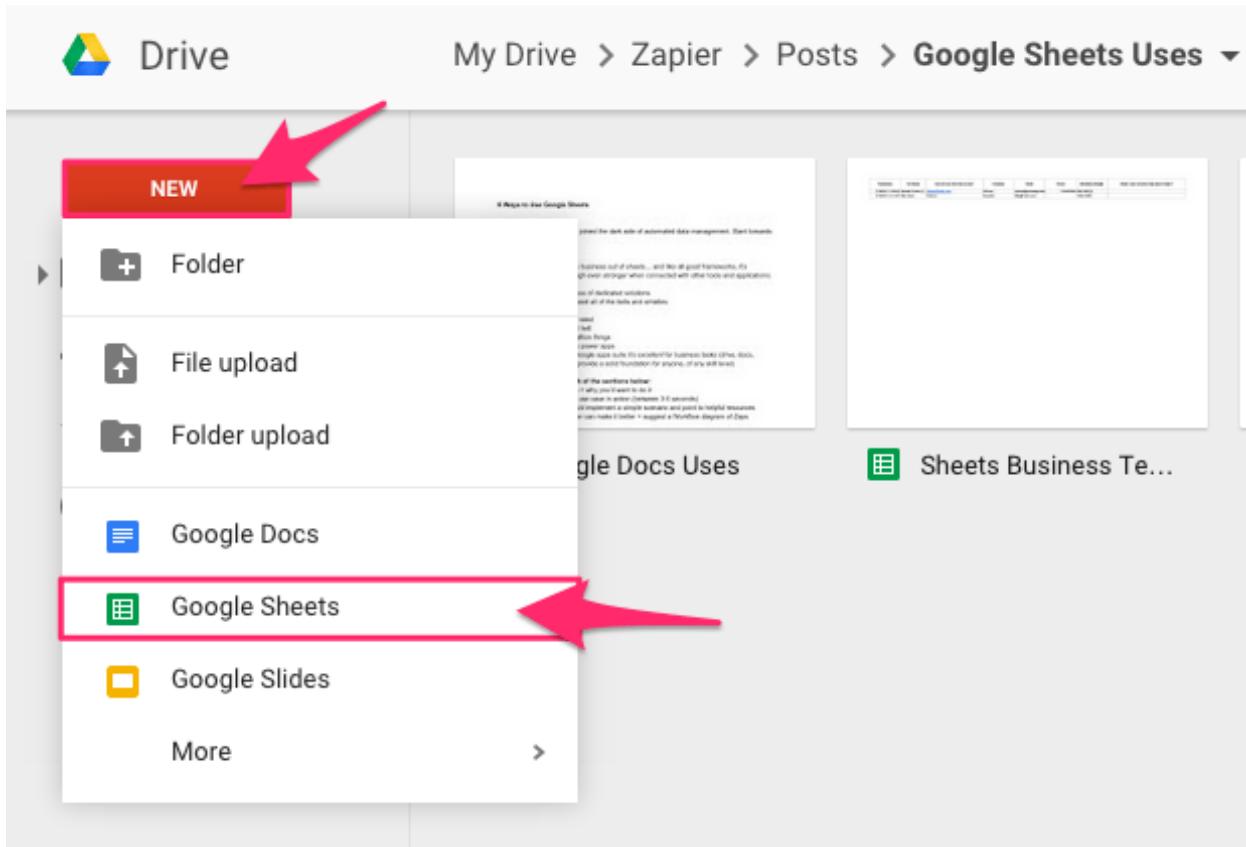
You could embed this form on your site, add it with button or link on your website, or share a link to the form via social media or email. When people click on your link, they can fill out your questions, and the data will be saved to your spreadsheet automatically.

1. Set up your form

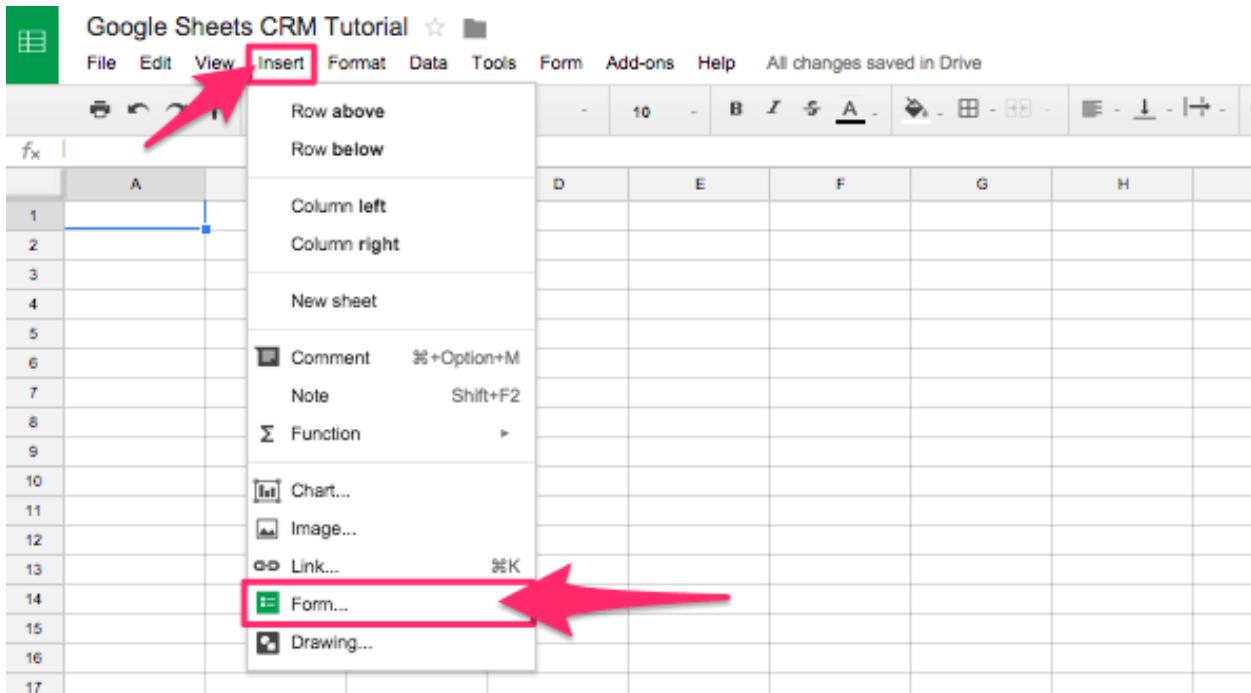
First, you’ll want to add a form to your spreadsheet as a simple way to gather data. Here’s the [Form example I created](#)—try it out and submit your (fake) data!

To implement your own form, you'll first need a spreadsheet (of course).

If you didn't [copy the tutorial template](#), go to your [Google Drive](#) account and click **New > Google Sheets** as in this screenshot.



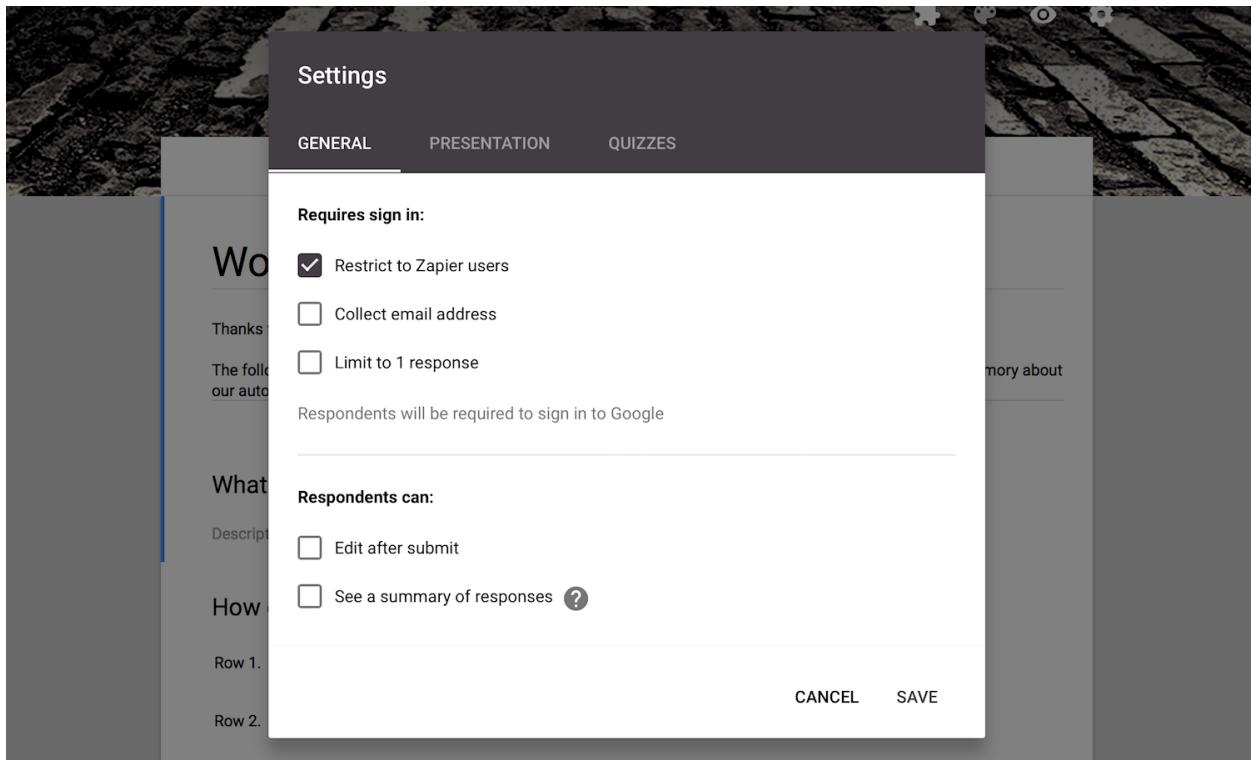
Once you have a sheet open, click *Insert > Form* and a new window will pop open where you will start filling out your form information.



2. Change your form's settings

This section allows you to choose who can see the form, and how many responses each person is allowed to submit. You can also customize a few aesthetic options, like question order and progress bars.

If you're using [Google Apps for Work](#), you can set it to only allow users from your organization and automatically collect their ID when they submit the form. This feature is especially useful for internal data entry, or for outsourced freelancers entering data from assigned company accounts.



For this form, I will leave all of the preferences blank so that it's accessible to you (and everyone else), and allows unlimited responses per person. If you're making a generic contact form as an easy way for people to get in touch with your team, you'll likely want the same settings.

3. Add some questions

The questions you'll add to your form will depend on the data you want to collect, so [think through the questions you'll need](#) for your own form. Try to collect data in a way that will make it easy for you to manipulate it later—ask generic questions with each answer in its own field.

For example, rather than allowing a user to enter a free-form answer to a question, offer 3-5 fairly comprehensive text-based choices in a multiple-choice question.

The screenshot shows the Google Forms interface. At the top, it says "Untitled form" and "All changes saved in Drive". Below that is a toolbar with icons for puzzle, paint, eye, gear, send, and more. The main area has tabs for "QUESTIONS" and "RESPONSES". The title of the form is "Sheets Business Templates". Below the title, there's a subtitle "Enter new contacts for our spreadsheet-powered CRM.". There are two questions visible: "Full Name" (a short answer text field) and "Email" (a short answer text field with validation "enter a valid email address"). A sidebar on the right contains icons for add, list, chart, video, and more.

Just enter the questions you want, pick the answer type, and Google will automatically create rows in your spreadsheet for each of your form's questions. You can also add some useful logic to the form with sections to personalize the questions to a user's responses. Jump back to Chapter 2's [Google Forms Logic Sections](#) guide if you need a refresher.

Here are some sample responses to my demo form for this tutorial:

The screenshot shows a Google Sheets document titled "Sheets Business Templates". The first few rows contain column headers: "Timestamp", "Full Name", "How did you find this survey?", "Company", "Company Website", "Email", "Phone", "Marketing Budget", "What's your favorite thing about Zapier?", and "What's Your Twitter Handle?". Rows 2 through 8 show sample responses. Row 9 is empty. Row 10 is highlighted with a pink box and contains the text "Responses are automatically placed after the last entry". An arrow points to the start of this row.

	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Full Name	How did you find this survey?	Company	Company Website	Email	Phone	Marketing Budget	What's your favorite thing about Zapier?	What's Your Twitter Handle?
2	7/18/2015 12:09:55	Michael Grubbs	MichaelGrubbs.com	MichaelGrubbsCom	http://www.michaelgrubbs.com	michael@michaelgrubbs.com	1234567890	500-1000		@michaelgrubbz
3	7/18/2015 12:12:07	Mike Grubbs	Referral	Mobilized	http://www.moblized.com	michael@mobilized.com				@moblized1234
4	7/24/2015 17:25:02	Johnny Lightning	Zapier Blog	Zapier	http://www.zapier.com	johnny@zapier.com		8004448888	1000-10000	@ZapierTesting
5	7/24/2015 18:02:31	Google Docs	A Google Search	Google	http://www.google.com	google@google.com		9999887777	1000-10000	Google<3Zapier
6	7/29/2015 10:55:57	Donald Duck	Referral	McScrooge Corp	http://www.disney.com	Donald@duck.com	1236664444	1000-10000	Quack!	@McScroogeGold
7	7/28/2015 18:18:11	Benjamin Button	Divine Inspiration	Ageless Cream Inc	http://www.ageless.com	Button@Benjamin.com	8881117777	500-1000	It's evergreen!	@B3NJ4M1N999
8	7/29/2015 17:31:39	Mark Eterman	A Google Search	MarketerMan	http://www.Marketer.com	mark@eterman.com	8887774444	0-500	I don't know enough about it!	
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										

As you can see, complicated text answers are difficult to read and also difficult to use in a meaningful way without directly analyzing the content. Some situations make sense for long-form answers (like when you expect only a few responses and have time to read them all). But when you're expecting the system to run in the background, you won't want to analyze everyone's submissions.

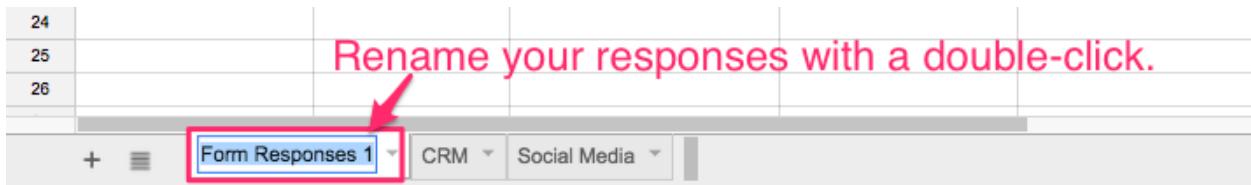
That's why it's best to make sure each question will only get a one-word answer—that gives you a lot more flexibility.

So now you have some data, what do you do with it?

Well, you can use it “as is” to get in touch with your new contacts, but let’s take it a step further.

4. Move your data to another sheet for processing

I’ll start by re-naming my form response sheet. The form originally shows up as a sheet named “Form Responses 1” but I renamed it “Customer Data” by double-clicking the name at the bottom of the worksheet.



Once you have changed the Form Responses sheet’s name to something more appropriate, we can take the information in that information and put it into another sheet. You can reference data from another sheet quickly by using the =INDIRECT() function.

Here’s what the formula would look like for the form we just created:

```
1 =INDIRECT("Customer Data!A2:H")
```

- Customer Data is where any new form submissions are saved.
- ! is used to reference another worksheet in the same spreadsheet.
- A2:H is the range of cells containing the data I’d like to reference—and it will automatically include all new data that comes in.

Alternately, if you want to keep responses separate from where you will perform data manipulation, you can use the =IMPORTRANGE() function in a completely different spreadsheet (a different document).

The formula to import the data into a *separate spreadsheet* would look like this for my example:

```
1 =IMPORTRANGE("1TOvmNLEhURU5Y1VoL2wTJ6-LrXT4hco7gNKwW2a1Sh8","Customer
2 Data!A2:H")`
```

- 1TOvm...w2a1Sh8 is the “Spreadsheet ID” located in the original spreadsheet’s URL (check the URL bar in your browser—it’s the text after the /d/ in the address)
- Customer Data!A2:H references the range of the original data to import.

When you enter this formula, you’ll have to authorize the new spreadsheet to access the data—just click the “Allow access” button that’ll pop-up beside that cell.

The screenshot shows a Google Sheets interface with a formula in cell A1: =IMPORTRANGE("1T0vmNLEhURU5Y1VoL2wTJ6-LrXT4hco7gNKwW2a1Sh8","Customer Data!A2:H"). Cell A2 contains a '#REF!' error. A tooltip box appears over the error, stating "You need to connect these sheets." Below the tooltip is a blue button labeled "Allow access". A pink arrow points from the text "Allow Access if Prompted" to this "Allow access" button.

	A	B	C	D	E	F	G	H	I
1									
2			#REF!		You need to connect these sheets.				
3					Allow access				
4									
5									
6									
7									

Click “OK” and your data should show up after a few seconds.

Now you can access form submission data in any of your spreadsheets and worksheets!

From here, you can do all manner of things. I’ll demonstrate a use case by creating a simple Customer Relationship Management system (CRM) based on the form we just set up.

Create a Contact Management System

Managing customer and contact data in a spreadsheet is a time-tested business practice. You’ll often hear modern data management solutions talk about “ditching spreadsheets.” But I *love* using Google Sheets for managing this type of data: it makes moving and organizing data extremely simple.

If you don’t already have a contact management system in place, you’ll want to collect data like:

- Contact information, including each person’s name, phone number, email, company, website, and social profiles.
- Source of the lead or customer (website signup, social media, paid advertising, etc)
- A system or code for their lead nurture stage.
- Customer Value (single purchase, lifetime value, or whatever is appropriate).
- Information about interactions (dates, topic, significant notes, etc).

You’re probably already keeping track of some of this data, but a detailed spreadsheet CRM can help you store more of it in a simpler format.

Google Sheets eliminates many of the distracting features of a full-fledged CRM while allowing for a level of customization that you won’t find in an off-the-shelf solution.

The caveat, of course, is that you have to build it. But don’t worry: it’s easy and a great way to practice your spreadsheet skills.

1. Label some columns

Be sure to add a column for any information you want to keep track of. Per my example bullets above, I’ve gone ahead and labeled my columns as shown below:

ID	Added	Name	Source	Company	Website	Email	Phone	Value	Why Zapier?	Twitter	Meta Information	Meta Information	Meta Information	Assigned	Notes
0	Timestamp	Full Name	How did you find this survey?	Company	Company Website	Email	Phone	Marketing Budget	What's your favorite color?	What's Your Twitter handle?	none	none	none	Danny	

You may notice the “ID” and “Updated” columns I’ve created. The “Updated” column is automatically created with every form entry, so I want to include that data in case I want to do something with the age of the data in the future.

The “ID” column is a part of the next step...

2. Manually enter or import data

The point of a CRM is to track contact data and customer lifecycle changes in a format that you can query later.

In the previous section, I showed how to set up a form to collect data from an outside source (rather than via one of your team members or direct collaborators). The form we created was designed for prospective new customers, though it can just as easily be used by myself or any member of my team to quickly input the data in a structured way.

In this CRM example, I’ll use the data entered into that form as the customer entries in my CRM sheet. Then I’ll assign an ID to the imported customer and choose a team member to be assigned to the customer based on their *prospective monthly spend* (a data point in the form).

We’ll use 4 functions to accomplish this:

- =ARRAYFORMULA() - to automatically update the IDs when new entries are added.
- =CHOOSE() - to select a team member based on the monthly spend.
- =ROW() - to grab the number of the row where the data is located.
- =IF() - for setting conditions on when to make things happen.

In order to keep your functions separate from the data (which you might be copying and pasting in the future), I recommend creating a row below your headers specifically for your formulas and hiding it when not in use. (I’ve highlighted mine red.)

ID	Added	Name	Source	Company	Website	Email	Phone	Value	Why Zapier?	Twitter	Meta Information	Meta Information	Meta Information	Assigned	Notes
0	Timestamp	Full Name	How did you find this survey?	Company	Company Website	Email	Phone	Marketing Budget	What's your favorite color?	What's Your Twitter handle?	none	none	none	Danny	

You will hide this row by right-clicking on the gray area to the left with the row number on it, then selecting **Hide Row**. If you need to add or tweak these formulas (which you will shortly), select a range of rows that includes the hidden row and **Right-Click > Unhide Rows**.

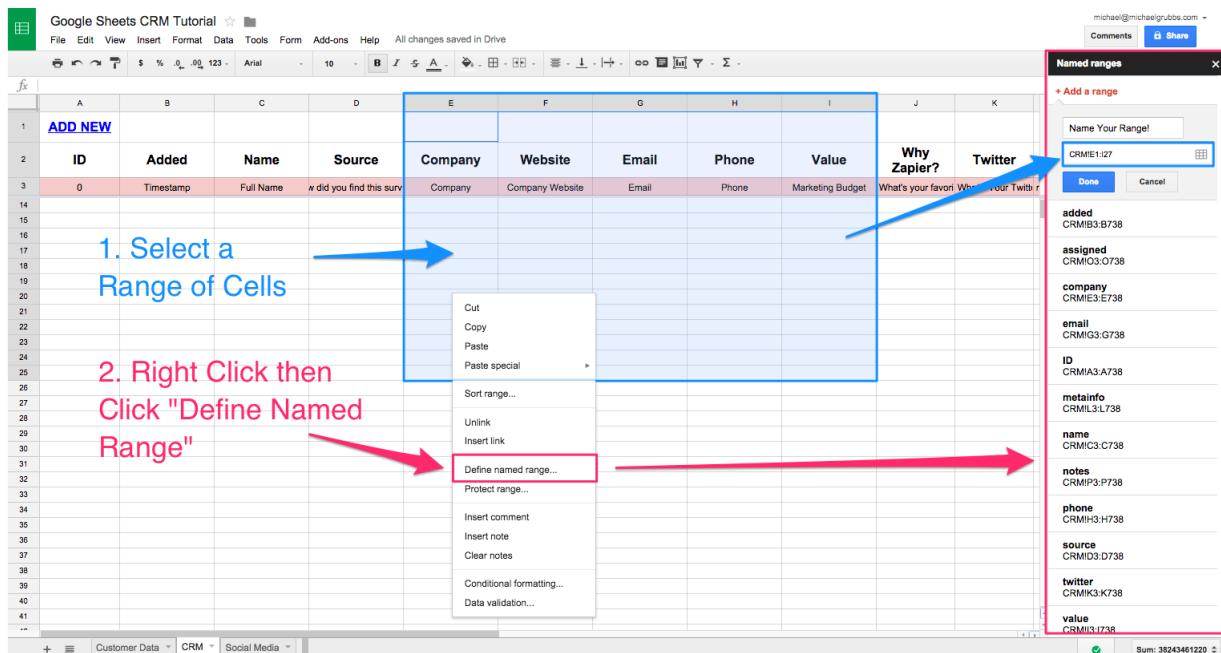
Before I set up the `ARRAYFORMULA()`, I'd like to make data ranges easy to reference in my formulas.

3. Name your data ranges

This allows you to use a short name like “name” instead of A:A every time you’d like to access that range of cells.

You don’t *have* to do this; sometimes I prefer not to name ranges so I know *exactly* what data I’m looking at. But, for times when you don’t plan to change the range very much, it’s a good practice that simplifies things.

To define and name an entire column, right-click on the gray box with the letter at the top of the column and select **Define Named Range**. Click “Done” once you’ve ensured it’s the right range.



Do this for all of your main data ranges (in the image I just showed a large range of cells as an example). You can now access those ranges simply by typing the short name you used when naming them (do note that it’s case-sensitive).

4. Manipulate your data with formulas

To do that, let’s set up an ID for each new entry.

You might wonder why you need an ID when the row clearly has numbers next to it.

I do this because if I ever want to filter the data and export a shortened list of specific entries, the row number doesn't stay with the data between sheets or exports to CSV files. So if you decide to upload this information to a "real" CRM at some point, you normally wouldn't be able to keep track of the customer's entry number. Having a dedicated ID for each entry solves that problem.

To add a Customer ID, use this formula in your "ID" column's formula row (the one you'll be hiding):

```
1 =ARRAYFORMULA(if(name<>"",ROW(name)-3,""))
```

- `if(name<>""` checks to see if there's a name in the "Name" column
- `ROW(name)-3` returns the ID based on the row number -3 (this is to offset the number of header rows that are used to title / hidden formula row).
- The "" in the 3rd argument of the formula is to avoid returning "FALSE" in every row below the most recent entry. It's purely aesthetic, but I find that I can recognize a blank cell more easily than sorting through a bunch of "FALSE"s mixed with my data.

5. Assign your customers to sales reps

In the "Assigned" column's formula row, we'll insert the following:

```
1 =ARRAYFORMULA(IF(value<>"",IF(value = "0-500", "Mike",IF(value =
2 "500-1000", "Matt", "Danny")),""))
```

- `IF(value<>""`, again checks if there's a CRM entry by looking at the value column
- `IF(value = "0-500", "Mike",` returns "Mike" if the value is "0-500",
- `IF(value = "500-1000", "Matt",` assigns anything that matches "500-1000" to "Matt"
- `"Danny")),""))` returns "Danny" as the default case and the last "" returns blank if nothing is in the value column

Awesome! So now there is an agent assigned to each new, ID'd entry into your CRM.

Here's what would happen if you add someone now:

The image shows two side-by-side screenshots. On the left is a Google Sheets spreadsheet titled "Google Sheets CRM Tutorial". It has a header row with columns for "ID", "Added", "Name", "Source", and "Comments". Below this are several rows of data, each containing a unique ID, the date and time it was added, the customer's name, where they found out about the survey, and a comment. On the right is a Google Form titled "Sheets Business Templates" for "Collecting Lead Information". The form includes fields for "Full Name" (with "First & Last" and "Last Name" sub-fields), "Email", "Company" (with "Macrohug" as the value), "Company Website" (with "http://www.macrohug.co" as the URL), "How did you find this survey?" (with radio buttons for "Zapier Blog", "Divine Inspiration", "Referral", and "A Google Search", where "Referral" is selected), "Phone" (with "8884445565" as the number), "Marketing Budget" (with radio buttons for "0-500", "500-1000", and "1000-10000", where "1000-10000" is selected), "What's your favorite thing about Zapier?" (with a text input field containing "I like to automate my li"), "What's Your Twitter Handle?" (with a text input field containing "@username" and a sub-field "@InflateGate5"), and a "Submit" button.

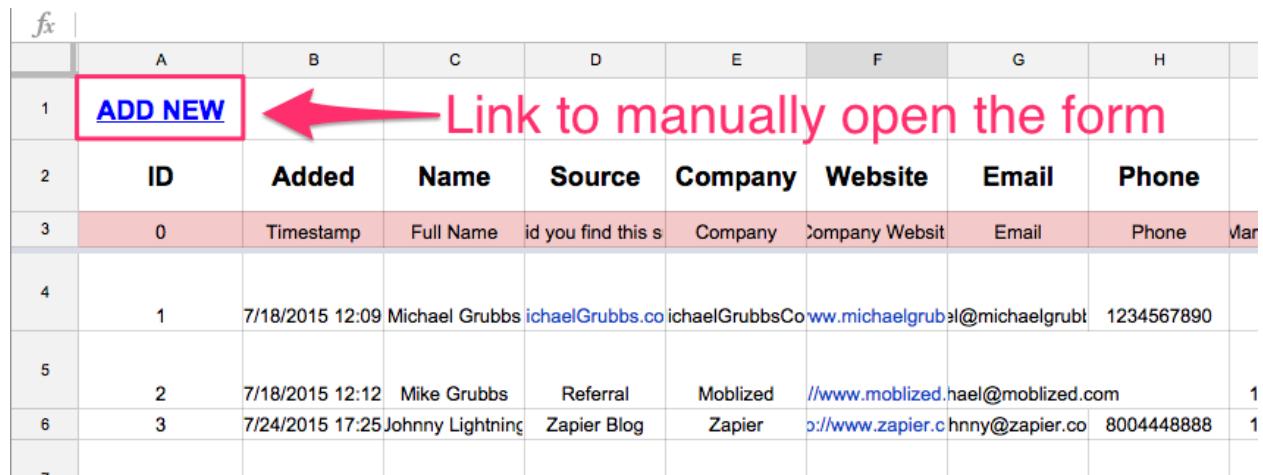
If you'd like to modify customer data, you would do so in the “Customer Data” sheet, rather than in your CRM. This is because CRM sheet references the data from the “Customer Data” sheet via formulas. So rather than changing the actual data, if you modified the information in the CRM sheet, you would break your formulas!

If you want to add additional information manually, you can add more columns to the right of your last data-filled column. That's the best way to keep from breaking things. For example, you could create a “Notes” column in column K to add additional information on any new customer.

6. Set up a way to add customers manually

You don't want to manually enter each piece of contact information. Instead, let's place a link directly to the input form on your CRM sheet. This way, you can just click the link to pop open the form, fill in the data as if you were a customer, and submit it.

I placed my form link in a new row at the top of my sheet using the =HYPERLINK() function.



	A	B	C	D	E	F	G	H
1	ADD NEW							
2	ID	Added	Name	Source	Company	Website	Email	Phone
3	0	Timestamp	Full Name	id you find this s	Company	Company Websit	Email	Phone
4	1	7/18/2015 12:09	Michael Grubbs	michaelGrubbs.co	michaelGrubbsCo	www.michaelgrubbs.co	michaelgrubbs@michaelgrubbs.co	1234567890
5	2	7/18/2015 12:12	Mike Grubbs	Referral	Moblized	www.moblized.com	michael@moblized.com	1
6	3	7/24/2015 17:25	Johnny Lightning	Zapier Blog	Zapier	www.zapier.com	johnny@zapier.com	8004448888

To start, you'll need the link you would share with someone who you wanted to fill in the form for this spreadsheet, such as [this link](#) for this tutorial's example form.

This sharing link can be found by clicking the “Send Form” button on your attached form’s editing screen or by clicking **Form > Go To Live Form** from the worksheet’s toolbar and copying the URL.

Once you have the link, go back to your spreadsheet, select a cell that you want to place the formula in, and make yours look like this (but with the URL for your form):

```

1 =HYPERLINK("https://docs.google.com/forms/
2 d/1zgH3WpmpUqXzaLa440DfSEzIyeIm2j0MEzRMXtbXuWI/
3 viewform?usp=send_form#start=invite", "ADD NEW")

```

- =HYPERLINK("https://docs.google... form#start=invite", is the URL to the form.
- "ADD NEW") is the text you want to show up in the cell.

To use the link, hover over the cell and the URL will pop up above it, allowing you to click it.

Go ahead and submit some information through your form and view the results in your CRM sheet—you should see the new data show up almost instantly. It’s incredibly satisfying to have the ID and Team member assignment happen automatically!

What about a more complex (and incredibly awesome) way to collect additional data about these new potential customers?

Qualify Contacts with Web Scraping

Adding some automated data scraping—copying data from other websites automatically—to your sheets is as easy as adding a few built-in functions. You can grab almost any data you want from most URLs by using the IMPORT functions in Google Sheets. Those include:

- `IMPORTXML()` - Imports a site's XML markup.
- `IMPORTDATA()` - Imports the content of a page saved as a .csv or a .tsv on a site's directory.
- `IMPORTFEED()` - Import an RSS or ATOM feed.
- `IMPORTHTML()` - Imports a page's HTML tables.
- `IMPORTRANGE()` - Imports data from another Google Sheet.

Continuing along with our CRM example, let's see if we can get some more information about these new prospects automatically.

If you didn't enter a valid URL for your contacts' website into any of your form entries, you will want to either change some URLs in your "Customer Data" sheet now, or enter in a few more manual form submissions with valid links.

1. Choose data to scrape

You may not know this, but each website is coded slightly differently. There are loads of best practices and shifting standards, but it's pretty rare that the guts of one site are exactly the same as another.

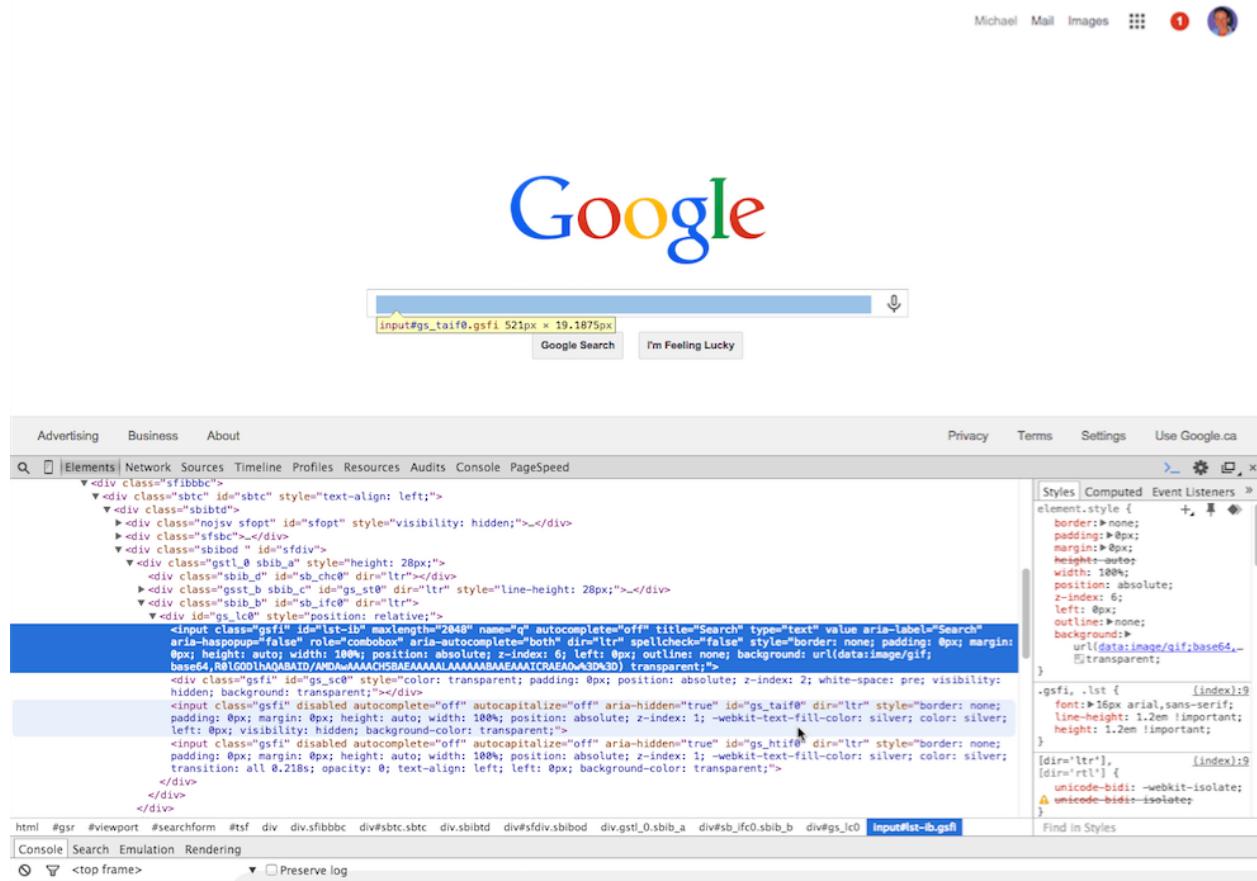
This is especially true of elements within the `<Body>` tags of a webpage.

For example, the search bar on Google's homepage is tagged and coded differently than the search bar in [Zapier's help section](#). The HTML elements are different, the styling is different, and the scripts that power their interactions with users are different (so they get lots of different tags applied to them).

These differences make the elements' Extensible Markup Language (XML) paths different, too. The **XPath** (shorthand terminology) helps you find each similar element on a given page based on its HTML structure and tagging. Google Sheets can use this structural information to grab the contents of a webpage—so, for example, if you have the XPath of the Twitter bio, and a link to each of your contacts' Twitter page, Google Sheets could import each person's Twitter bio automatically. All you'll need to do is find the XPath.

One easy way to see the XPath of any element on a page is to use Chrome's Developer Tools (CMD+OPT+i to open) or just right click and select **Inspect Element* on whatever you want to see the path for. This will first Open Dev Tools and then highlight that element in the "Elements" section.

Once you see the gray or blue highlighted element, right-click on it and select **Copy XPath** to copy the *exact* XPath of that element to your clipboard.



Here's what you'd get if you were to paste the results of the “Copy XPath” command from the Developer Tools pane:

```
1 //*[@id="lst-ib"]
```

This is the super-specific, non-generalized way to reference that element, and it's only really useful for *that* specific element.

Depending on the element you are trying to scrape (and if you want to apply the formula to multiple sites) there are *some* XPaths that are the same across most sites.

One example of these standard elements is site “**Meta Tags**”. These usually Search Engine Optimization (SEO) elements like the **Title**, the **Description**, and **Author** of the page, and can hold a bunch of useful info. They're your best bet if you want to copy data from a wide range of different websites.

We'll use these **Meta Tags** to collect additional information about our leads' website or service to help better aid the sales representatives that we assigned in the CRM section above.

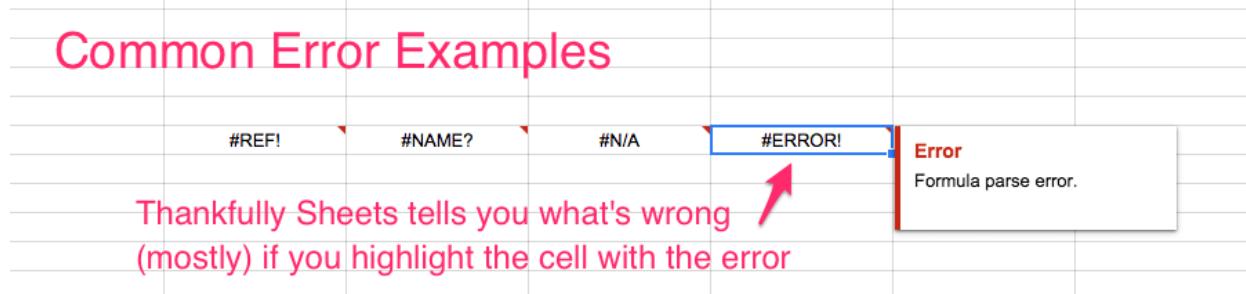
Tip: Want to learn more about tracking down XPaths? Read Google's documentation for more help getting started with [Chrome Developer Tools](#).

2. Scrape your data using Google Sheets

We're going to use the `=IMPORTXML()` function here (which is by far my favorite `IMPORT()` function). `=IMPORTXML()` makes it easy to grab *similar* data from different pages without knowing *exactly* how they are tagged or structured.

Another function we'll be using is `=IFERROR()`. You can think of it as a traditional `IF()` that we used in the example above, but instead of putting in your own condition statement (like "If this happens then do this") that statement will always be "Check to see if this formula results in an Error when you run it".

You'll recognize when a formula is "throwing an error" when you see a `#REF!`, `#ERROR!`, `#NAME?`, or `#N/A` as the result. Sometimes this is because of a faulty formula, but other times it's just the result of a formula not grabbing any data. Google Sheets should tell you the source of the problem, though.



This sometimes happens with `IMPORTXML()` because some sites block scraping. Or, the URL might be dead, producing a 404 (page not found) error.

You can hide these error codes by wrapping our formula in the `IFERROR()` function, which shows a different result if the cell runs into a problem.

One thing to note is that by doing this, you effectively silence any helpful errors that would let you know that your formula is incorrect. I recommend only wrapping your function in `IFERROR()` once you're sure that it actually works the way you expect.

Here's what the completed formula for scraping a page's "Title" looks like:

```
1 =IFERROR(IMPORTXML(website,"//title"),"none")
```

- `=IFERROR()` - wrapping our `IMPORTXML()` function to check for an error
- `website` is the range where the URLs are located.
- `"//title"` is the XML reference for the "title" element in a webpage's code.
- `"none"` is the default result to `IFERROR()` if the `IMPORTXML()` function fails to find a "title".

Unfortunately, `IMPORTXML()` has a limit of 50 instances per worksheet (as in, 50 `IMPORTXML()` functions in the entire document) so we need to be judicious in our application of the function.

To combat this limit, rather than creating a new `IMPORTXML()` for each of the Title, Meta Description and Keywords, I'll go ahead and use the XPath "OR" operator which is `|` (a vertical line or "pipe") to combine the queries into a single function.

Place the following XML paths after `//title`, with each separated by a `|`:

- 1 `//meta[@name='description']/@content`
- 2 `//meta[@name='keywords']/@content`

As you may have noticed, the Description and Keywords XML paths are a bit more complicated because you need to get more specific to reference the right elements.

Tip: You can read up on constructing XPath arguments from this [Microsoft resource](#) or use the [W3 XPath Syntax Guide](#) to learn all things Xpath.

The completed formula will look like this:

- 1 `=IFERROR(IMPORTXML(website,"//title|//meta[@name='description']/@content|//meta[@name='keywords']/@content"),"none")`

We want to list our results on the same row as our contact in the CRM (rather than spilling vertically into the next contact). To fix this, we just wrap the whole formulas in a `TRANSPOSE()` function. This will take the vertical data and flip it to spill into the cells to its right.

Here's the final, FINAL version of the scraping formula:

- 1 `=TRANSPOSE(IFERROR(IMPORTXML(website,"//title|//meta[@name='description']/@content|//meta[@name='keywords']/@content"),"none"))`

And it will look like this in your formula box:



NOTE: I'm still putting these functions in my 3rd row, which is acting as my hidden formula row.

3. Copy your formulas down to any new contacts

We used `ARRAYFORMULA()` in the Form and CRM sections above to automatically apply formulas to new entries in our CRM. That doesn't work with `IMPORTXML()`, due to that "50 instances" limit mentioned above.

Because the `ARRAYFORMULA()` doesn't *actually* create new formulas in subsequent rows (but rather just applies the formula to the next row in the range), you **MUST** copy your formula down for each time you want to use `IMPORTXML()`.

You can do this by grabbing the small box that shows up in the bottom right of any cell with your scraping formula in it and dragging the box down over the new rows with contacts to be scraped.

Here's what the process looks like:

The screenshot shows a Google Sheets spreadsheet titled "Google Sheets CRM Tutorial". The formula in cell F2 is =TRANSPOSE(IFERROR(IMPORTXML(website,"//title//meta[@name='description']/@content||/meta[@name='keywords']/@content"), "none"))

The table has the following columns:

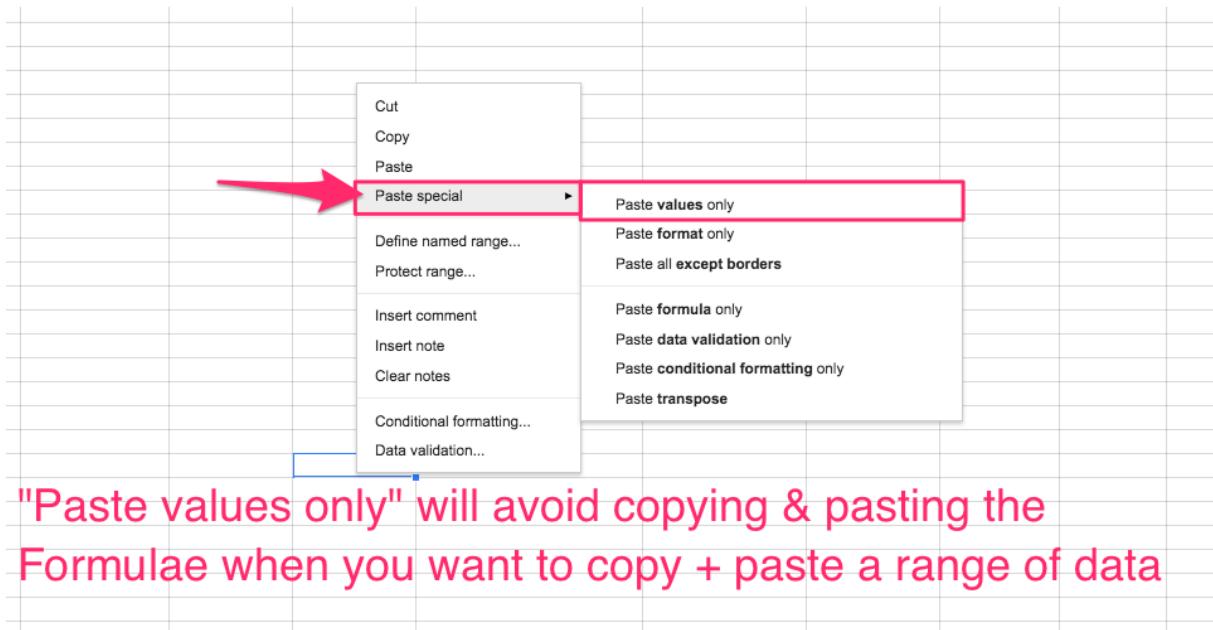
- Email
- Phone
- Value
- Why Zapier?
- Twitter
- Meta Information
- Meta Information
- Meta Information
- Assigned
- Notes

The data starts at row 4:

Email	Phone	Value	Why Zapier?	Twitter	Meta Information	Meta Information	Meta Information	Assigned	Notes
hael@michaelgrubbs.com	1234567890	500-1000		@michaelgrubbs				Danny	
nichael@mobilized.com		1000-10000		@mobilized1234				Danny	An early bird gets the worm
johnny@zapier.com	8004448888	1000-10000	It connects my thir	@ZapierTesting				Danny	I heard they have a free plan
google@google.com	9998887777	1000-10000	Google<3Zapier	@TheGooglator				Danny	Google doesn't have keywords? Ironic
Donald@duck.com	1236664444	1000-10000	Quack!	@McScroogeGold				Danny	
Button@benjamin.com	8881117777	500-1000	It's evergreen!	@B3NJ4M1N999				Matt	
mark@terman.com	8887774444	0-500	I don't know enough about it!					Mike	
magic@kingdom.com	1234345555	0-500	Magical Stuff Hap	@mmickey1414				Mike	
bill@ionnaire.biz	8884445565	1000-10000	I like to automate	@InflateGate59				Danny	

What happens when you hit your 50th contact? You can't scrape anymore unless you remove some of the old `IMPORTXML()` functions. I usually do this by highlighting all of the cells that receive results from the `IMPORTXML()` formulas then right-clicking in the uppermost left cell of the highlighted range and selecting **Paste Special > Values Only**.

If you try to paste normally, you will only paste the formula in each cell (which would definitely exceed your 50 `IMPORTXML()` limit)—but pasting the values only just preserves the text you already copied from the websites.



You shouldn't *see* anything change once you paste, but you'll notice that if you double-click any of those cells, the formula is gone and only the text data remains.

This process is especially useful if you want to grab data that has been manipulated by ANY formula in your sheet and paste it to another sheet or document altogether.

TIP: Leave the last row with the `IMPORTXML()` function out of this process. This way, the next time you need to drag the formula down over "new" contacts, you can start the next scraping at the most recent contact (rather than copying the formula from the hidden formula row and pasting into the cell).

Think you might have a hard time knowing where the "last scraped contact" was? Let's make it easier to see where old contacts end and new ones begin with some highlighting via conditional formatting!

4. Highlight new contacts with a Conditional Formatting rule

You can use this trick to highlight any type of data you want in your sheet. In this case, it functions purely as a boost to the usability of your CRM, but you could also use **Conditional Formatting** to quickly identify VIP prospects based on any set of conditions like date created, keywords in a cell, or numeric comparisons. You can also use this formatting to literally "format" your text with bold, colors, decoration, and a number of other visual changes.

To start, in the top-left corner of your sheet, there is a gray box that is neither a row nor a column.

If you click this, it will highlight **EVERYTHING** in the sheet.

By using **Right Click > Conditional Formatting** on this box, you will both select the **entire sheet** as a selected range *and* pop open the Conditional Formatting sidebar to the right.

The screenshot shows a Google Sheets spreadsheet titled "Google Sheets CRM Tutorial". A pink arrow points from the top-left corner of the sheet area to a context menu that has appeared after a right-click. This menu includes options like Cut, Copy, Paste, Paste special, Sort range..., Convert to links, Unlink, Edit link, Define named range..., Protect range..., Insert comment, Insert note, Clear notes, and two highlighted options: Conditional formatting... and Data validation... A second pink arrow points from the bottom-left of the same context menu to the "Conditional formatting..." option.

The main spreadsheet area contains several columns: Email, Phone, Value, Why Zapier?, Twitter, Meta Information, Meta Information, Assigned, and Notes. A row is selected, and the "Conditional format rules" pane is open on the right side of the screen. The pane shows a single rule applied to the range "A1:K1" (cell A1 is highlighted in pink). The rule is set to "Single color" with the color "#D9C3E1". It also includes a "Format cells if..." section with the condition "Cell is empty". The "Formatting style" dropdown is set to "Default". At the bottom of the pane are "Done" and "Cancel" buttons, and a link to "Add another rule".

You can highlight any range then do:

Right Click > Conditional Formatting

This will launch the pane to the right and make the selected range the default for formatting.

Here, you can define how you'd like to format based on a number of text-based conditional statements and custom rules.

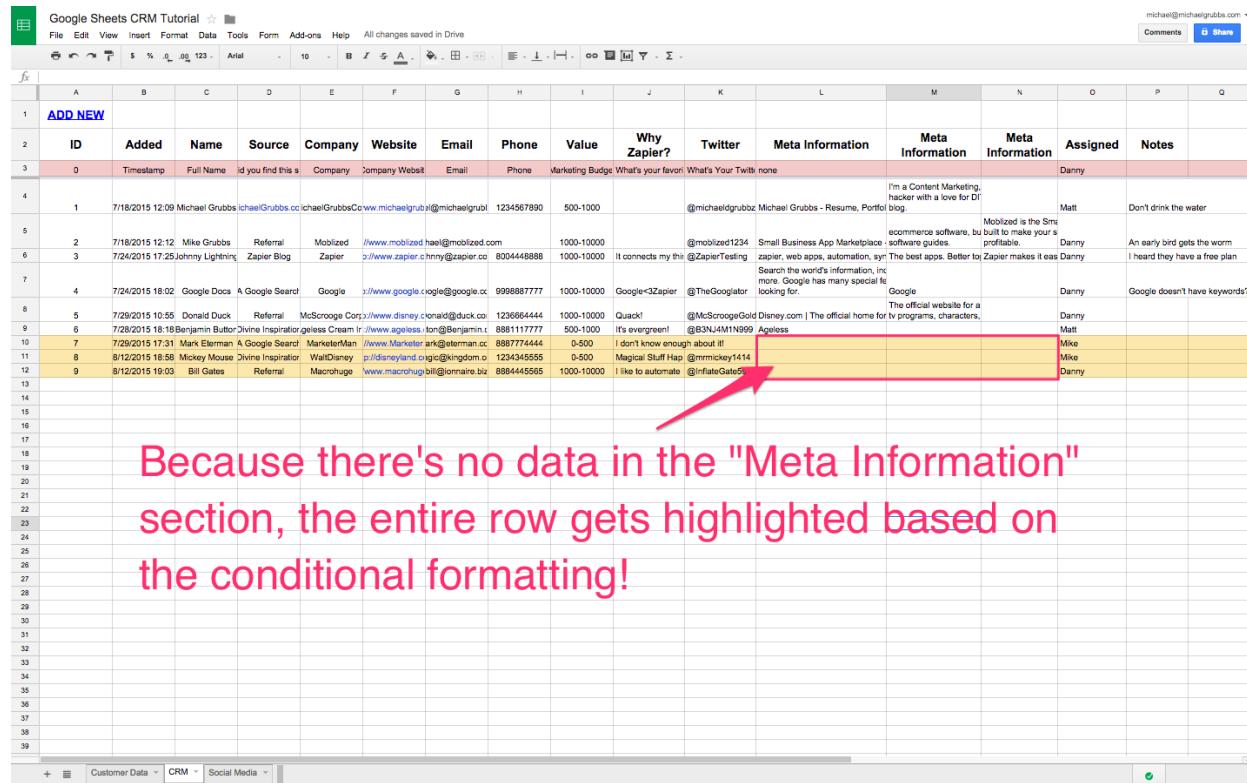
I'll use the "Custom Formula is" at the bottom of the first drop-down.

In the formula box, we'll put this formula:

```
1 =AND($C:$C<>"", $K:$K="")
```

- =AND(returns TRUE or FALSE based on both logic statements.
- \$C:\$C<>"" checks to make sure there's a CRM entry by looking at the Name column.
- \$K:\$K="" checks to see if that contact has had their Meta info scraped by looking at the first column in the "Meta Information" columns.

Then you can select whichever color you want to use for the highlight!



The screenshot shows a Google Sheets spreadsheet titled "Google Sheets CRM Tutorial". The data is organized into several columns: ID, Added, Name, Source, Company, Website, Email, Phone, Value, Why Zapiers?, Twitter, Meta Information, and two columns for Meta Information. A red arrow points to the row for Bill Gates, which is highlighted in yellow. The row contains the following data:

ID	Added	Name	Source	Company	Website	Email	Phone	Value	Why Zapiers?	Twitter	Meta Information	Meta Information	Assigned	Notes
0	Timestamp	Full Name	id you find this s	Company	Company Website	Email	Phone	Marketing Budget	What's your favor!	What's Your Twitt	none		Danny	
1	7/18/2015 12:09	Michael Grubbs	ichaelGrubbs.co	ichaelGrubbsCo	michaelgrubbs@michaelgrubbs.com	1234567890	500-1000			@michaelgrubbs	Michael Grubbs - Resume, Portfoli blog.	I'm a Content Marketing, hacker with a love for D!	Matt	Don't drink the water
2	7/18/2015 12:12	Mike Grubbs	Referral	Mobilized	http://www.mobilized.com	hael@mobilized.com		1000-10000		@mobilized1234	Small Business App Marketplace	Mobilized is the Sm ecommerce software, bu built to make your s profitable.	Danny	An early bird gets the worm
3	7/24/2015 17:25	Johnny Lightning	Zapier Blog	Zapier	http://www.zapier.com	hmy@zapier.co	8004448888	1000-10000	It connects my thi	@ZapierTesting	zapi, web apps, automation, syn	Search the world's information, inc more. Google has many special fe looking for.	Danny	I heard they have a free plan
4	7/24/2015 18:02	Google Docs	A Google Search	Google	http://www.google.com	ogle@google.co	9998887777	1000-10000	Google-3Zapier	@TheGooglator	Google	The official website for a	Danny	Google doesn't have keywords? In
5	7/29/2015 10:55	Donald Duck	Referral	McScrooge Corp.	http://www.donaldduck.co	1236664444	1000-10000		Quack!	@McScroogeGold	Disney.com The official home for tv programs, characters,	Danny		
6	7/29/2015 18:18	Benjamin Button	Divine Inspiration	Inspiration gelless Cream	http://www.apileess.com	ton@benjamin.r	8881117777	500-1000	It's evergreen!	@P3NJA1M1N699	Agiless		Matt	
7	7/29/2015 17:31	Mark Eterman	A Google Search	MarketeterMan	http://www.marketerman.co	ark@eterman.co	8887774444	0-500	I don't know enough about it!				Mike	
8	8/12/2015 18:58	Mickey Mouse	Divine Inspiration	WallDisney	http://disneylandmagic@kingdom.o	mickey@onnair.biz	1234345555	0-500	Magical Stuff Happ	@immickey1414			Mike	
9	8/12/2015 19:03	Bill Gates	Referral	Macrohug	http://www.macrohug.com	bill@onnaire.biz	8884445565	1000-10000	I like to automate	@In-fateGate5			Danny	

Because there's no data in the "Meta Information" section, the entire row gets highlighted based on the conditional formatting!

You may notice that in the formula we had to use the actual column letters and Dollar \$ signs in the Custom Formatting formula. This is required to color the *whole row* rather than just a single cell. Check out [Google's Conditional Formatting reference](#) for more information on why this is.

One last thing to add is a column that will be used to simply know whether our agent made contact.

Create a column and label it however you want (mine is “Contacted”). Then decide how you’d like to “check off” if the customer was contacted. I will use a simple code of Yes (y) / No (n).

Here’s how some example data may look in this field:

M	N	O	P	Q	R	S	T	U
Meta Information	Meta Information	Assigned	Contacted	Notes				
I'm a Content Marketing, hacker with a love for DI I blog.		Danny	y					
Mobilized is the Sma ecommerce software, bu built to make your s - software guides.	Moblized is the Sma ecommerce software, bu built to make your s - software guides.	Matt	y					
The best apps. Better to Zapier makes it eas	Zapier makes it eas	Danny	y					
The official website for a tv programs, characters,		Danny	y					
		Matt	n					
		Mike						
		Mike						
		Danny						

A Column for your team to record if they've made contact



So now we've captured a lead or customer, assigned them to a representative, and have qualified them with some additional information. We've also set it up so that new entries will be highlighted, so we know to scrape them right away when we load our CRM and have given our team a way to record if they've made contact.

The next phase of any good relationship is follow-ups! Why don't we set up some social management and outreach via Twitter?

Build an Outreach System with Social Media and Email

It's pretty common to include social media profiles in your CRM. In the Form and CRM examples above, we collected each prospect's Twitter handle at the time of data entry. Let's assume that everyone fills out their handle correctly (and that everyone has a Twitter account) and set up a Twitter outreach tool to accompany our CRM.

This sheet will be able to:

1. Automatically create Tweets addressed to the contact's @TwitterHandle
2. Include a reference to their personal sales contact
3. Check to see how long ago the customer signed up
4. Send the Tweet to the prospect with 2 clicks
5. Automatically email the prospect as well, 3 days after your call

1. Import data into your Social Media sheet

We don't need to use every data point from the CRM sheet. For this social media example, we'll use the named ranges **added** (date added), **name** (customer name), **twitter** (@handle), and **assigned** (the team member who will get in touch).

We need to target each range with a formula. Using `ARRAYFORMULA()` and setting its parameter to the Named Ranges we set up earlier, we can quickly pull specific ranges.

We'll begin by importing the ranges into the "Social Media" sheet:

Name:

```
1 =ARRAYFORMULA(IF(twitter<>"",name,""))
```

- `=ARRAYFORMULA(IF(twitter<>"",`, checks to ensure the contact has a Twitter handle in the CRM and makes it apply to all future rows.
- `name,"")` returns the contact's name if the `IF()` was true, otherwise it returns "".

Twitter:

```
1 =ARRAYFORMULA(twitter)
```

- Returns the "twitter" named range.

Assigned:

```
1 =ARRAYFORMULA(IF(twitter<>"",assigned,""))
```

- Same explanation as the "Name" column, except it returns the assigned range, which was the team member instead of the contact's name.

Here's what your "Social Media" sheet will look like at this point:

	A	B	C	D	E
1	Name	Twitter	Assigned		
2	Full Name	What's Your Twitter Handle	Danny		
3	Michael Grubbs	@michaelgrubbs	Matt		
4	Mike Grubbs	@moblized1234	Danny		
5	Johnny Lightning	@ZapierTesting	Danny		
6	Google Docs	@TheGooglator	Danny		
7	Donald Duck	@McScroogeGold	Danny		
8	Benjamin Button	@B3NJA4M1N999	Matt		
9	Mark Eterman	@m4rke7er8989	Mike		
10	Mickey Mouse	@mrmmickey1414	Mike		
11	Bill Gates	@InflateGate59	Danny		
12					
13					

Still putting Formulae in a separate row.

The data is then imported into all of the rows beneath it.

2. Combine your CRM data with a dynamic Tweet

With the basic CRM data imported, we need a Tweet that we can insert the data into.

In either your column header row or the dedicated formula row (the one highlighted in red), break your Tweet into sections that would surround your imported **name**, **twitter**, and **assigned** data.

In this example, I break it down like this:

- 1 (twitter) > Greeting > (name) > Main Text > (assigned) > Closing
2 Punctuation

You can structure this however you want, placing your dynamic content in any number of creative phrasings that include links, hashtags, and more.

Now we need to combine all the parts into one cell. This happens in the “Tweet Copy” column.

Here's what the completed formula looks like:

- ```
=ARRAYFORMULA(IF(twitter<>"",twitter&"J2&name&L2&assigned&N2,""))
```

- =ARRAYFORMULA(IF(twitter<>"", checks to see if the customer has a Twitter handle on file and makes the formula apply to all future rows.
  - twitter&J\$2&name&L\$2&assigned&N\$2 combines each of the CRM data points with the “chunked” Tweet we created in the formula row. The & sign is for combining two text values with each other in one cell.

Here's an example of what you get:

@moblized1234 Hey Mike Grubbs, Thanks again for connecting! How was your chat with Danny?

| C        | D                                                                                                     | G                     | H | I                                  | J | K | L | M | N |
|----------|-------------------------------------------------------------------------------------------------------|-----------------------|---|------------------------------------|---|---|---|---|---|
| Assigned | Tweet Copy                                                                                            | Tweet Parts (@Handle) |   | Hey (NAME)connecting! HowSSIGNEI ? |   |   |   |   |   |
| Danny    | What's Your Twitter Handle? Hey Full Name, Thanks again for connecting! How was your chat with Danny? |                       |   |                                    |   |   |   |   |   |
| Matt     | @michaelgrubbs Hey Michael Grubbs, Thanks again for connecting! How was your chat with Matt?          |                       |   |                                    |   |   |   |   |   |
| Danny    | @mobiled1234 Hey Mike Grubbs, Thanks again for connecting! How was your chat with Danny?              |                       |   |                                    |   |   |   |   |   |
| Danny    | @ZapierTesting Hey Johnny Lightning, Thanks again for connecting! How was your chat with Danny?       |                       |   |                                    |   |   |   |   |   |
| Danny    | @TheGooglator Hey Google Docs, Thanks again for connecting! How was your chat with Danny?             |                       |   |                                    |   |   |   |   |   |
| Danny    | @McScroogeGold Hey Donald Duck, Thanks again for connecting! How was your chat with Danny?            |                       |   |                                    |   |   |   |   |   |
| Matt     | @B3N4M1N999 Hey Benjamin Button, Thanks again for connecting! How was your chat with Matt?            |                       |   |                                    |   |   |   |   |   |
| Mike     | @m4ke7er8989 Hey Mark Eterman, Thanks again for connecting! How was your chat with Mike?              |                       |   |                                    |   |   |   |   |   |
| Mike     | @mmickey1414 Hey Mickey Mouse, Thanks again for connecting! How was your chat with Mike?              |                       |   |                                    |   |   |   |   |   |
| Danny    | @InflateGate59 Hey Bill Gates, Thanks again for connecting! How was your chat with Danny?             |                       |   |                                    |   |   |   |   |   |

The formula will apply to all future rows, automatically creating your Tweets!

You can either hide your “Tweet Parts” section or leave it unhidden so you can make quick changes.

Now, you can do one of two things:

1. Copy the text and paste it into your Twitter client of choice and send the Tweets one-by-one
2. Make your life easier and send your Tweets (nearly) directly from Google Sheets

Let's do the latter!

### 3. Add a “Tweet This” link for each Tweet

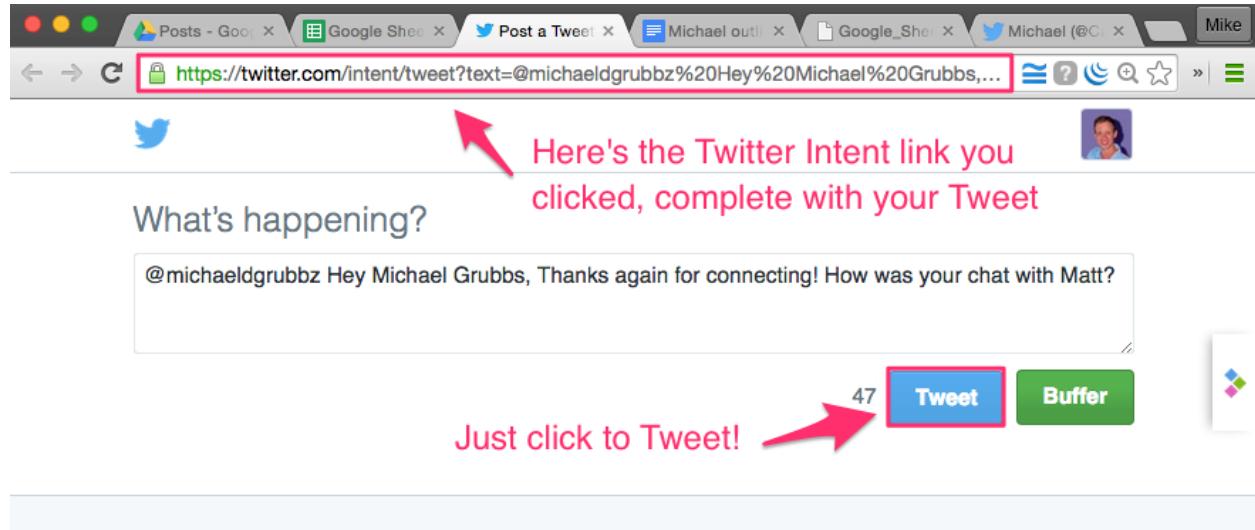
Since we’re managing customer information from our sheets CRM, it makes sense that we could interact with the customer directly from the spreadsheet.

We can accomplish this by using a Twitter “Intent” URL, which lets you pre-populate a Tweet with a string of text in the URL.

A Twitter Intent URL is structured like this:

1 <https://twitter.com/intent/tweet?text= + anything you want to say!>

You could use this URL anywhere to quickly send Tweets without jumping into Twitter. Instead, what happens is that when you click the link it will either pop-up a window or open a new tab to quickly publish your Tweet—no typing required!



**TIP:** You could also use this trick to create Tweet-able links in your blog posts for people to “Tweet This” and help drive up engagement / shares.

In this example, we’ll wrap the Twitter URL with another `HYPERLINK()` function (just like the “Add New” customer from the CRM section).

Here’s what the complete formula would look like:

```
1 =ARRAYFORMULA(IF(twitter<>"",HYPERLINK("https://twitter.com/intent/
2 tweet?text=&E2:E,"Tweet This"),""))
```

- `=ARRAYFORMULA(IF(twitter<>"",` checks if the customer has a twitter in the CRM sheet.
- `HYPERLINK("https://twitter.com/intent/tweet?text=&E2:E,` adds our completed dynamic Tweets in column E to the end of the Twitter Intent URL.
- `"Tweet This"),""))` sets “Tweet This” as the text to show in the cell, and “” is what is returned if there is no twitter account for that contact row.

One of the most frustrating things about trying to automate any Twitter task is the character limit. Especially when you are dynamically generating Tweets in this way, you’ll want to know how many characters are in your Tweets so that you can try to account for the variability of the input data.

#### 4. Add a character counter to monitor Tweet length

This counter serves 2 purposes:

- To let you know how long your dynamic tweets are on average (to adjust your Tweet parts to be more forgiving of long client names, hashtags, etc).
- To use as a point of verification before automatically sending the Tweet.

First, define the Tweet Copy column as “tweets” using the **Right Click > Define Named Range** function with rows D2:D highlighted. Now you can reference it just by typing “tweets” in your formulas.

The formula for counting the length of our completed dynamic Tweets will look like this:

1 =ARRAYFORMULA(IF(twitter<>"",LEN(tweets),""))

- =ARRAYFORMULA(IF(twitter<>"", checks to see if the customer has a twitter in the CRM sheet
- LEN(tweets,"")) uses the LEN(), or length, function to count the number of characters in the tweets column and “” is what is returned if there is no twitter account for that contact

Here's what you'll get:

| D                                                                                                     | E            | F                          |
|-------------------------------------------------------------------------------------------------------|--------------|----------------------------|
| Tweet Copy                                                                                            | Tweet Length | Tweet Button               |
| What's Your Twitter Handle? Hey Full Name, Thanks again for connecting! How was your chat with Danny? | 101          | <a href="#">Tweet This</a> |
| @michaelgrubbz Hey Michael Grubbs, Thanks again for connecting! How was your chat with Matt?          | 93           | <a href="#">Tweet This</a> |
| @moblized1234 Hey Mike Grubbs, Thanks again for connecting! How was your chat with Danny?             | 89           | <a href="#">Tweet This</a> |
| @ZapierTesting Hey Johnny Lightning, Thanks again for connecting! How was your chat with Danny?       | 95           | <a href="#">Tweet This</a> |
| @TheGooglator Hey Google Docs, Thanks again for connecting! How was your chat with Danny?             | 89           | <a href="#">Tweet This</a> |
| @McScroogeGold Hey Donald Duck, Thanks again for connecting! How was your chat with Danny?            | 90           | <a href="#">Tweet This</a> |
| @B3NJ4M1N999 Hey Benjamin Button, Thanks again for connecting! How was your chat with Matt?           | 91           | <a href="#">Tweet This</a> |
| @m4rke7er8989 Hey Mark Eberman, Thanks again for connecting! How was your chat with Mike?             | 89           | <a href="#">Tweet This</a> |
| @mrmickey1414 Hey Mickey Mouse, Thanks again for connecting! How was your chat with Mike?             | 89           | <a href="#">Tweet This</a> |
| @InflateGate59 Hey Bill Gates, Thanks again for connecting! How was your chat with Danny?             | 89           | <a href="#">Tweet This</a> |

**Make sure to account for variable data affecting the length.**

**NOTE:** If you put a URL into your dynamic Tweets it will always count as 22 characters, no matter how long it is. Twitter treats every URL as if it were shortened, so you may need to tweak your LEN() formula to account for this.

## 5. Automatically Send Followup Emails

Tweets are a great way to remind your contact about the call, but an email is an even better way to follow up and continue the conversation in-depth. Let's have our spreadsheet automatically send an email to our contacts the 3rd day after they have been contacted by our sales representative.

A simple way to do this is via a [Zapier Google Sheets integration](#). The logic behind the Zaps will be:

\*When the Contact has been contacted, wait 3 days then email them.\*\*

We'll use a multi-step Zap for this that watches Google Sheets for a new entry, then waits for 3 days and creates the email.

One preliminary step we must take is to bring our “Contacted” column into our Social Media sheet via an `=ARRAYFORMULA()`.

In this case, `=ARRAYFORMULA(contacted)` imports the named range contacted from the CRM sheet.

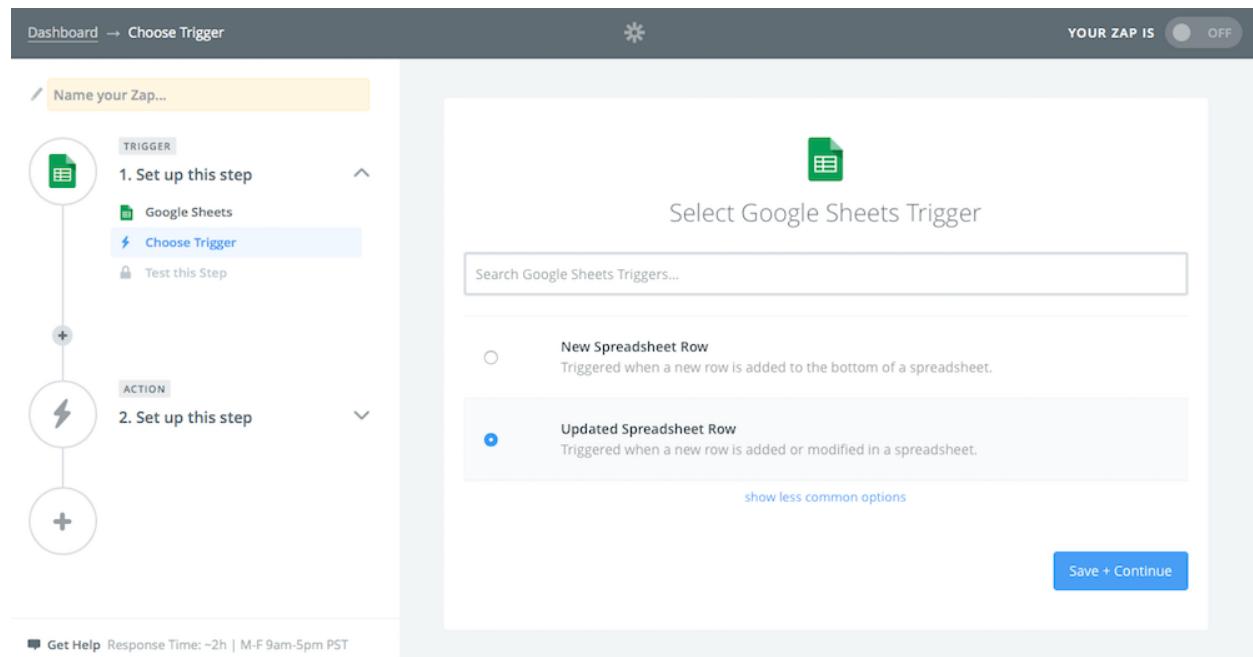
| D                                                                                                     | E            | F                          | G         |
|-------------------------------------------------------------------------------------------------------|--------------|----------------------------|-----------|
| Tweet Copy                                                                                            | Tweet Length | Tweet Button               | Contacted |
| What's Your Twitter Handle? Hey Full Name, Thanks again for connecting! How was your chat with Danny' | 101          | <a href="#">Tweet This</a> | y         |
| @michaelgrubbz Hey Michael Grubbs, Thanks again for connecting! How was your chat with Matt?          | 93           | <a href="#">Tweet This</a> | y         |
| @moblized1234 Hey Mike Grubbs, Thanks again for connecting! How was your chat with Danny?             | 89           | <a href="#">Tweet This</a> | y         |
| @ZapierTesting Hey Johnny Lightning, Thanks again for connecting! How was your chat with Danny?       | 95           | <a href="#">Tweet This</a> | y         |
| @TheGooglator Hey Google Docs, Thanks again for connecting! How was your chat with Danny?             | 89           | <a href="#">Tweet This</a> | y         |
| @McScroogeGold Hey Donald Duck, Thanks again for connecting! How was your chat with Danny?            | 90           | <a href="#">Tweet This</a> | n         |
| @B3NJ4M1N999 Hey Benjamin Button, Thanks again for connecting! How was your chat with Matt?           | 91           | <a href="#">Tweet This</a> | n         |
| @m4rke7er8989 Hey Mark Eterman, Thanks again for connecting! How was your chat with Mike?             | 89           | <a href="#">Tweet This</a> |           |
| @mmickey1414 Hey Mickey Mouse, Thanks again for connecting! How was your chat with Mike?              | 89           | <a href="#">Tweet This</a> |           |
| @InflateGate59 Hey Bill Gates, Thanks again for connecting! How was your chat with Danny?             | 89           | <a href="#">Tweet This</a> |           |

**Imported from the CRM Sheet**

This is important for the next step, which relies on changes to the **Contacted** column to trigger our Zapier automation. You'll also need one more thing: email addresses. So repeat that step, and add another new column with `=ARRAYFORMULA(email1)` to pull in each contact's email address.

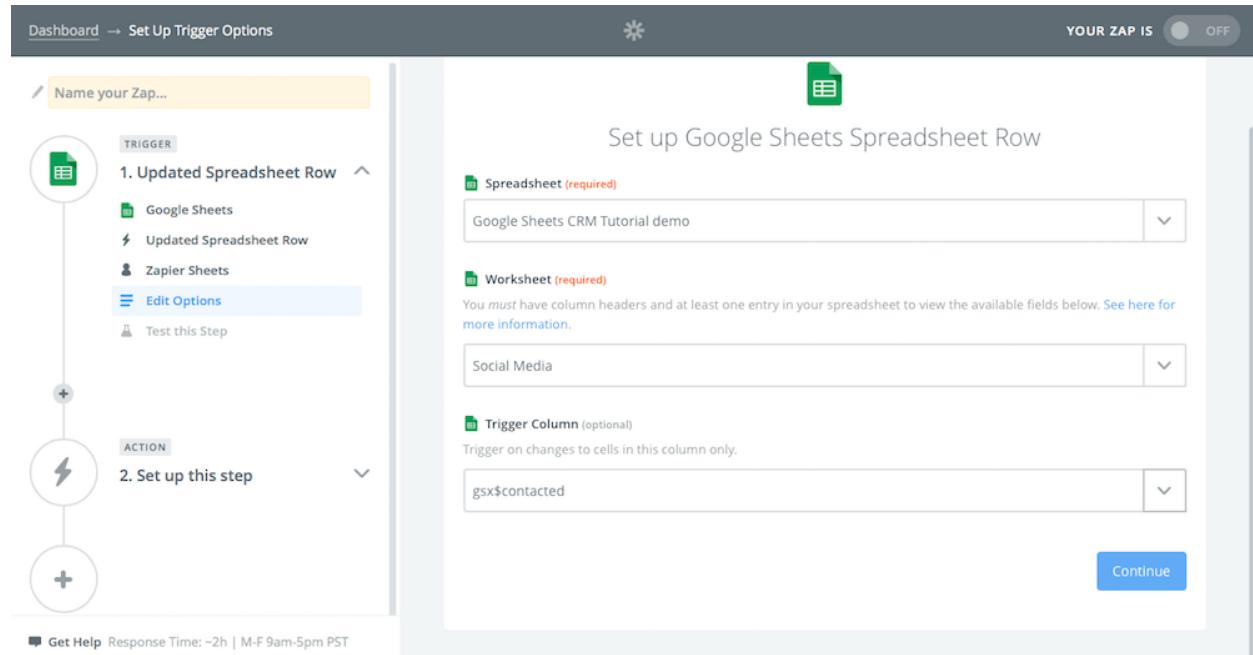
Now it's time to make our Zap. If you've never set up a Zap or don't have a Zapier account, [sign up for free](#), then run through the [setting up your first Zap](#) guide.

Once you've got the hang of the interface, create a new Zap, select Google Sheets as the Trigger app, and choose *Updated Spreadsheet Row* as the trigger.



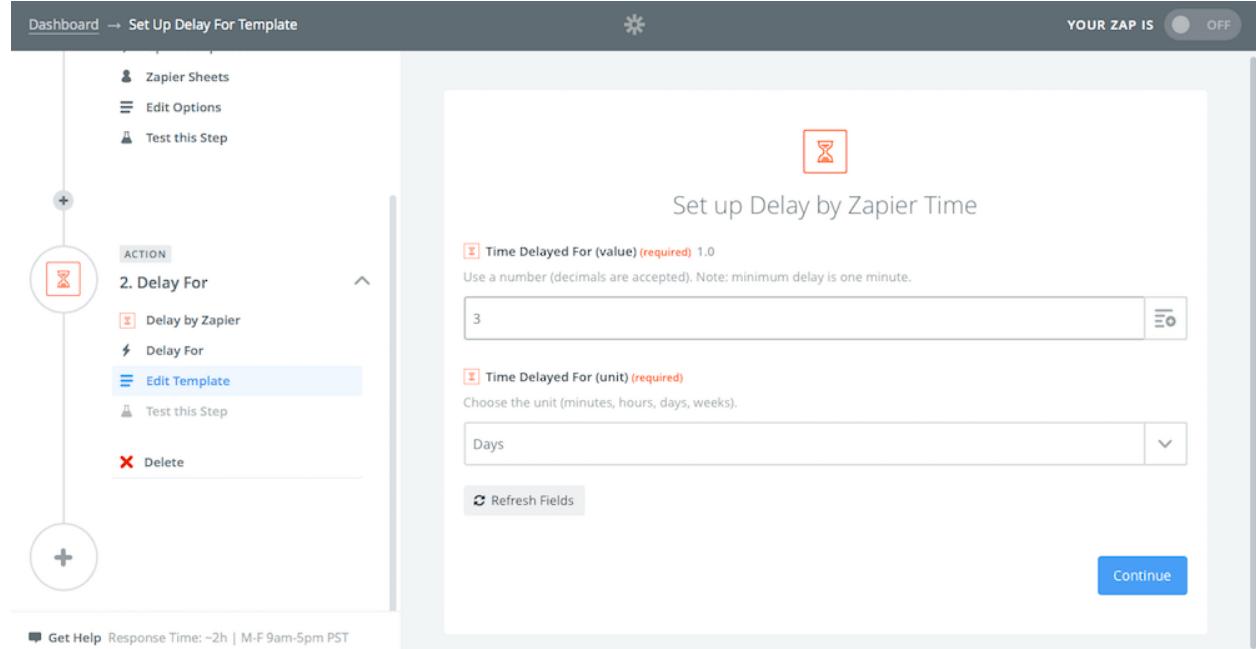
Now you'll need to connect your Google Sheets account if you haven't already. Then, select the spreadsheet and worksheet you want to watch—in this case, select your CRM spreadsheet, and the *Social Media* sheet.

You can then specify which column to watch for changes, and we want to watch the **Contacted** column for that. Click the down arrow under Zapier's *Trigger Column* field, and find the column which should be labeled `gsx$contacted`.



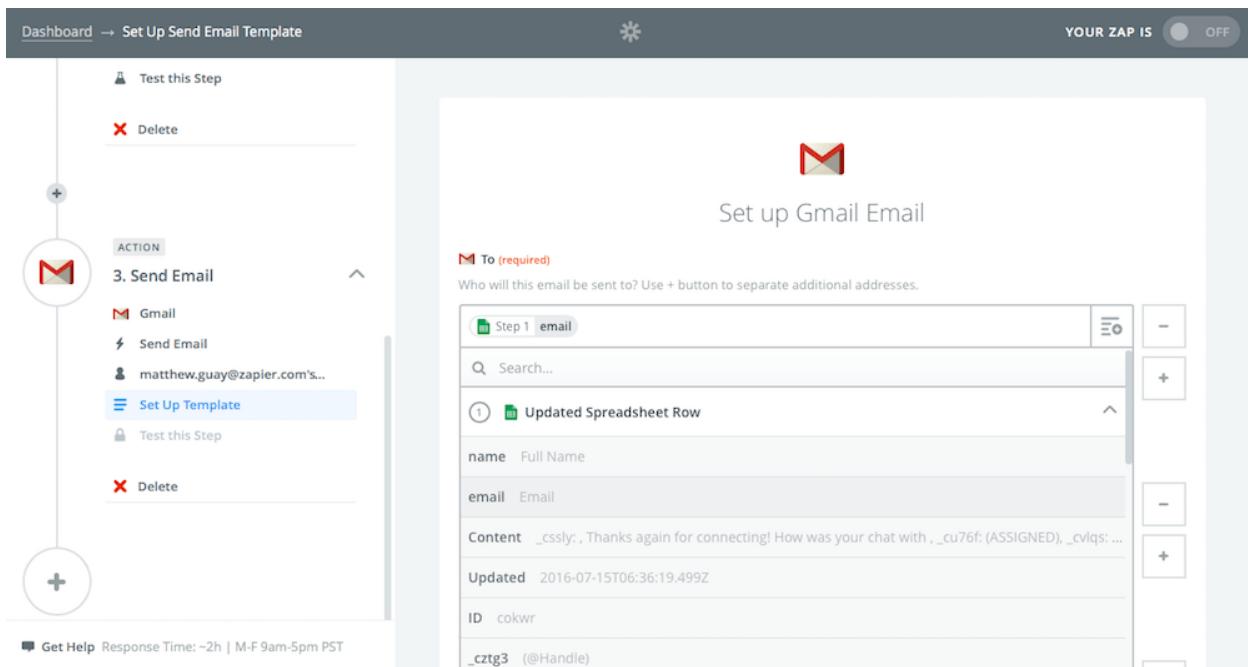
For the next step of your Zap, you'll add an action, select the *Delay by Zapier* app, and then choose *Delay*

For. Then, tell the Zap to delay for 3 days by entering 3 in the *Time Delayed For (value)* field and then select Days in the *(unit)* field.



Now we're ready to make our email. Add one more step to the Zap, and this time either select the *Email by Zapier* or the *Gmail* app to send your message. Select the account, as normal, then you can setup your automated email template.

Click the + icon beside the *To* field, and select your *Email* column from Google Sheets. Add a subject, then write the body of your email message. You can include your contact's name in the body—again, using the + icon on the right to copy the field from Google Sheets—and add any other personalizations you want.



Name the Zap and save it to turn it on. Then, you’re done: when your sales team marks someone as “contacted,” the Zap will notice the change to your **Contacted** column value and set your email to be sent in 3 days.

---

With this new CRM, you can now add contacts to your CRM from a form, import data about them from the web, and automatically reach out via Twitter and email.

Pretty cool right?

And that’s just the tip of the iceberg. You can take what you’ve learned from this tutorial to create your own Google Sheets systems.

Whether you are trying to replace an existing workflow, or just can’t find a tool that does *quite* what you need, Google Sheets is flexible enough for the job.

## Connect Google Sheets to Your Other Apps

Web scraping and adding data with forms can make some powerful-yet-simple apps to manage contacts—or anything else you want. And with Zapier’s [Google Sheets integrations](#) integrations, you can make your app do more work on its own automatically.

Say you want to also add followup tasks to your [project management tool](#), or want to add contacts to your [email marketing app](#). Just link your spreadsheet to Zapier, and it can watch for new entries and add those to any other app.

Beyond using Google Sheets with Zapier, you can also custom code your own scripts to build advanced functions, connect with web services, and turn your spreadsheets into nearly-full-fledged custom applications.

We'll dig into some of those possibilities in later chapters. But first, let's take a side-step and look at some of Google Sheets' best hidden features for importing text, formatting and translating it, and turning it into outlines, HTML tables, and more so you can create even more advanced apps on your own.

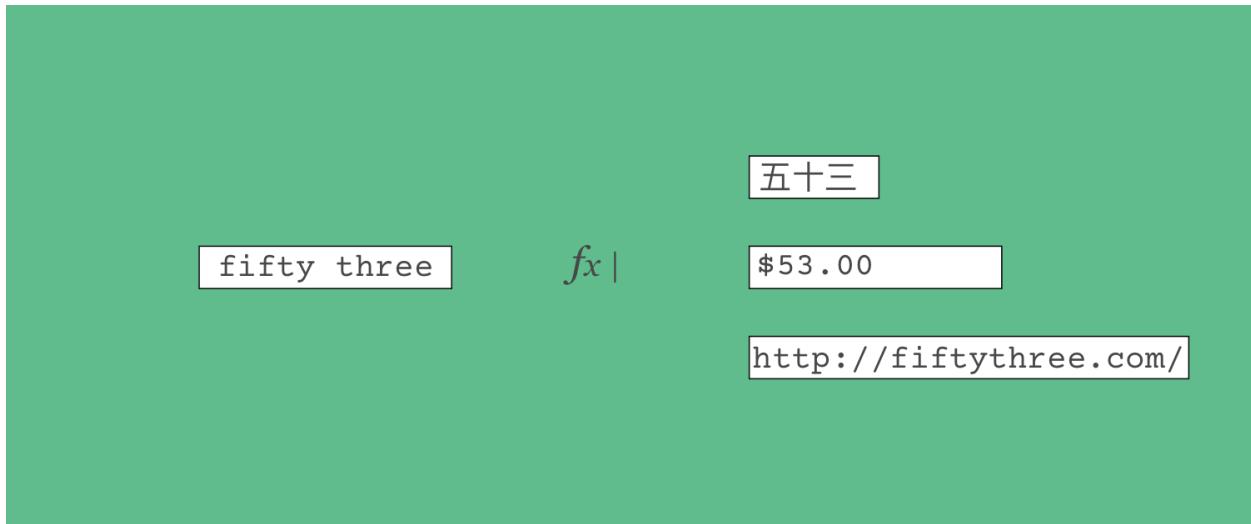
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Enjoy? Read and share this chapter online: [zpr.io/uB9j](https://zpr.io/uB9j)

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*Written by freelance writer [Michael Grubbs](#).*

# Chapter 4: Write Faster with Spreadsheets—10 Shortcuts for Composing Outlines, Research, HTML Tables and More



If numbers are involved, a spreadsheet's the tool for the job. But spreadsheets can also be used for so much more: storing contacts, compiling research, organizing outlines, and more.

With the right functions, you can use spreadsheets to quickly craft HTML, format links in Markdown, translate text, clean up copy, or perform any other bulk text editing task where you just might need a bit of automation help.

To take your [spreadsheet-powered CRM](#) further, or to make your own spreadsheet tools, here are the best text-focused features built into Google Sheets.

---

## Maintain an Editorial Calendar

The screenshot shows a Microsoft Excel spreadsheet titled "Status". The columns are labeled A through F. Column A is "Month", B is "Category", C is "Post Title", D is "Date", E is "Status", and F is "Link". Rows 3 and 4 show entries for March: "Tutorial" under Month, "Screenshot Tools, Tips and Shortcuts" and "How to Pick Project Management Software" under Category, and so on. Rows 8 and 9 show entries for April. The "Status" column uses conditional formatting where "Published" is green, "To Update" is pink, and "Draft" is yellow. The "Conditional format rules" dialog box is open, showing a rule for "Text contains" "Published" with a green color scale. Other rows are empty.

|    | A     | B            | C                                                          | D         | E         | F    |
|----|-------|--------------|------------------------------------------------------------|-----------|-----------|------|
| 1  | Month | Category     | Post Title                                                 | Date      | Status    | Link |
| 3  | March | Tutorial     | Screenshot Tools, Tips and Shortcuts                       | 3/17/2016 | Published |      |
| 4  |       | Productivity | How to Pick Project Management Software                    | 3/22/2016 | Published |      |
| 5  |       | Roundup      | Best Outline Apps                                          | 3/24/2016 | To Update |      |
| 6  | April | Tutorial     | Infusionsoft Everything                                    | 3/29/2016 | Published |      |
| 7  |       | Tutorial     | Manage Multiple Accounts                                   | 3/31/2016 | Draft     |      |
| 8  |       | Internal     | Welcoming Business Development Leader Cody Jones           | 4/1/2016  | Published |      |
| 9  |       | Roundup      | The Best Project Management Software                       | 4/4/2016  | Published |      |
| 10 |       | Tutorial     | How to Manage Personal Tasks with a Project Management App | 4/7/2016  | Published |      |
| 11 |       | Tutorial     | Spreadsheets for Writing                                   | 4/10/2016 | Draft     |      |
| 12 |       | Internal     | Zapier Tips                                                | 4/13/2016 | Draft     |      |

If there's one part of the writing process that seems obvious for a spreadsheet, it's the editorial calendar. With dates, word counts, topics, status, and budget to manage, a spreadsheet's unlimited columns and number-centric tools seem perfect.

And they are. Just take a bit of time to add columns for everything you want to track, something that will be a bit different for every blog, newsletter, or online publisher. You might not need to fill in each column for each piece: I've used a *Month* column that only gets filled in once to group articles by months, something that could work equally well to organize a blog's articles by day or a publisher's content by author.

Then, if you want to hide old items, you could select the rows under that month or another category, right-click and select *Hide Rows*. In Smartsheet, another spreadsheet app with more project-centric tools, you could [indent the rows](#) under that category—select the rows, then click the *Indent* button—and view or hide them with a click.

The screenshot shows a Microsoft Excel spreadsheet with a formula =SUM(F3:F7) in the first row. The columns are labeled C through G. The first row contains "Post Title", "Date", "Status", "Price", and "Budget". The "Budget" cell has a value of \$300. Rows 3 through 7 show article details: "Screenshot Tools, Tips and Shortcuts" (Date 3/17/2016, Status Published, Price \$100), "How to Pick Project Management Software" (Date 3/22/2016, Status Published, Price \$80), "Best Outline Apps" (Date 3/24/2016, Status To Update, Price \$60), "Infusionsoft Everything" (Date 3/29/2016, Status Published, Price \$110), and "Manage Multiple Accounts" (Date 3/31/2016, Status Draft, Price \$30). Row 8 contains a "Total:" label and a cell with the value \$390. The "Conditional format rules" dialog box is open, showing a "Custom" rule for values between 200 and 300, with colors transitioning from green to red. The "Preview" section shows a color bar with green, red, and yellow segments. Buttons for "Done" and "Cancel" are at the bottom.

|    | C                                                          | D         | E         | F     | G      |
|----|------------------------------------------------------------|-----------|-----------|-------|--------|
| 1  | Post Title                                                 | Date      | Status    | Price | Budget |
| 2  |                                                            |           |           |       | \$300  |
| 3  | Screenshot Tools, Tips and Shortcuts                       | 3/17/2016 | Published | \$100 |        |
| 4  | How to Pick Project Management Software                    | 3/22/2016 | Published | \$80  |        |
| 5  | Best Outline Apps                                          | 3/24/2016 | To Update | \$60  |        |
| 6  | Infusionsoft Everything                                    | 3/29/2016 | Published | \$110 |        |
| 7  | Manage Multiple Accounts                                   | 3/31/2016 | Draft     | \$30  |        |
| 8  | Total:                                                     |           |           | \$390 |        |
| 9  | Welcoming Business Development Leader Cody Jones           | 1/1/2016  | Published |       |        |
| 10 | The Best Project Management Software                       | 4/4/2016  | Published |       |        |
| 11 | How to Manage Personal Tasks with a Project Management App | 4/7/2016  | Published |       |        |
| 12 | Spreadsheets for Writing                                   | 4/10/2016 | Draft     |       |        |
| 13 | Zapier Tips                                                | 4/13/2016 | Draft     |       |        |

Have to keep this month's content within budget? Just add a column to track how much each article costs, along with perhaps another column to track this month's budget. You can then easily use `=sum()` and `=Cell1-Cell` functions to see how close you are to your budget. Or, add conditional formatting from *Format -> Conditional Formatting...* to have Google Sheets change the color of your budget cell once you've gone over budget.

## Track Published Items

Once you've planned the content you'll publish, it's time to turn those ideas into new posts. There's no reason to paste your titles into WordPress manually; app integration platform [Zapier](#) can watch for new rows—or newly updated rows, to watch for only article ideas that are *Approved*, say—and turn them into new draft posts in WordPress.

Another step on the Zap could then add the link to the draft post back to the spreadsheet. All you'll have to do is paste in your article content and hit *Publish*.

### Zapier Integrations:

- [Create new WordPress posts from new Google Sheets rows](#)
- [Log WordPress posts to a Google Sheets spreadsheet](#)

Or, you could link your spreadsheet to your productivity app. Say you use Trello to manage your article ideas and editorial process—the way the Zapier team [manages our blog queue](#). Whenever a Trello card gets moved to the *Published* list, a Zapier automation could log that published article to your spreadsheet for a record of what's been published, including information such as word count and author.

### Zapier Integration:

- [Save new or moved Trello cards to a Google Sheets spreadsheet](#)

If you use the spreadsheet to manage your blog's schedule and editorial workflow, a Zapier automation could create events in your calendar app or tasks in your to-do list app so you remember to edit and publish articles on time.

### Zapier Integrations:

- [Create Google Calendar events from new Google Sheets spreadsheet rows](#)
- [Turn Google Sheets rows into Todoist tasks](#)
- [Turn Google Sheets spreadsheet rows into Wunderlist tasks](#)

No matter what you want to track about your editorial process, a spreadsheet can be a valuable tool since it's so flexible. Then, just open another sheet, and it's time to start outlining the content you've planned.

**Related:** For inspiration about your editorial calendar, check out Zapier's [Guide to Writing and Publishing](#) with a look at how we manage our editorial calendar and turn our blog posts into eBooks like the one you're reading right now.

## Build Detailed Outlines

| A  | B                                                             | C                                                     |
|----|---------------------------------------------------------------|-------------------------------------------------------|
| 1  | <b>Spreadsheets for Writers</b>                               | <i>Notes:</i>                                         |
| 2  |                                                               |                                                       |
| 3  | 1 Maintain an Editorial calendar in Google Sheets             |                                                       |
| 4  | list articles                                                 |                                                       |
| 5  | organize by month, book, category, etc.                       | <i>perhaps add extra row on left for organization</i> |
| 6  | add fees and calculate budget                                 | <i>mention simple math functions for this</i>         |
| 7  | possibly share spreadsheet for public editorial calendar      |                                                       |
| 8  | 2 Outline in a spreadsheet                                    |                                                       |
| 9  | indent for sub-points, or add them in separate column         |                                                       |
| 10 | 3 Use Google Translate to identify text or translate directly |                                                       |
| 11 | 4 Pull in data from websites and RSS                          |                                                       |
| 12 | 5 Create links automatically                                  |                                                       |
| 13 | 6 Combine text from various cells                             |                                                       |
| 14 | 7 Display images from a URL                                   |                                                       |
| 15 | 8 Combine cells to make complex HTML tables                   |                                                       |
| 16 |                                                               |                                                       |

Once you've planned your content strategy, it's time to start turning those ideas into reality. First, outline your thoughts to make sure your articles and chapters flow in a logical order.

There are [tons of outlining apps](#) designed to organize ideas into detailed blueprints, and they're great. But so is your spreadsheet.

Just type each idea you want to cover in its own row—or if you've already typed it in a list, just paste the whole list and the spreadsheet app will add each to a new row automatically. Then, click and drag on the left-hand row number to rearrange ideas into the flow your piece needs.

With that done, it's time to flesh out the points with sub-points and notes. Perhaps add a new column for point numbers on the left, then add new rows for each sub-point with spaces or dashes to indent sub-points and make them stand out. Alternately, you could add sub-points in the next columns on the right, though that might be a bit harder to read.

You might not even need to type in your outline ideas. [Spreadsheet integrations](#) could bring in ideas from blog posts you read and notes you take. Perhaps [favorite relevant tweets](#) or [add ideas to a project notebook](#), then have Zapier add those as new rows in your outline spreadsheet. All you'll have to do is organize the ideas once you're ready to write.

The screenshot shows a Google Sheets spreadsheet titled "Spreadsheets for Writers". Column A lists numbered steps, and column B lists detailed descriptions. Column C is a notes column. A conditional formatting rule is applied to column B, specifically to cells B1:B1007. The rule is set to "Text contains" followed by a space character, applying a "Custom" style with bold and italicized text.

|    | B                                                                                                                                                                                                                                      | C                                                                                                      |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 1  | <b>Spreadsheets for Writers</b>                                                                                                                                                                                                        | Notes:                                                                                                 |
| 3  | 1 Maintain an Editorial calendar in Google Sheets<br><i>list articles</i><br><i>organize by month, book, category, etc.</i><br><i>add fees and calculate budget</i><br><i>possibly share spreadsheet for public editorial calendar</i> | <i>perhaps add extra row on left for organization</i><br><i>mention simple math functions for this</i> |
| 8  | 2 Outline in a spreadsheet<br><i>indent for sub-points, or add them in separate column</i>                                                                                                                                             |                                                                                                        |
| 10 | 3 Use Google Translate to identify text or translate directly                                                                                                                                                                          |                                                                                                        |
| 11 | 4 Pull in data from websites and RSS                                                                                                                                                                                                   |                                                                                                        |
| 12 | 5 Create links automatically                                                                                                                                                                                                           |                                                                                                        |
| 13 | 6 Combine text from various cells                                                                                                                                                                                                      |                                                                                                        |
| 14 | 7 Display images from a URL                                                                                                                                                                                                            |                                                                                                        |
| 15 | 8 Combine cells to make complex HTML tables                                                                                                                                                                                            |                                                                                                        |

Want to make sub-points stand out even more, without adding formatting by hand every time? Just standardize the way you list sub-points—here, I've added four spaces before sub-points, but you could use a dash or other symbol instead. Then, add *Conditional Formatting* as above, only this time, apply it to your entire outline and have it watch for those spaces, dash, or other symbols. The formatting could add a new color, make the text italicized or bold, or add a background color.

For notes, those right-hand columns are a handy place to write extra text, list links that need to be mentioned, and gather anything else that your piece requires. You can then hide columns or sub-rows as needed to focus on your core outline—or, use conditional formatting again to make certain notes stand out from the others.

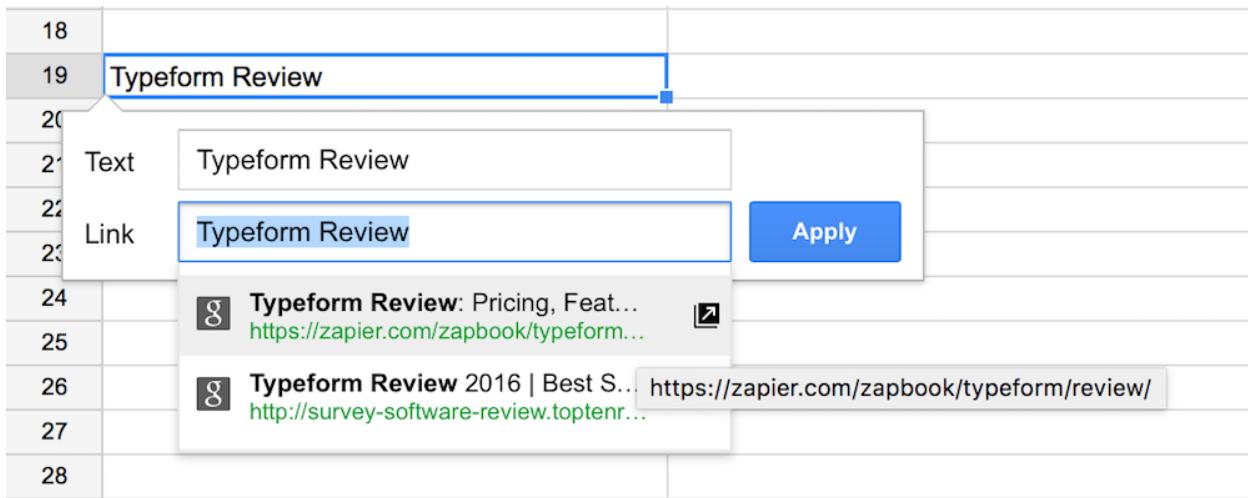
## Import Data From Websites and Feeds

The screenshot shows a Google Sheets spreadsheet with data imported from a feed. Column A lists article titles, and column B lists their URLs. Column C lists additional notes or links. The formula in cell A1 is =importFeed(A9,"items title", false, 5).

| A                                         | B                                                                                                                                     | C                                                                                |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 1 Most Recent Articles on Techinch        | Most Recent Zapier Blog Post                                                                                                          | Top Hacker News Articles                                                         |
| 2 The Best Project Management Apps        | Type Less: How Text Expansion Apps Help You Write Long Phrases With Fewer                                                             | Utopia for Realists: Universal Basic Income, 15 hour work weeks and open borders |
| 3 How to Take Great Screenshots Anywhere  | The Beginner's Guide to Dictation Software: Write Without Typing                                                                      | The Cretan Method – Pieter Hintjens on Learning, Truth, and Lies                 |
| 4 How to Do Great Customer Support        | Design 101: How to Make Great Graphics Without Design Skills                                                                          | My friend who made Anchor and kept it for too long                               |
| 5 Markdown for Beginners                  | How to Manage your Personal Tasks with a Project Management App                                                                       | Would You Ride a Bus from SF to LA If You Had Your Own Bed?                      |
| 6 How to Edit Anything on Any Webpage     | The Best Project Management Software: 50 Tools for Team Task Management                                                               | ROOT – Data Analysis Framework                                                   |
| 7                                         |                                                                                                                                       |                                                                                  |
| 8                                         |                                                                                                                                       |                                                                                  |
| 9 http://techinch.com/feed                |                                                                                                                                       |                                                                                  |
| 10 The Best Project Management Apps       | http://techinch.com/blog/The-Best-Project-Management-Apps?utm_medium=feed&utm_source=feedpress.me&utm_campaign=Feed%3A+techinch       |                                                                                  |
| 11 How to Take Great Screenshots Anywhere | http://techinch.com/blog/How-to-Take-Great-Screenshots-Anywhere?utm_medium=feed&utm_source=feedpress.me&utm_campaign=Feed%3A+techinch |                                                                                  |
| 12 How to Do Great Customer Support       | http://techinch.com/blog/How-to-Do-Great-Customer-Support?utm_medium=feed&utm_source=feedpress.me&utm_campaign=Feed%3A+techinch       |                                                                                  |
| 13 Markdown for Beginners                 | http://techinch.com/blog/Markdown-for-Beginners?utm_medium=feed&utm_source=feedpress.me&utm_campaign=Feed%3A+techinch                 |                                                                                  |
| 14 How to Edit Anything on Any Webpage    | http://techinch.com/blog/How-to-Edit-Anything-on-Any-Webpage?utm_medium=feed&utm_source=feedpress.me&utm_campaign=Feed%3A+techinch    |                                                                                  |

Want to pull articles and research into your spreadsheet? Google Sheets can import data from the web, automatically, right into your spreadsheet. You'll never have to open a new tab to research again.

Start off by adding links to your ideas. Just select a cell in your spreadsheet, and press *CMD+K* or *Ctrl+K* to add a link. Google Sheets will search Google for that item, and return the first two search results for that phrase. You can then open the search result in a new tab, or just select the result to link that text to the site.



Or, you can import the most recent articles from an RSS feed right into your spreadsheet. Just enter your RSS feed in a cell, such as `https://zapier.com/blog/feeds/latest/` for the Zapier blog. Then, in the next cell, enter this formula to import the titles of the five most recent articles (change A1 for the cell you entered the feed link in, and 5 for the number of results you want to import):

```
1 =importfeed(A1,"items title", false, 5)
```

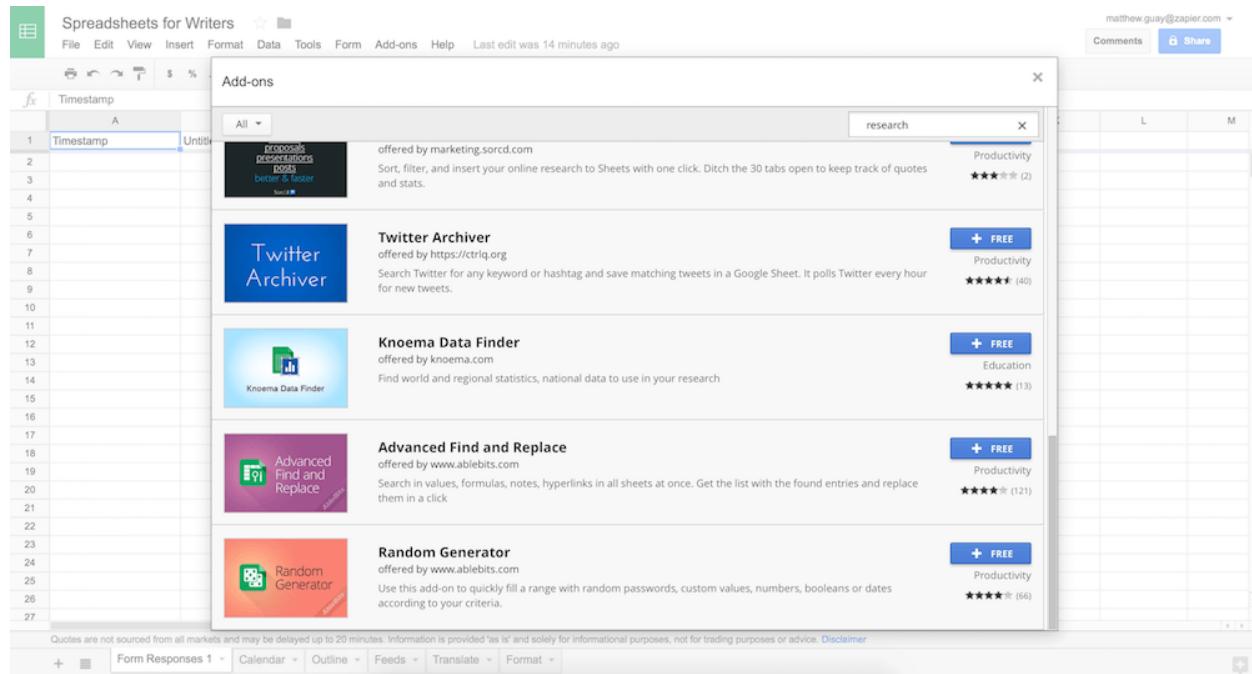
Then, to get the links to those articles, enter this in the next column:

```
1 =importfeed(A1,"items URL", false, 5)
```

Now you've got the links and titles of posts. To turn them into linked text, enter this in another column, changing B2 for the cell with your article link and A2 for the cell with your article title.

```
1 =hyperlink(B2,A2)
```

With a bit of tweaking, that'll give you an RSS feed reader right inside Google Sheets, much like in the screenshot at the start of this section. You could use the `IMPORT` functions in Google Sheets to also import HTML, XML, or data from another spreadsheet. Jump back to the guide on [scraping data with Google Sheets](#) in Chapter 3 for more details on how to import specific data directly from links, and more.



Or, you can install [Google Sheets Add-ons](#) to find extra info online and directly import it into your spreadsheet. We'll look at add-ons more in [chapter 6](#), but for now, here are some of the best add-ons to search Twitter, Wikipedia, maps and other datasets:

- **Wikipedia Tools**: search Wikipedia, find synonyms for words, find categories, and import links and facts directly from Wikipedia.
- **Knoema Data Finder**: look up data and statistics about the world—including population and GDP—and insert them into your spreadsheet.
- **Twitter Archiver**: save Tweets to a spreadsheet, search Twitter, and research hashtags inside Google Sheets.
- **Geocode by Awesome Table**: turn addresses into latitude and longitude values, then can display those locations on a map in your spreadsheet.
- **Advanced Find and Replace**: search for text, formulas, and notes in specific parts of your spreadsheet—and replace them in only those sections if needed.

## Gather Data Elsewhere and Import it to Your Spreadsheet

Want to gather new info over time, and have it added to your spreadsheet? Spreadsheet integrations could bring in ideas from the news, notes, and notifications.

As you're researching your article ideas, you could favorite relevant tweets or add ideas to a project notebook, then have Zapier add those as new rows in your outline spreadsheet. All you'll have to do is organize the ideas once you're ready to write.

### Zapier Integrations:

- [Log RSS feed updates as new rows in Google Sheets](#)

- Save Pocket tagged items to rows in a Google Sheets spreadsheet
- Create new rows on Google Sheets for new notes on Evernote
- Save liked Tweets to a Google Spreadsheet

## Add Data Quickly With a Form

The screenshot shows the Google Forms editor interface. At the top, there are tabs for 'QUESTIONS' and 'RESPONSES'. Below the title 'Spreadsheets for Writers', there is a question: 'Tell us your favorite spreadsheet function for writing?'. A 'Short answer text' input field is shown with the placeholder 'What's your favorite spreadsheet function for writing?'. Below it is a 'Long answer text' input field with the placeholder 'How do you use this function in your work?'. To the right of these fields is a toolbar with icons for Paragraph, Required, and other form settings. On the far right, there is a vertical sidebar with icons for adding questions, text, images, videos, and tables.

Another great way to gather research is with a form or survey. Google Sheets comes with a tool for that built in, which we looked at in chapter 2: [Google Forms](#). Just click *Tools* -> *Create a Form*, and a new tab will open with a form editor where you can add questions to a quick form or survey.

Save and share the form, and Google Sheets will automatically save the responses back to a new sheet in your original spreadsheet. Then, you can incorporate those responses into your research, right alongside everything else you've pulled into your spreadsheet.

Be sure to jump back to chapter 2 for an [in-depth guide to all of Google Forms' features](#) if you haven't read it already.

**Tip:** Do more with your form—perhaps get notified when new entries are added, or automatically email people who fill out your form—using Zapier's [Google Forms integrations](#).

## Identify and Translate Text

|           |                                                 |                                                                                                                                                                             |                         |   |
|-----------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---|
| <i>fx</i> | =GOOGLETRANSLATE(B1, "th", "")                  | B                                                                                                                                                                           | C                       | D |
| 1         | A vaincre sans péril, on triomphe sans gloire   | B2 นิ่วแมก                                                                                                                                                                  | 书中自有黄金屋。                |   |
| 2         | To win without risk is to triumph without glory | =GOOGLETRANSLATE(B1, "th", "")                                                                                                                                              | The book house of gold. |   |
| 3         |                                                 | GOOGLETRANSLATE(text,<br>[source_language], [target_language])                                                                                                              |                         |   |
| 4         |                                                 | Example<br>GOOGLETRANSLATE("hola", "es", "en")                                                                                                                              |                         |   |
| 5         |                                                 | Summary<br>Translates text from one language into another.                                                                                                                  |                         |   |
| 6         |                                                 | text<br>The text to translate.                                                                                                                                              |                         |   |
| 7         |                                                 | source_language - [optional]<br>The two-letter language code of the source language, e.g.<br>"en" for English or "ko" for Korean, or "auto" to auto-detect<br>the language. |                         |   |
| 8         |                                                 | ► target_language - [optional]<br>The two-letter language code of the target language.                                                                                      |                         |   |
| 9         |                                                 |                                                                                                                                                                             |                         |   |
| 10        |                                                 |                                                                                                                                                                             |                         |   |
| 11        |                                                 |                                                                                                                                                                             |                         |   |
| 12        |                                                 |                                                                                                                                                                             |                         |   |
| 13        |                                                 |                                                                                                                                                                             |                         |   |
| 14        |                                                 |                                                                                                                                                                             |                         |   |
| 15        |                                                 |                                                                                                                                                                             |                         |   |

Come across some text you can't read in your research, or want to reference a quote in another language and include a rough translation? Google Translate is built into Google Sheets, and can identify or translate languages for you on the fly.

Identifying languages is simple. Just enter the text you can't read in a cell, then use the =DETECTLANGUAGE(A1) function, replacing A1 with your text cell. Google Translate will then tell you the two letter code of that language: en for English, th for Thai, fr for french, and so on.

Then, to translate text, just enter the following formula:

```
1 =GOOGLETRANSLATE(A1, "auto", "en")
```

That will translate the text in cell A1 into English, after auto-detecting the language. You can replace auto with the two-letter code for the language if you already know what language the text is in, or swap en for any other language for other translations.

A screenshot of a Google Sheets spreadsheet titled "Date". The table has three columns: A (Date), B (Close Price), and C (Open Price). The data starts at row 8 and ends at row 16. The dates in column A range from "1/8/2016 16:00:00" to "2/26/2016 16:00:00". The close prices in column B range from "96.96" to "96.91". The open prices in column C range from "96.96" to "96.91".

|    | A                  | B      | C |
|----|--------------------|--------|---|
| 8  | Date               |        |   |
| 9  | 1/8/2016 16:00:00  | 96.96  |   |
| 10 | 1/15/2016 16:00:00 | 97.13  |   |
| 11 | 1/22/2016 16:00:00 | 101.42 |   |
| 12 | 1/29/2016 16:00:00 | 97.34  |   |
| 13 | 2/5/2016 16:00:00  | 94.02  |   |
| 14 | 2/12/2016 16:00:00 | 93.99  |   |
| 15 | 2/19/2016 16:00:00 | 96.04  |   |
| 16 | 2/26/2016 16:00:00 | 96.91  |   |

Need to translate cryptic financial terms instead of languages? Google Finance's integration into Sheets is just what you need. Just enter =GOOGLEFINANCE() with your stock ticker, the item you wish to track, start and end date, and daily or weekly for how you want the data summarized, and you'll get a table of stock results automatically. That might be helpful for your next article on the stock market.

## Format Text Automatically

A screenshot of a Google Sheets spreadsheet. Cell A1 contains the formula "=PROPER(trim(A1))". A tooltip is displayed over the formula, providing information about the PROPER function:

- Example:** PROPER("united states")
- Summary:** Capitalizes each word in a specified string.
- text\_to\_capitalize:** The text which will be returned with the first letter of each word in uppercase and all other letters in lowercase.

The formula bar also shows the formula =PROPER(trim(A1)). The right side of the screen shows the color palette and conditional formatting tools.

Now that you've got an outline, notes, and research in your spreadsheet, it's time to get things cleaned up. You've likely used the formatting options in spreadsheets before—if not, they work the same as you'd expect in most other office applications. Select the font, size, and weight you want for text, pick text and background colors, center or left/right align text, and so on. Or, use the *Conditional Formatting* tool we've already looked at to change colors and font style based on what's in each cell in a spreadsheet.

One spreadsheet-specific formatting option to try is the *Borders* option. That lets you choose which—if any—borders to show around cells, as well as what color and thickness the lines should be. Turn off all the borders, and your spreadsheet will look like a plain document.

Then, Google Sheets can help automatically clean up your text to make it look the way it should. Here are some of the best Text functions you should use (and replace A1 with text you want to clean up, as usual):

- `Clean(A1)` to remove non-printable ASCII characters, useful for making imported HTML or XML look better.
- `Left(A1,5)` or `Right(A1,5)` to return the first or last 5 (or any number you want) characters from a string, respectively.
- `Trim(A1)` to remove any leading or trailing spaces.
- `Upper(A1)` to make all of the text uppercase.
- `Lower(A1)` to make all of the text lowercase.
- `Proper(A1)` to capitalize the first letter of each word.
- `Substitute(A1,"text_to_search_for","text_to_replace_with")` to replace something in a string with something else (say, to replace one word or remove all spaces).

You can also combine text functions. For example, in the image above, `=Proper(Trim(A1))` both removes the spaces from the end of the string *and* capitalizes the first letter of each word.

**Tip:** Want to format numbers and turn them into nice tables? Jump back to the [Spreadsheets 101 tutorial](#) in chapter 1 for that and other spreadsheet basics.

## Combine Text from Cells

|                 |                                                                                      |                                                                                                                                                       |   |   |   |   |   |
|-----------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| <code>fx</code> | =CONCATENATE("https://zapier.com/blog/best-project-management-software/#",lower(A9)) |                                                                                                                                                       |   |   |   |   |   |
|                 | A                                                                                    | B                                                                                                                                                     | C | D | E | F | G |
| 5               | Asana                                                                                | <a href="https://zapier.com/blog/best-project-management-software/#asana">https://zapier.com/blog/best-project-management-software/#asana</a>         |   |   |   |   |   |
| 6               | Dapulse                                                                              | <a href="https://zapier.com/blog/best-project-management-software/#dapulse">https://zapier.com/blog/best-project-management-software/#dapulse</a>     |   |   |   |   |   |
| 7               | Insightly                                                                            | <a href="https://zapier.com/blog/best-project-management-software/#insightly">https://zapier.com/blog/best-project-management-software/#insightly</a> |   |   |   |   |   |
| 8               | Toodledo                                                                             | <a href="https://zapier.com/blog/best-project-management-software/#toodledo">https://zapier.com/blog/best-project-management-software/#toodledo</a>   |   |   |   |   |   |
| 9               | Allthings                                                                            | <code>=CONCATENATE("https://zapier.com/blog/best-project-management-software/#",lower(A9))</code>                                                     |   |   |   |   |   |
| 10              |                                                                                      |                                                                                                                                                       |   |   |   |   |   |

There's another super handy Text function for combining text from multiple cells in a spreadsheet: Concatenate. All it does is combine the text you enter or select from cells together into one cell. If you want to add spaces, you'll need to add them manually: concatenate just combines the exact text you give it.

Here's how it's handy: Say, for instance, you've written an article and included [anchor tags](#) so readers can jump to a specific section of the article from your index—perhaps using a lower case version of the app's name, without spaces, for the anchor tags. You want to make an index for that article, which means you need a list of links with each of those anchor tags *and* your article's URL.

Instead of writing each anchor in lowercase by hand, just paste your list of Anchors into a spreadsheet. Then, add the following formula, substituting your link for URL and your anchor's cell in the spreadsheet for A1:

```
1 =concatenate("URL",A1)
```

Or, if you need to make the anchor text lowercase and remove spaces, this function would do the trick:

```
1 =concatenate("URL",lower(substitute(A1," ","")))
```

## Create Linked Text

|           |                     |                                                     |                                                                                                                             |   |   |  |  |
|-----------|---------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---|---|--|--|
| <i>fx</i> | =hyperlink(B10,A10) |                                                     |                                                                                                                             |   |   |  |  |
|           | A B C D E F G       |                                                     |                                                                                                                             |   |   |  |  |
| 5         | Asana               | <a href="https://zapier.com">https://zapier.com</a> | Asana                                                                                                                       |   |   |  |  |
| 6         | Dapulse             | <a href="https://zapier.com">https://zapier.com</a> | Dapulse                                                                                                                     |   |   |  |  |
| 7         | Insightly           | <a href="https://zapier.com">https://zapier.com</a> | Insightly                                                                                                                   |   |   |  |  |
| 8         | Toodledo            | <a href="https://zapier.com">https://zapier.com</a> | Toodledo                                                                                                                    |   |   |  |  |
| 9         | Allthings           | <a href="https://zapier.com">https://zapier.com</a> | Allthings                                                                                                                   |   |   |  |  |
| 10        | Microsoft Word      | <a href="https://zapier.com">https://zapier.com</a> | =hyperlink(B10,A10)                                                                                                         |   |   |  |  |
| 11        |                     |                                                     | HYPERLINK(url, [link_label])                                                                                                | ^ | X |  |  |
| 12        |                     |                                                     | Example                                                                                                                     |   |   |  |  |
| 13        |                     |                                                     | HYPERLINK("http://www.google.com/", "Google")                                                                               |   |   |  |  |
| 14        |                     |                                                     | Summary                                                                                                                     |   |   |  |  |
| 15        |                     |                                                     | Creates a hyperlink inside a cell.                                                                                          |   |   |  |  |
| 16        |                     |                                                     | url                                                                                                                         |   |   |  |  |
| 17        |                     |                                                     | The full URL of the link location enclosed in quotation marks, or a reference to a cell containing such a URL.              |   |   |  |  |
| 18        |                     |                                                     | link_label - [optional]                                                                                                     |   |   |  |  |
| 19        |                     |                                                     | The text to display in the cell as the link, enclosed in quotation marks, or a reference to a cell containing such a label. |   |   |  |  |
| 20        |                     |                                                     |                                                                                                                             |   |   |  |  |
| 21        |                     |                                                     | <a href="#">Learn more about HYPERLINK</a>                                                                                  |   |   |  |  |
| 22        |                     |                                                     |                                                                                                                             |   |   |  |  |

Once you've got the links, you might want to link the original anchor names with their new anchor links. The `Hyperlink` function can do that for you. Just enter the following, with your link and text instead of `B1` and `A1`, respectively:

```
1 =hyperlink(B1,A1)
```

That will make a new column with the original text linked to your new links—and it'd work equally well with any list of plain text and links.

If you write in [Markdown](#), you could instead use `concatenate` to add brackets and parenthesis with this function, where again `A1` is your plain text and `B1` is your link:

```
1 =concatenate("[",A1,"](" ,B1,")")
```

**Note:** `Concatenate` could be used to add markdown header and list formats to your outline. See Zapier's [Markdown guide](#) for a refresher on formatting, then tweak the `concatenate` function with the characters you need.

Want to *only* show the linked text, instead of three columns with plain text, plain link, and linked text? Just select the text and link columns, right-click on the top header, and select *Hide Columns*. The text will still be in your spreadsheet, and will still work in functions, but it'll be out of sight to keep your spreadsheet clean.

A screenshot of a Microsoft Excel spreadsheet. The spreadsheet has two visible columns: A and E. Column A contains a list of project management tools: Asana, Dapulse, Insightly, Toodledo, Allthings, and Microsoft Word. Column E contains their corresponding URLs. A context menu is open over the first row of column A, specifically over the cell containing 'Asana'. The menu options are: Cut, Copy, Paste, Paste special, Insert 2 left, Insert 2 right, Delete columns A - B, Clear columns A - B, and Hide columns A - B. The 'Hide columns A - B' option is highlighted with a gray background.

|    | A              | B                                                                                                                                                       | C | D | E                                                                               |
|----|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------|
| 5  | Asana          | <a href="https://zapier.com/blog/best-project-management-apps/#asana">https://zapier.com/blog/best-project-management-apps/#asana</a>                   |   |   | (https://zapier.com/blog/best-project-management-apps/#asana)                   |
| 6  | Dapulse        | <a href="https://zapier.com/blog/best-project-management-apps/#dapulse">https://zapier.com/blog/best-project-management-apps/#dapulse</a>               |   |   | [https://zapier.com/blog/best-project-management-apps/#dapulse]                 |
| 7  | Insightly      | <a href="https://zapier.com/blog/best-project-management-apps/#insightly">https://zapier.com/blog/best-project-management-apps/#insightly</a>           |   |   | ly](https://zapier.com/blog/best-project-management-apps/#insightly)            |
| 8  | Toodledo       | <a href="https://zapier.com/blog/best-project-management-apps/#toodledo">https://zapier.com/blog/best-project-management-apps/#toodledo</a>             |   |   | do](https://zapier.com/blog/best-project-management-apps/#toodledo)             |
| 9  | Allthings      | <a href="https://zapier.com/blog/best-project-management-apps/#allthings">https://zapier.com/blog/best-project-management-apps/#allthings</a>           |   |   | gs](https://zapier.com/blog/best-project-management-apps/#allthings)            |
| 10 | Microsoft Word | <a href="https://zapier.com/blog/best-project-management-apps/#microsoft-word">https://zapier.com/blog/best-project-management-apps/#microsoft-word</a> |   |   | oft Word](https://zapier.com/blog/best-project-management-apps/#microsoft-word) |
| 11 |                |                                                                                                                                                         |   |   |                                                                                 |
| 12 |                |                                                                                                                                                         |   |   |                                                                                 |
| 13 |                |                                                                                                                                                         |   |   |                                                                                 |
| 14 |                |                                                                                                                                                         |   |   |                                                                                 |
| 15 |                |                                                                                                                                                         |   |   |                                                                                 |
| 16 |                |                                                                                                                                                         |   |   |                                                                                 |

Or, want to save only the new links, without the functions and original text? Just copy the original hyperlinks you made, paste them in a new column, then click the paste icon that shows up and select *Paste values only*.

## Display Images From a URL

A screenshot of a Google Sheets document. The document contains a table with information about various project management apps. The table has columns for Name, Designed to:, Free for:, and Pricing from:. The 'Name' column lists apps like Asana, Dapulse, Insightly, Toodledo, Allthings, Wrike, Pagico, and Microsoft Project. The 'Designed to:' column provides a brief description of each app's features. The 'Free for:' and 'Pricing from:' columns show pricing details. A formula in cell A10 is =HYPERLINK(AD10,image(AB10)). A callout box highlights the 'image' function, which displays a thumbnail image for each app listed in the 'Name' column. The title of the sheet is 'Zapier's Project Management App Cheat Sheet'.

|    | A            | B                                                                               | C                                                                                                                                                                             | D                   | E                    | F             |
|----|--------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|---------------|
| 1  |              |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 2  |              |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 3  |              |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 4  |              |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 5  |              |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 6  |              |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 7  |              |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 8  |              |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 9  | Task Lists   | Name                                                                            | Designed to:                                                                                                                                                                  |                     | Free for:            | Pricing from: |
| 10 |              | <a href="https://zapier.com/ftware/#asana">https://zapier.com/ftware/#asana</a> | Manage team to-dos with updates and progress graphs to keep everything on track.<br>Visualize each task's progress with labels that show the results of each task's workflow. | 15 users            | \$5/mo./user         |               |
| 11 |              |                                                                                 | Focus on contacts and projects together in one app.                                                                                                                           | 2 users             | \$25/mo. for 5 users |               |
| 12 |              |                                                                                 | Outline everything your team needs to do in task lists with custom fields.                                                                                                    | ∞ private tasks     | \$12/mo./user        |               |
| 13 |              |                                                                                 | Write down tasks in simple lists, add extra data with custom fields, then turn those fields into kanban lists.                                                                | ∞ users, 5 projects | \$14.99/yr./user     |               |
| 14 |              |                                                                                 |                                                                                                                                                                               |                     | \$9.95/mo./user      |               |
| 15 | Gantt Charts |                                                                                 |                                                                                                                                                                               |                     |                      |               |
| 16 |              |                                                                                 | Manage team and personal tasks together in a list, spreadsheet, or Gantt chart view.                                                                                          | 5 users             | \$49/mo. for 5 users |               |
| 17 |              |                                                                                 | Work on personal and team tasks in a professional project management tool.                                                                                                    |                     | \$50/user            |               |
| 18 |              |                                                                                 | Outline and plan projects with familiar Microsoft Office tools.                                                                                                               |                     | \$33/mo./user        |               |

Spreadsheets aren't just for numbers, and they're not just for text either. They're also great places to organize images.

Most spreadsheet apps let you drag-and-drop images into your spreadsheet, perhaps to add a company logo

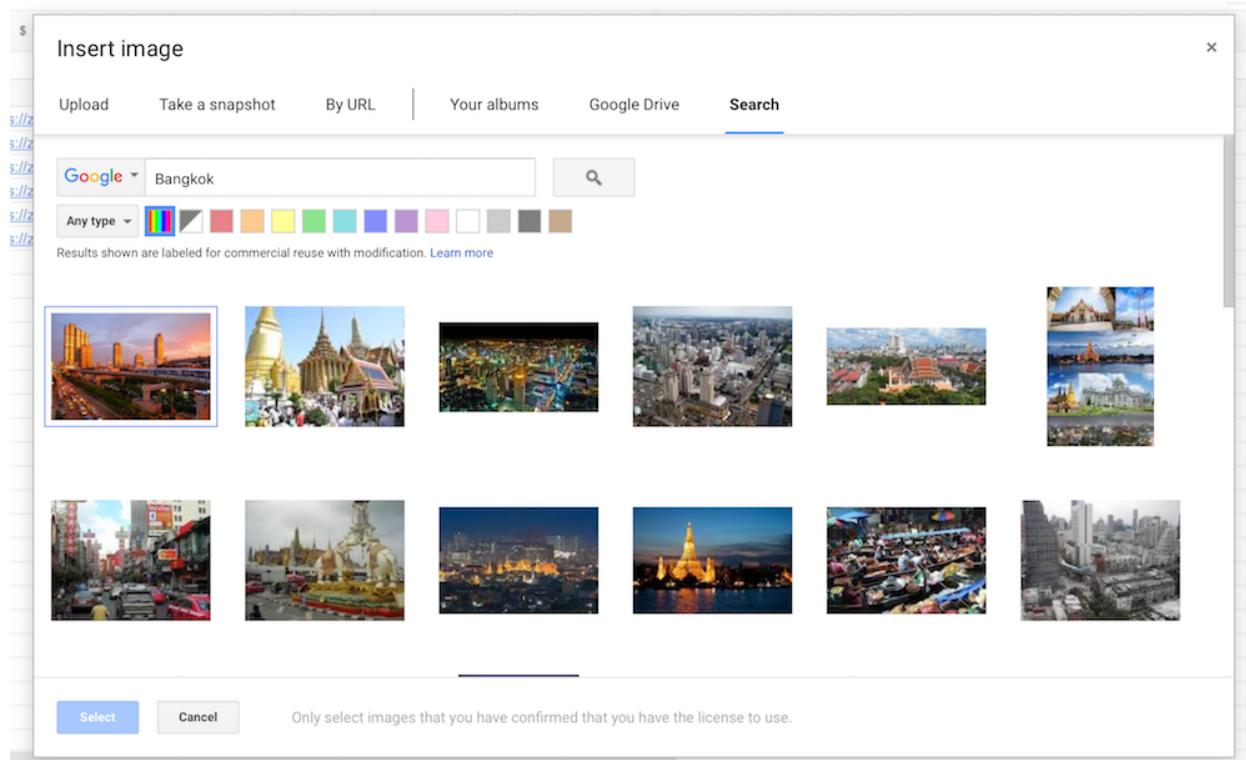
to your financial statements. But Google Sheets also lets you import images directly from a link with its `image` function.

We recently used this in the Zapier team to build a [project management apps comparison tool](#). I added each icon to Zapier's site, and listed them in the spreadsheet—right after the anchor links I'd made with the trick in the previous step. Then, I added both a [hyperlink](#) and `image` function, as below, to both import the image *and* have it linked to the correct section of our article:

```
1 =hyperlink(A1,image(B1))
```

The `image` function also lets you set a mode, height, and width. The mode could let the image automatically fit the height or width of the cell, or you could just set the size manually.

There's only one problem with these online images: they *only* work in Google Sheets. They're perfect if you want to view the spreadsheet online or export it as a PDF, but if you save it in Excel format, the images won't be saved with it.



Alternately, if you want a full-sized image, just select *Insert -> Image* then upload a photo or search for one in Google Images. You can then resize and position the image anywhere on your spreadsheet, as it's not tied to any specific cell. The `image` function is handy for pulling in a number of images at once and showing them in a table; the *Insert Image* tool is better for adding full-sized images for a nicer looking report.

**Tip:** Want more advanced functions? Dig into the hundreds of other functions in Google Sheets with the [Google spreadsheets function list](#), which includes a filter to search for the exact function you need.

## Create HTML Tables For Your Blog Posts

|    |                                                                                                                                                                                                                                                                                             |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| J3 | =CONCATENATE("<tr><td class=""key""><a href=""#asana">Asana </a></td><td class=""D3"">B3 </a></td><td class=""D3""><img src=""C3"" alt=""B3"" height=""40"" width=""40""/></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>")                                                                  |
| 3  | =CONCATENATE("<tr><td class=""key""><a href=""#insightly">Insightly </a></td><td class=""D3"">B3 </a></td><td class=""D3""><img src=""C3"" alt=""B3"" height=""40"" width=""40""/></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>")                                                          |
| 4  | <tr><td class="key"><a href="#insightly">Insightly</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr> |
| 5  | <tr><td class="key"><a href="#toodledo">Toodledo</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>   |
| 6  | <tr><td class="key"><a href="#allthings">Allthings</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>  |
| 7  | <tr><td class="key"><a href="#wrike">Wrike</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>          |
| 8  | <tr><td class="key"><a href="#pagico">Pagico</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>        |
| 9  | <tr><td class="key"><a href="#microsoft">Microsoft Project</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>    |
| 10 | <tr><td class="key"><a href="#runrun.it">Runrun.it</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>            |
| 11 | <tr><td class="key"><a href="#sandglaz">Sandglaz</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>              |
| 12 | <tr><td class="key"><a href="#aha">Aha!</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>                       |
| 13 | <tr><td class="key"><a href="#star">Star</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>                      |
| 14 | <tr><td class="key"><a href="#runrun.it">Runrun.it</a></td><td class="D3">B3 </a></td><td class="D3"></td><td>E3 </td><td>F3 </td><td>G3 </td></tr>            |

It's time to bring everything you've learned together. Let's turn your outline or list of ideas into an HTML table that you can add to your finished blog post—complete with anchor links to the correct sections of your article.

Just set up your spreadsheet with each thing you want to include in the table (like text, links, and images), then kick off a concatenate function. For example, in our [Project Management app roundup](#), we include a table with each app's name, icon, description, and price. Here's the table we started with—column D was made using the [Format tools](#) mentioned above:

|    | A            | B                 | C                                           | D                                                                                            | E                    | F                    | G             |
|----|--------------|-------------------|---------------------------------------------|----------------------------------------------------------------------------------------------|----------------------|----------------------|---------------|
| 1  | Category     | Name              | Icon                                        | Article Link                                                                                 | Quick Description    | Free for:            | Pricing from: |
| 2  | Task Lists   |                   |                                             |                                                                                              |                      |                      |               |
| 3  |              | Asana             | <a href="https://zapier.cac">#asana</a>     | Manage team to-dos with updates and progress graphs to keep everythi                         | 15 users             | \$5/mo./user         |               |
| 4  |              | Dapulse           | <a href="https://zapier.cac">#dapulse</a>   | Visualize each task's progress with labels that show the results of each task's workflow.    | \$25/mo. for 5 users |                      |               |
| 5  |              | Insightly         | <a href="https://zapier.cac">#insightly</a> | Focus on contacts and projects together in one app.                                          | 2 users              | \$12/mo./user        |               |
| 6  |              | Toodledo          | <a href="https://zapier.cac">#toodledo</a>  | Outline everything your team needs to do in task lists with custom fields. ~ private tasks   | \$14.99/yr./user     |                      |               |
| 7  |              | Allthings         | <a href="https://zapier.cac">#allthings</a> | Write down tasks in simple lists, add extra data with custom fields, then ~ users, 5 projec  | \$9.95/mo./user      |                      |               |
| 8  | Gantt Charts |                   |                                             |                                                                                              |                      |                      |               |
| 9  |              | Wrike             | <a href="https://zapier.cac">#wrike</a>     | Manage team and personal tasks together in a list, spreadsheet, or Gant                      | 5 users              | \$49/mo. for 5 users |               |
| 10 |              | Pagico            | <a href="https://zapier.cac">#pagico</a>    | Work on personal and team tasks in a professional project management tool.                   | \$50/user            |                      |               |
| 11 |              | Microsoft Project | <a href="https://zapier.cac">#microsoft</a> | Outline and plan projects with familiar Microsoft Office tools.                              | \$33/mo./user        |                      |               |
| 12 |              | Sandglaz          | <a href="https://zapier.cac">#sandglaz</a>  | Plan scrum sprints in kanban-style lists for a simple way to prioritize tasks and plan the w | \$5/mo./user         |                      |               |
| 13 |              | Aha!              | <a href="https://zapier.cac">#aha</a>       | Turn ideas into broad goals, detailed schedules, and individual releases. 5 users with Star  | \$59/mo./user        |                      |               |
| 14 |              | Runrun.it         | <a href="https://zapier.cac">#runrun</a>    | Know when your projects will actually ship with automatically calculated delivery dates.     | \$10/mo./user        |                      |               |

To make that into an HTML table, you need the code to start out the table, then `<tr>` sections for each row of the table. Here's an example of the code we need for our article table:

```

1 <div class="table-container widen">
2 <table class="simple">
3 <tr>
4 <th>App</th>
5 <th style="color:#eee;">Icon: </th>
6 <th>Best to:</th>
7 <th>Free for:</th>
8 <th>Paid plans from:</th>
9 </tr>
10 <tr>

```

```

11 <td class="key">Asana</td>
12 <td></td>
15 <td>Manage team to-dos with updates and progress graphs to keep
16 everything on track.</td>
17 <td>15 users</td>
18 <td>$5/mo./user</td>
19 </tr>
20 </table>
21 </div>
```

The first nine lines and last two can be entered manually, but adding the other lines for each app is time consuming at best. Instead, you can use an (admittedly long) concatenate function to fill in the blanks and add the HTML automatically:

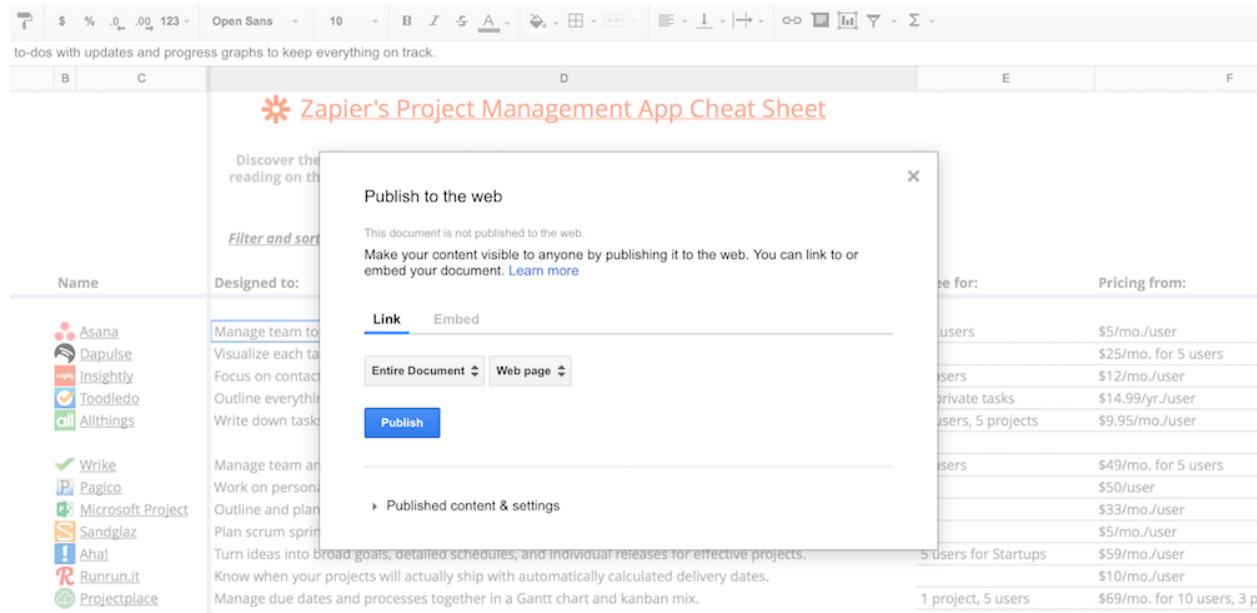
```

1 =CONCATENATE("<tr><td class=""", "key", """", "><a
2 href=""", D1, """", ">", B1, "</td><td><img
3 src=""", C1, """", " alt=""", B1, """", " height=""", "40", """", "
4 width=""", "40", """", "></td><td>", E1, "</td><td>", F1, "</td><td>", G1, "<
5 /td></tr>")
```

Paste that into each row with an entry for your article, then copy all of the sections and add the correct beginning and ending HTML sections. You'll have a fully complete HTML table in seconds.

You could alternately just export the whole spreadsheet as an HTML table, using the *File -> Download as -> Web page* tool in Google Sheets or with a tool like [Tableizer](#). But using a spreadsheet function lets you customize the table and make it look *exactly* like you want—and once you've made the correct function for your table style, it'll be just as quick.

## Publish Your Spreadsheets



Or, perhaps you'd rather publish your spreadsheet itself instead of turning it into a table. There's a number of ways you can do that in Google Sheets:

- Export:** Click *File* → *Download as* to download your spreadsheet in Excel, CSV, web page, or PDF formats. The PDF option is a great way to share your writing, outline, and research with others, while the spreadsheet options are best for backing up data to use in other spreadsheet tools.
- Print:** For a bit more formatting options—though no way to export links—click the printer icon. You can then print the sheet on paper, or save it as a formatted PDF to Google Drive.
- Publish:** Click *File* → *Publish to the Web* to get a public link to your spreadsheet to share a plain HTML page of your spreadsheet with others. Or, click the *Embed* tab, copy the code it includes and paste it into your blog to embed a copy of the spreadsheet in your post instead of making an HTML table.

Each of those options only let you share a plain, static copy of your spreadsheet. If you want readers to be able to sort and filter through your data, though, you'll want to actually share the real spreadsheet.

For that, click the *Share* icon in the top right corner, and select *Anyone with the link can view* from the sharing options. Then, share the link, and anyone can view the spreadsheet, and search through the data without changing the original layout.

For a better way to help people find the items they need, add a *Filtered View* from *Data* → *Filter View*. There, you can set which part of the spreadsheet should be interactive. Readers can then click on a column, filter it by name or text, and see only the results they want. You could even make filter views with preset filters that *only* show specific data, as an easy way to sort through massive datasets.

Spreadsheets still aren't exactly word processors, and you'll still want a writing app for most of your writing work. But for research, outlining, tables, and much more, a spreadsheet is a handy sidekick that can help you do more, in far less time.

With tools like these—along with a Google Form and the tools you learned in chapters 1 and 3 to format spreadsheets and pull in data automatically—you can build a wide range of apps on your own, without any coding. So let's do just that in chapter 5.

We'll take everything we've learned so far, pull in data with a Google Sheets add-on, and [build an automated business analytics dashboard](#) with just a spreadsheet.

---

Enjoy? Read and share this chapter online: [zpr.io/uB9M](https://zpr.io/uB9M)

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*Written by Zapier content marketer [Matthew Guay](#).*

# Chapter 5: How to Create a Custom Business Analytics Dashboard with Google Sheets



Data means little on its own. Open a spreadsheet packed with numbers, and it's difficult to tell what's improving and where you should focus your efforts.

That's one of the things that makes reporting on numbers—your site traffic, store sales, or sign-up growth—so frustrating. You have to find the data, figure out how to make sense of it, and *then* write about what the data shows.

Wouldn't it be better if you could make a dashboard that automatically turns your numbers into clear, actionable insights?

With a spreadsheet and some data integrations, you can build the custom dashboard of your dreams. Let's pull your [spreadsheet skills](#) together with the Google Analytics add-on for Google Sheets, and learn how to turn your spreadsheet into the data app you've always wanted to build.

---

## The Tools to Build a Customizable Dashboard

There are two things you need to make a reporting dashboard: a spreadsheet app, and a source of data to use in the report.

There's a wide range of [spreadsheet apps](#), but Google Sheets is the best tool for this job as it's online, and can pull in data from web apps like Google Analytics automatically.

**Tip:** If you're new to spreadsheets, don't worry. Just jump back to the [Google Sheets 101](#) tutorial in chapter 1 of this book for a quick walk through of spreadsheet basics.

Then, you need the metrics to track in your dashboard. We'll use Google Analytics data to show our blog traffic statistics in a dashboard. But you could import any data you want into your spreadsheet and use these steps to turn it into a dashboard. Just copy in data from your apps, use built-in functions like `=finance()` to import financial data, or use Zapier integrations to log subscribers, sales, shares and more to your dashboard spreadsheet automatically.

### Zapier Integrations:

- [Save new Eventbrite attendees to a Google Sheets spreadsheet](#)
- [Save new MailChimp subscribers to a Google Sheets spreadsheet](#)
- [Add new rows on Google Sheets for new PayPal sales](#)
- [Save Twitter mentions to a Google Sheets spreadsheet](#)

**Tip:** Explore more [Zapier Google Sheets Integrations](#) to add data from your favorite apps—social networks like Twitter, email marketing tools like MailChim, and more—to your dashboard as well.

## Decide What to Include in the Dashboard

Now it's time to start building your dashboard. The first step is to determine which metrics matter most.

Anything *could* be tracked. You can easily set up a report that tracks your new Twitter followers or the number of incoming customer support tickets. But these numbers are meaningless if you don't have a reason to track them.

So to get started, consider how your performance is measured. For a blog to be considered a success, there are a handful of core metrics that could be tracked:

- **Users:** How many people come to your blog?
- **Sessions:** How many times do they visit your blog?
- **Bounce Rate:** Do they leave right after visiting your blog, or do they stick around?
- **Organic Traffic:** How much of your traffic comes directly from organic search results?
- **Month over Month Growth:** How is your site traffic growing month over month?

These are the basic metrics you will want to keep an eye on—and the ones we'll include in our dashboard in this tutorial.

Your team might have different metrics that are more important for your company: sales, signup rates, conversion rates from ad campaigns, and more. If so, decide which of those are most important, then add sections to the dashboard to track them as well.

## Get Data For Your Dashboard

Now, we need data for each of those metrics, so we can turn it into a report. And, to make things automatic, we need to data to be automatically added and updated in our spreadsheet.

That's easy to do for website analytics, with the [Google Analytics Spreadsheet Add-On](#). Once connected to your account, it will automatically import live data about your website into your spreadsheet.

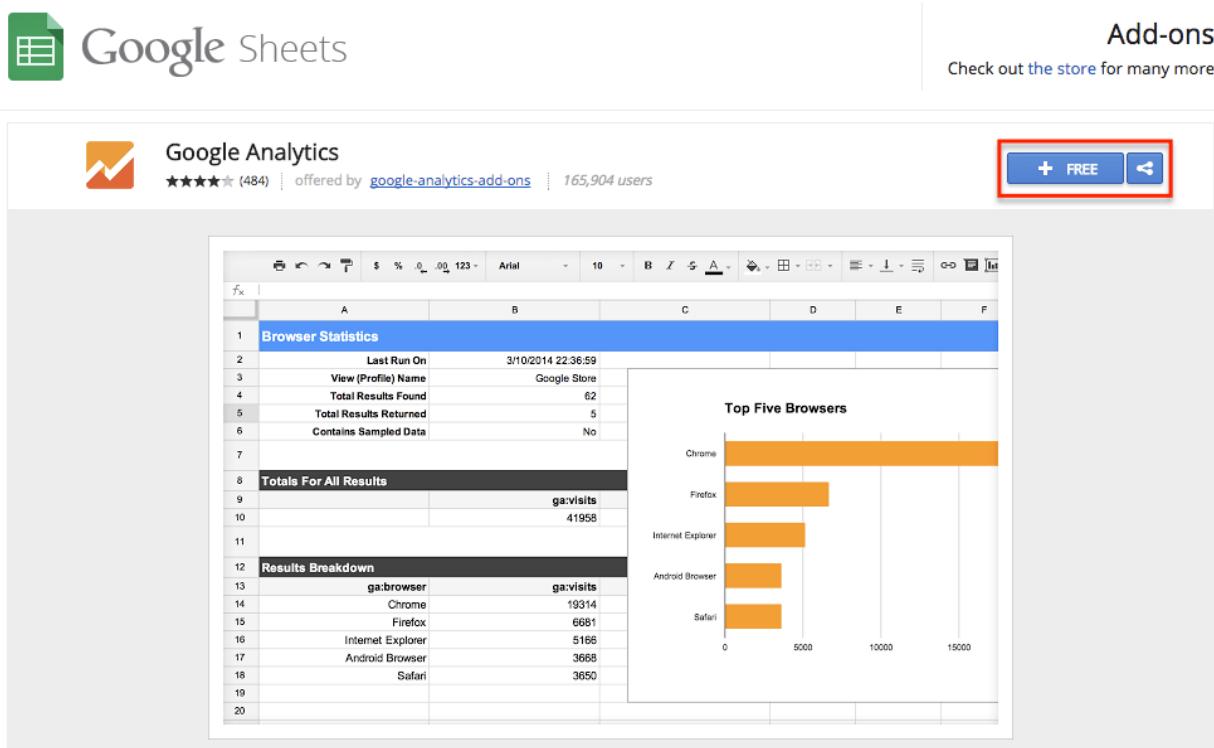
If you need to import other data, here's some other options:

- The Zapier [Google Sheets integrations](#) above could automatically add data about subscribers, sales, and more to your spreadsheet
- The Google Sheets `import` functions can import RSS feeds, website and XML data, and info from other spreadsheets—something you can learn more about in the [Spreadsheet CRM tutorial](#) from chapter 3 of this book.
- Pre-built Google Sheets add-ons can pull in data from a wide range of sources, including public databases, marketing and ads tools, and more. Skip to chapter 6 to find details on some of the [best Google Sheets add-ons](#), or explore the [Google Add-ons Store](#) to find more
- Use Google Apps Script to create custom add-ons for Google Sheets and import data automatically from other sources. Jump ahead to the [guide to Google Apps Scripts](#) in Chapter 7 to get started building your own add-ons, if you want.

## Build a Reporting Dashboard in Google Sheets

It's time for the fun part: actually building our dashboard!

Let's get started. The first thing to do is [install the Google Analytics plugin for Google Sheets](#) if you haven't already. We'll need this to create our report.



The screenshot shows the Google Sheets Add-ons store page for the "Google Analytics" add-on. The add-on has a rating of 4.8 stars from 484 reviews and 165,904 users. It is offered by "google-analytics-add-ons". A red box highlights the "FREE" button and the "Get it" button.

**Google Analytics**  
 ★★★★☆ (484) | offered by [google-analytics-add-ons](#) | 165,904 users  
 + FREE Get it

**Browser Statistics**

|                        |                    |
|------------------------|--------------------|
| Last Run On            | 3/10/2014 22:36:59 |
| View (Profile) Name    | Google Store       |
| Total Results Found    | 62                 |
| Total Results Returned | 5                  |
| Contains Sampled Data  | No                 |

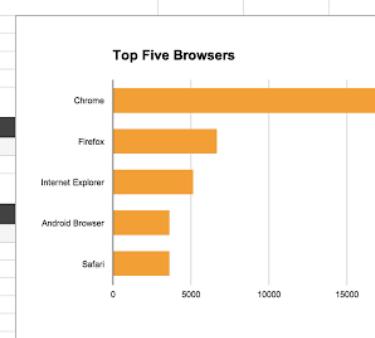
**Totals For All Results**

|           |       |
|-----------|-------|
| ga:visits | 41958 |
|-----------|-------|

**Results Breakdown**

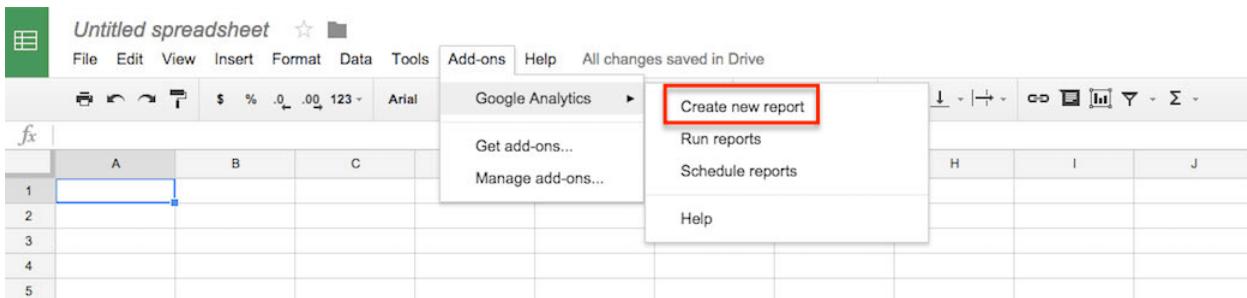
| ga:browser        | ga:visits |
|-------------------|-----------|
| Chrome            | 19314     |
| Firefox           | 6681      |
| Internet Explorer | 5166      |
| Android Browser   | 3668      |
| Safari            | 3650      |

**Top Five Browsers**



| Browser           | Visitors |
|-------------------|----------|
| Chrome            | ~19,314  |
| Firefox           | ~6,681   |
| Internet Explorer | ~5,166   |
| Android Browser   | ~3,668   |
| Safari            | ~3,650   |

With that installed, open a new Google Sheet, click *Add-ons* in the menu, and select the Google Analytics plugin. There are a few options for reports, and for this dashboard we'll start with *Create new report*.



The screenshot shows a Google Sheet with the "Add-ons" menu open. The "Google Analytics" option is selected, and the "Create new report" option is highlighted with a red box.

Untitled spreadsheet

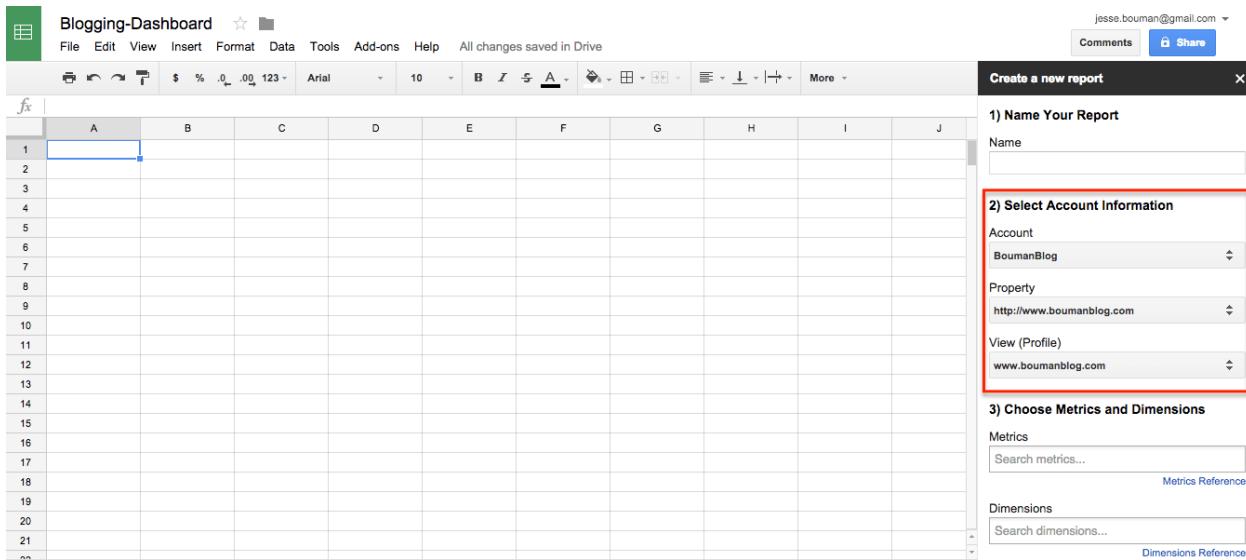
Add-ons Help All changes saved in Drive

File Edit View Insert Format Data Tools

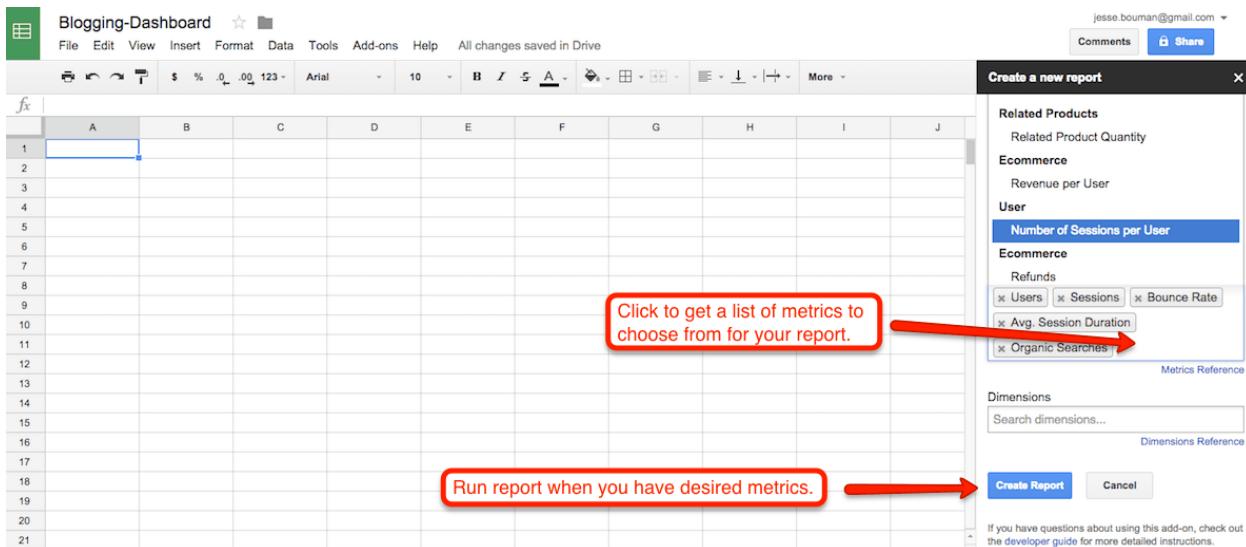
Google Analytics ▾

- Create new report
- Run reports
- Schedule reports
- Help

That will open a new Report pane on the right side of your spreadsheet. Here we'll name our report and select which Google Analytics account, profile, and property to run the report from. I'm going to use my personal blog for this report—you should select the site which you need to create a traffic report about.



Now, choose which metrics to track with this report. In the input box below your account info, click the box to see a list of metrics, then choose the ones you've selected earlier and click *Create Report*.



The extension will then add a new “Report Configuration” sheet to your spreadsheet, and it’ll automatically populate with your site analytics data. This is where we’ll get the data for your dashboard.

The screenshot shows a Google Sheets spreadsheet titled "Blogging-Dashboard". The spreadsheet has a single sheet named "Sheet1". The data is organized into two main sections: "Configuration Options" and "Your Google Analytics Reports".

|    | A                            | B                                                                                       | C | D | E | F | G |
|----|------------------------------|-----------------------------------------------------------------------------------------|---|---|---|---|---|
| 1  | <b>Configuration Options</b> | <b>Your Google Analytics Reports</b>                                                    |   |   |   |   |   |
| 2  | Report Name                  |                                                                                         |   |   |   |   |   |
| 3  | Type                         | core                                                                                    |   |   |   |   |   |
| 4  | View (Profile) ID / ids      | ga:11758069                                                                             |   |   |   |   |   |
| 5  | Start Date                   |                                                                                         |   |   |   |   |   |
| 6  | End Date                     |                                                                                         |   |   |   |   |   |
| 7  | Last N Days                  | 7                                                                                       |   |   |   |   |   |
| 8  | Metrics                      | ga:users<br>ga:sessions<br>ga:bounceRate<br>ga:avgSessionDuration<br>ga:organicSearches |   |   |   |   |   |
| 9  | Dimensions                   |                                                                                         |   |   |   |   |   |
| 10 | Sort                         |                                                                                         |   |   |   |   |   |
| 11 | Filters                      |                                                                                         |   |   |   |   |   |
| 12 | Segment                      |                                                                                         |   |   |   |   |   |
| 13 | Sampling Level               |                                                                                         |   |   |   |   |   |
| 14 | Start Index                  |                                                                                         |   |   |   |   |   |
| 15 | Max Results                  |                                                                                         |   |   |   |   |   |
| 16 | Spreadsheet URL              |                                                                                         |   |   |   |   |   |

At the bottom left of the spreadsheet, there is a tab labeled "Report Configuration" which is highlighted with a red box.

By default, the spreadsheet will show data from the past seven days—but you can change that by changing the number in column B7 beside *Last N Days*, or removing it and adding start and end dates. I typically find that data from the past 30 days—and comparing that to the two previous 30 day periods—gives the best feel for month-over-month growth.

**Note:** Don't forget to delete the cell for the last 7-days. Otherwise, no matter the dates you add in, your data will be off.

To add the days in a way we can easily edit them, let's add a new sheet to our spreadsheet for dates. This will help us get dynamic information for our report—using the past two months in this tutorial, but you could enter any date you want.

First, add a sheet, then add the Start and End date for this month and the previous month, as in the screenshot below. You can then update the dates in the future when you want for new reports, or use Google Sheets' today or date functions to automatically grab the current date or month for the report if you'd like.

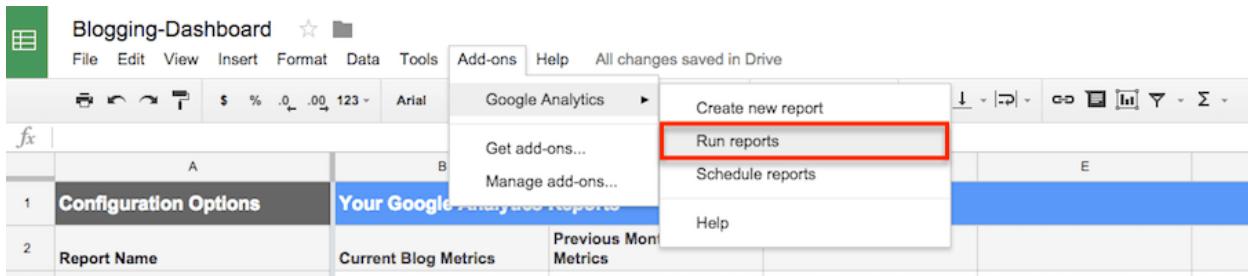
|     | A                                                                   | B         | C | D | E | F | G | H | I | J | K | L | M |
|-----|---------------------------------------------------------------------|-----------|---|---|---|---|---|---|---|---|---|---|---|
| 1   | This Month                                                          |           |   |   |   |   |   |   |   |   |   |   |   |
| 2   | Start                                                               | End       |   |   |   |   |   |   |   |   |   |   |   |
| 3   | 2/1/2016                                                            | 2/29/2016 |   |   |   |   |   |   |   |   |   |   |   |
| 4   | Last Month                                                          |           |   |   |   |   |   |   |   |   |   |   |   |
| 5   | Start                                                               | End       |   |   |   |   |   |   |   |   |   |   |   |
| 6   | 1/1/2016                                                            | 1/31/2016 |   |   |   |   |   |   |   |   |   |   |   |
| 7   |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 8   |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 9   |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 10  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 11  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 12  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 13  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 14  | Select your date and it will be added to your Report Configuration. |           |   |   |   |   |   |   |   |   |   |   |   |
| 15  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 16  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 17  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 18  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 19  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 20  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| 21  |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |
| ... |                                                                     |           |   |   |   |   |   |   |   |   |   |   |   |

Now, go back to your Report Configuration Sheet and select your Start Date cell. Enter an = sign, then go back to the Dates Sheet you just created and select the first date for this current month. Press the *Enter* key, and it will automatically populate into your Report Configuration. Now repeat this step for the end date.

After you've set the beginning and end dates for your current month, copy and paste the report so we have one for the previous month's traffic. You can do this as many times as you'd like, depending on how far back you want to track your traffic for this report. For this tutorial, let's go back three months—so we'll copy the data and add it into two more columns. Remember to add the correct dates to each one, and give them a unique name in Row 2.

|    | A                                                                                 | B                                                                                       | C     | D                                                                                       | E | F | G |  |  |
|----|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------|---|---|---|--|--|
| 1  | Configuration Options                                                             | Your Google Analytics Reports                                                           |       |                                                                                         |   |   |   |  |  |
| 2  | Report Name                                                                       | Current Blog Metrics                                                                    |       | Previous Month Blog Metrics                                                             |   |   |   |  |  |
| 3  | Type                                                                              | core                                                                                    |       | core                                                                                    |   |   |   |  |  |
| 4  | View (Profile) ID / ids                                                           | ga:11758069                                                                             |       | ga:11758069                                                                             |   |   |   |  |  |
| 5  | Start Date                                                                        | 2/1/2016                                                                                |       | 1/1/2016                                                                                |   |   |   |  |  |
| 6  | End Date                                                                          | 2/29/2016                                                                               |       | 2/29/2016                                                                               |   |   |   |  |  |
| 7  | Last N Days                                                                       | 7                                                                                       |       | 7                                                                                       |   |   |   |  |  |
| 8  | Metrics                                                                           | ga:users<br>ga:sessions<br>ga:bounceRate<br>ga:avgSessionDuration<br>ga:organicSearches |       | ga:users<br>ga:sessions<br>ga:bounceRate<br>ga:avgSessionDuration<br>ga:organicSearches |   |   |   |  |  |
| 9  | Dimensions                                                                        |                                                                                         |       |                                                                                         |   |   |   |  |  |
| 10 | Sort                                                                              |                                                                                         |       |                                                                                         |   |   |   |  |  |
| 11 | Filters                                                                           |                                                                                         |       |                                                                                         |   |   |   |  |  |
| 12 | Segment                                                                           |                                                                                         |       |                                                                                         |   |   |   |  |  |
| 13 | Sampling Level                                                                    |                                                                                         |       |                                                                                         |   |   |   |  |  |
| 14 | Start Index                                                                       |                                                                                         |       |                                                                                         |   |   |   |  |  |
| 15 | Max Results                                                                       |                                                                                         |       |                                                                                         |   |   |   |  |  |
|    | + <span style="border: 1px solid #ccc; padding: 2px;">Report Configuration</span> | Report Configuration                                                                    | Dates | Sheet1                                                                                  |   |   |   |  |  |

Now that you have the dates for your three reports, it's time to run the report. In the top menu in Google Sheets, select *Add-ons* -> *Google Analytics* -> *Run Report*.



The Google Analytics extension will automatically add three new sheets. Each of them is a report based on the metrics and timeframe that you chose—one for each month, with the title you added to their respective rows in the configuration sheet.

**Current Month Blog Metrics**

1 Current Month Blog Metrics

2 Last Run On 2/24/2016 21:00:57

3 View (Profile) Name www.boumanblog.com

4 Total Results Found 1

5 Total Results Returned 1

6 Contains Sampled Data No

10 Totals For All Results

|          |             |               |                       |                    |
|----------|-------------|---------------|-----------------------|--------------------|
| ga:users | ga:sessions | ga:bounceRate | ga:avgSessionDuration | ga:organicSearches |
| 204      | 216         | 0.912037037   | 31.16203704           | 152                |

14 Results Breakdown

|          |             |               |                       |                    |
|----------|-------------|---------------|-----------------------|--------------------|
| ga:users | ga:sessions | ga:bounceRate | ga:avgSessionDuration | ga:organicSearches |
| 204      | 216         | 0.912037037   | 31.16203704           | 152                |

After running the report, three new Sheets will be created with the traffic data from your chosen dates.

Report Configuration: Current Month Blog Metrics, Prior Month Blog Metrics, Next Prior Month Blog Metrics, Dates, Sheet1

It's time to take this Google Analytics data, and turn it into a dashboard. For that, select the original *Sheet1* sheet, click the arrow on the right, and rename it to *Dashboard*. You might also want to drag it to the left, so it's the first tab you see when you open this spreadsheet.

Now, let's add data and more to the dashboard. You can make this as simple or fancy as you'd like—but we'll keep it bare bones for now, and you can add style later.

Start by typing in the metrics you want to display on the dashboard. Then, we'll populate it with data just as we did with the date field previously. Select the cell for that month's data, press =, then navigate to the Sheet where the corresponding information is, select the cell, and press enter. Repeat that for each cell to pull in the proper data for your report.

In your dashboard, add an equal sign and then find the corresponding metric in your metrics spreadsheet.

|                  | Current Month | Prior Month | Next Prior Month |
|------------------|---------------|-------------|------------------|
| Users            | 204           | 376         | 295              |
| Sessions         | 216           | 390         | 315              |
| Organic Searches | 152           | 189         | 169              |
| Bounce Rate      | 0.912037037   |             |                  |

Once this is finished, you'll have a plain dashboard with your site traffic data for the past three months. You can add some quick formatting to make things look nicer, perhaps with background colors for each month and number formatting to make the values stand out.

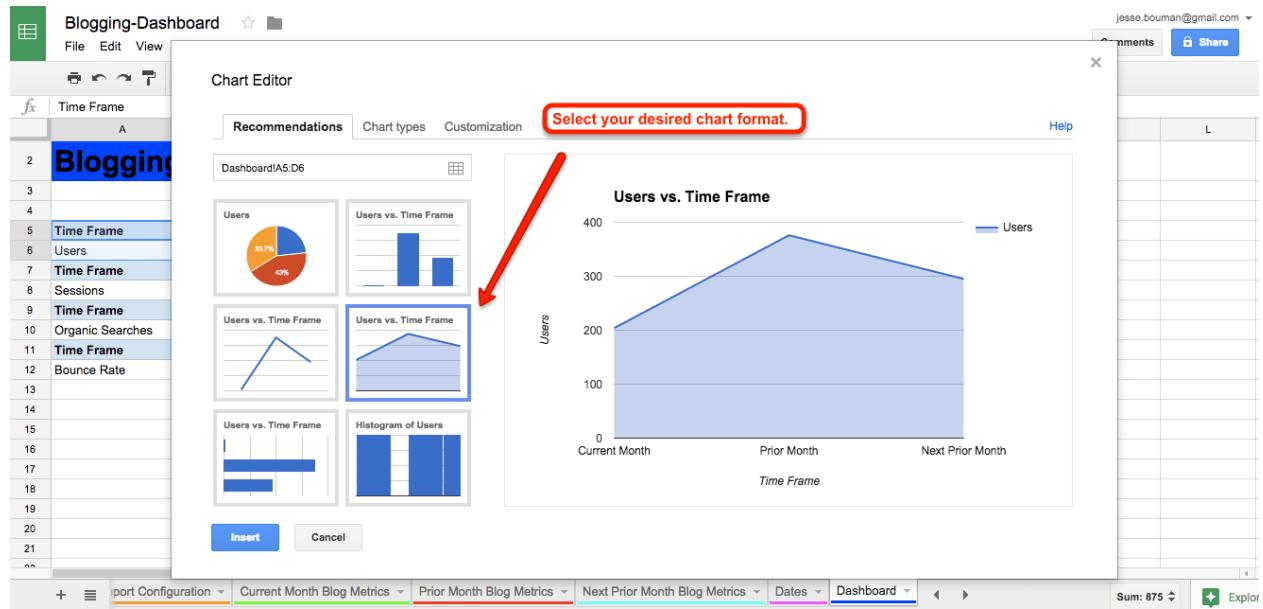
|                  | Current Month | Prior Month  | Next Prior Month |
|------------------|---------------|--------------|------------------|
| Users            | 204           | 376          | 295              |
| Sessions         | 216           | 390          | 315              |
| Organic Searches | 152           | 189          | 169              |
| Bounce Rate      | 0.912037037   | 0.9153846154 | 0.8984126984     |

That's still a bit hard to read, so we'll turn these metrics into charts that will let you see what growth—or not—you've had over the past three months.

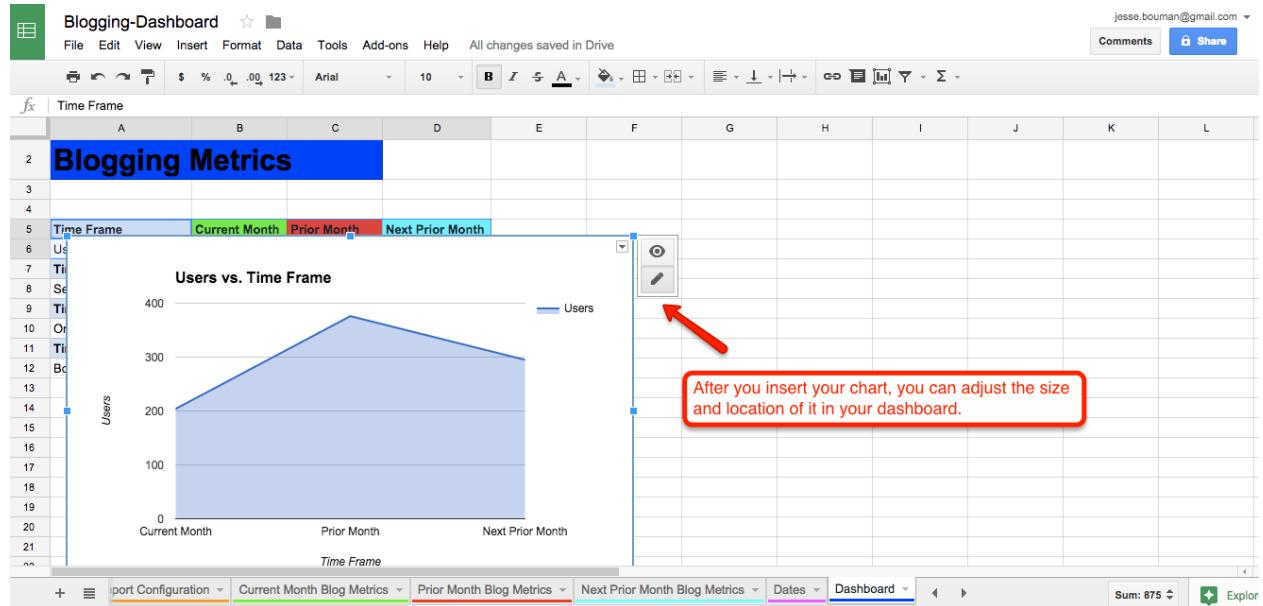
Just highlight the cells that you want to represent visually—perhaps the 3 months of data for *Users*, first—then click *Insert -> Charts* in the top menu.



Google Sheets will show you the chart options. Select which one you'd prefer to represent your data—I'll choose a line volume chart for this data.

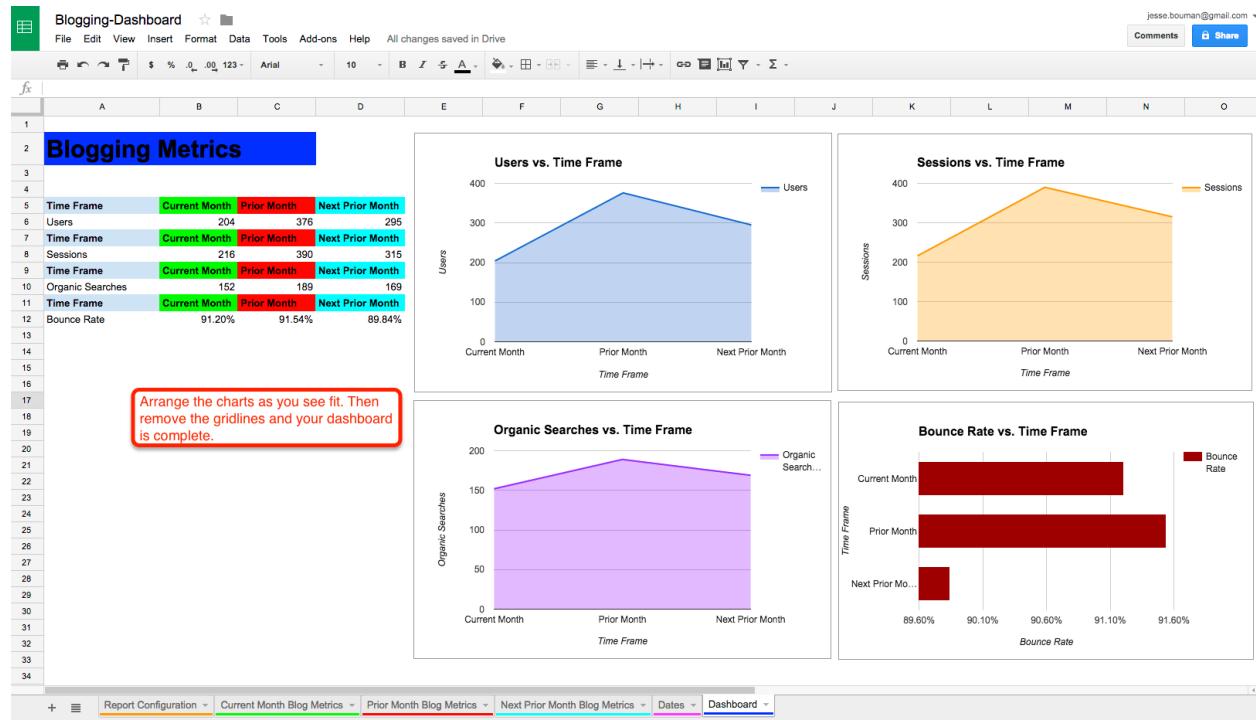


That'll place the chart at a random spot, often on top of your data. Just click and drag on the chart to move it to the place you want, or drag the squares at the corner to resize it. And if you selected the wrong data, click the pencil icon to edit the data, labels, or chart style.



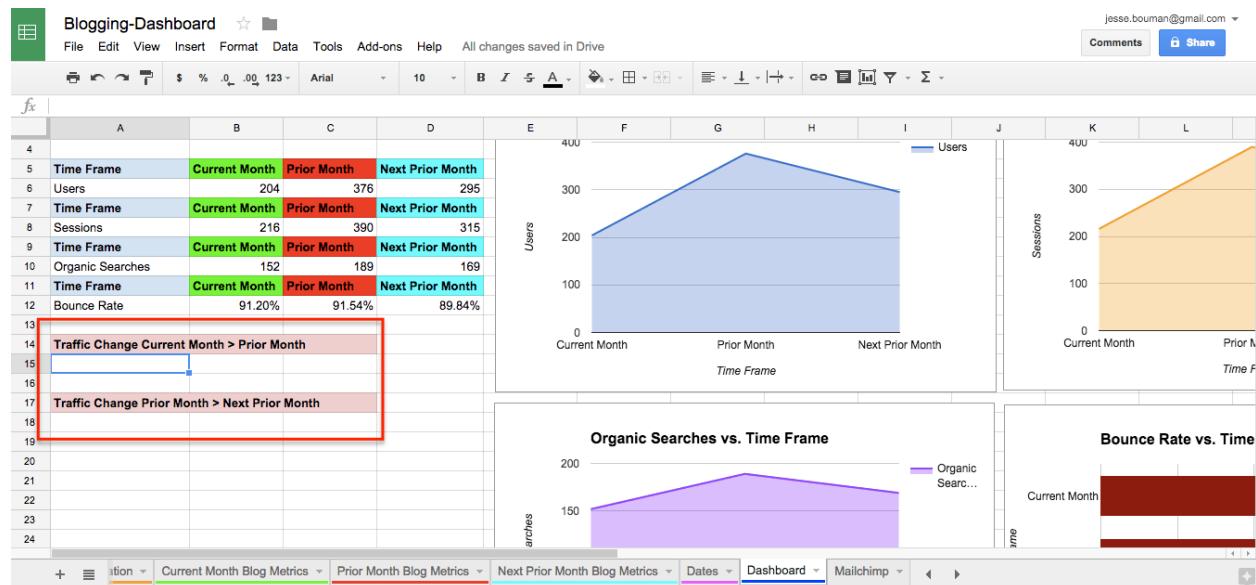
Now, repeat this process for each metric and arrange the charts as you please. I've arranged the charts in a

grid on the right, for a quick way to see the stats at a glance.



Our dashboard now has our core metrics on the left and visual charts on the right. Let's add our monthly growth to the dashboard, and format everything automatically with conditional formatting.

In the blank area below our core metrics, add labels for the monthly growth numbers.



In Cells A15 and A18, let's add conditional formatting. That way, when we create our formula for monthly growth, the spreadsheet will know how to format the cell.

First, select cell A15, then select *Format -> Conditional Formatting* in the top menu. That will open a pane on the right where we will set up our conditional formatting criteria.

The screenshot shows a Google Sheets dashboard titled "Blogging-Dashboard". The dashboard includes a table of blog metrics and two line charts. The conditional format rules pane is open, highlighting a rule for cell A15. The rule applies a single color (blue) to the cell if it is not empty. The formula used is `=Sum(C6-D6)`. The chart to the right of the table shows the number of users over three time frames: Current Month, Prior Month, and Next Prior Month.

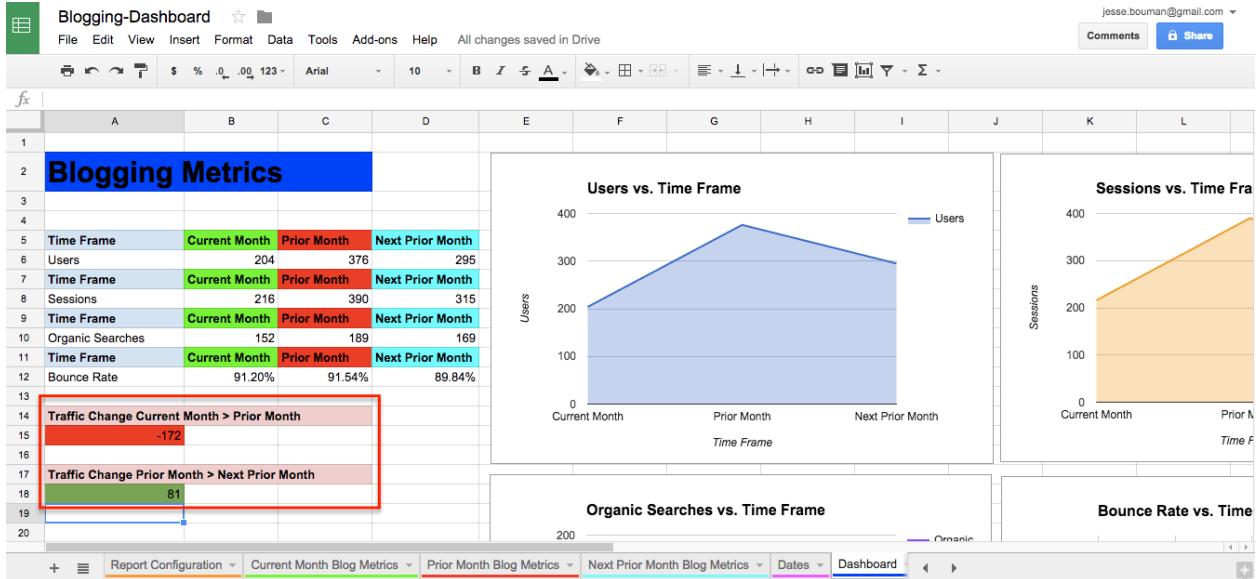
We're going to set two conditions for Cells A15 and A18. If the value of these cells is less than 0, it will display red. If the value is greater than 0, it will appear green. Now we'll be able to see if the traffic is growing just by checking the colors.

To populate the cell, just add in a simple formula. In A15, type: `=Sum()`, then click the cell with the current month's users, then type `-` and click the cell with the previous month's users and press *Enter*. This will give you the difference between the two months, and it'll automatically show the correct color thanks to the conditional formatting.

The screenshot shows the same Google Sheets dashboard. Cell A18 contains the formula `=Sum(C6-D6)`. A red box highlights this formula, and another red box highlights the value "-172" in cell A15. The chart to the right of the table shows the number of users over three time frames: Current Month, Prior Month, and Next Prior Month.

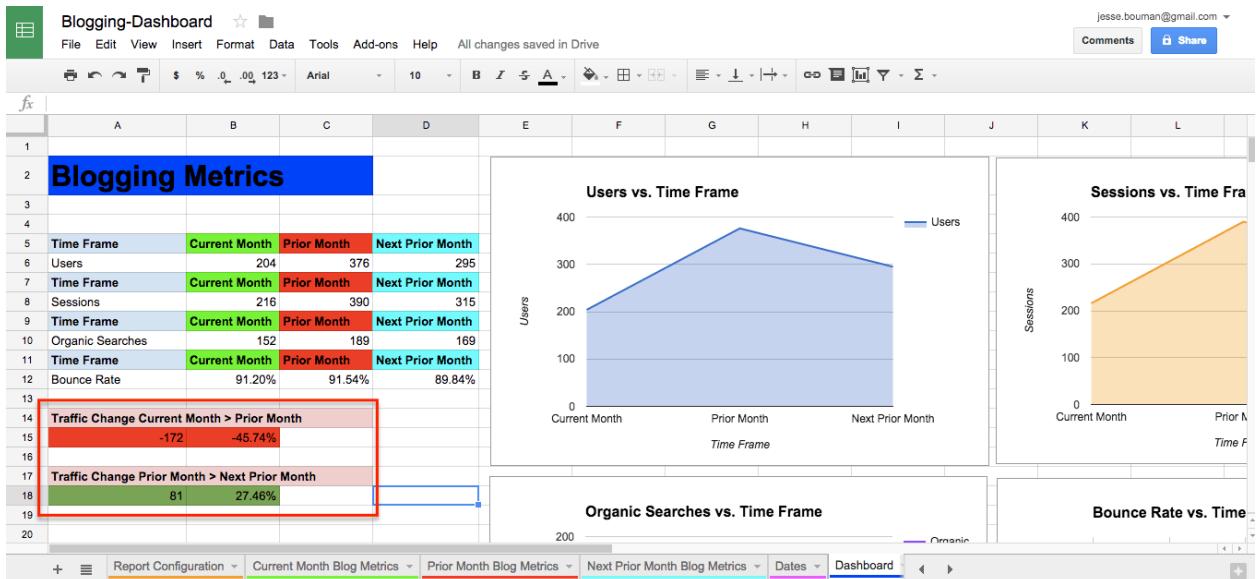
Repeat this process of creating a conditional format for cell A18 and populate the cell with data from Prior

Month and Next Prior Month.



You can repeat this process as many times as you'd like, depending on what metrics you want to track monthly growth. For now, we're just going to track monthly users.

If the total change in your metrics, month-to-month, is not enough, then you can add the percentage change in the cell next to it with this formula:  $=\text{Value1} - \text{Value2} / \text{Value2}$ . You could even add conditional formatting again to see the percentage difference month-to-month easily.



Congratulations! You have just created a site analytics reporting dashboard in Google Sheets without any engineering manpower—one that you can easily tweak to show exactly the stats you want.

## Add Additional Metrics to Your Dashboard

You've built a great basic dashboard, one that'll help you track the most important metrics for most sites. But what if your team wants to see more? The Google Analytics add-on can pull in more data, so let's add more dimensions to our dashboard to see a breakdown of how new users found our site.

To do that, we need to go back to the *Report Configuration* tab. This is where we set the metrics we want to track—and it's where we'll add the new metrics to our dashboard. Click *Add-ons* -> *Google Analytics* -> *Create Report* again, and choose your account, property, and profile just like we did in the first step.

The screenshot shows a Google Sheets spreadsheet titled "Blogging-Dashboard". The "Report Configuration" tab is active. In the "Metrics" field of the configuration, "New Users" is listed. Below it, the "Dimensions" field is empty. A red callout box with the text "For this report, we're going to add Dimensions to our Metrics." points to the "Dimensions" field. A red arrow points from this callout to the "Dimensions" field in the "Create a new report" dialog box, which is also highlighted with a red box.

As you can see at the bottom of the report is an option labeled "Dimensions." We originally ignored this option, but we're going to use it for this next report. Dimensions gives us an extra layer of information for our metrics—a breakdown of where the raw metric comes from.

Let's take a look at where our new users come from, so we can see if most people discover our site via Google Search or social networks. In the "Metrics" field, add *New Users*. Then below that in Dimensions, add the *Source* field.

The screenshot shows a Google Sheets spreadsheet titled "Blogging-Dashboard". On the left, there's a sidebar with various configuration options like Report Name, Type, View (Profile) ID / ids, Start Date, End Date, Last N Days, Metrics, Dimensions, Sort, Filters, Segment, Sampling Level, Start Index, Max Results, and Spreadsheet URL. The main area has tabs for "Report Configuration", "Current Month Blog Metrics", "Prior Month Blog Metrics", "Next Prior Month Blog Metrics", "Dates", and "Dashboard". A modal window titled "Create a new report" is open, showing fields for Account (set to "BoumanBlog"), Property (set to "http://www.boumanblog.com"), and View (Profile) (set to "www.boumanblog.com"). Below these, there are sections for "Choose Metrics and Dimensions". The "Metrics" section has "New Users" selected. The "Dimensions" section has "Source" selected. A red box highlights the "Dimensions" field, and a red arrow points from the text "Add your desired dimensions for your metrics." to it.

Click *Create Report*, then set the dates for the three month period of time we've been monitoring as before. Once that's done, go back to *Add-Ons* in the menu and run the report again.

The screenshot shows a Google Sheets spreadsheet with the "New Users Source" tab selected. The table contains the following data:

|    | ga:source | ga:newUsers |
|----|-----------|-------------|
| 16 | (direct)  | 138         |
| 17 | aol       | 2           |
| 18 | ask       | 1           |
| 19 | bing      | 32          |
| 20 | bouman.is | 1           |

A red box highlights the "New Users Source" tab, and a red arrow points from the text "In the Results Breakdown, you'll see the results for the Dimensions you specified in your report." to the "Results Breakdown" table.

That'll create one more sheet in your spreadsheet: "New Users Sources." It'll include the data we requested, with the total users broken down by which source brought them to our site.

Let's add this data to our reporting dashboard. Because there is so much more data with this report than previous reports, we'll only look at the top 10 traffic sources for new users on the dashboard. If you ever want to dig deeper into the smaller sources, just switch back to the *New Users Sources* tab.

We'll first need to format the source data to look nice on our dashboard. Select the data in the *ga:source* column of the Results Breakdown, then cut it and paste it in the column directly to the right of *ga:newUsers*.

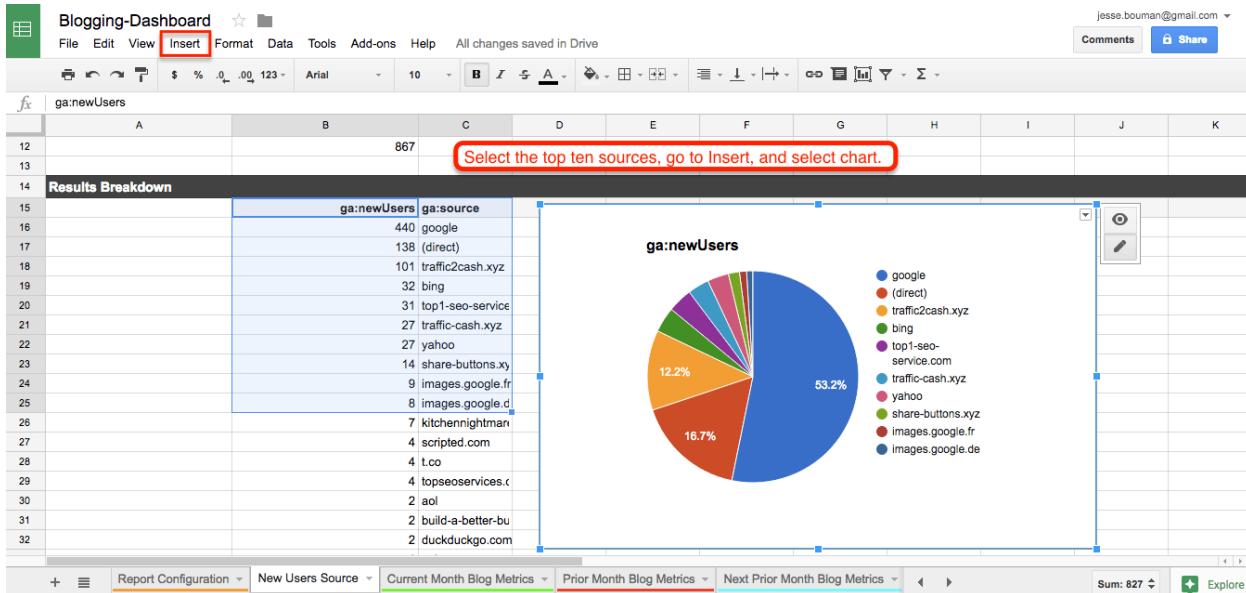
Alternately, you could copy the data by selecting the cell on the right, pressing = and then selecting the correct ga:source item you want, then pressing Enter—and you could hide the ga:source column to clean up the spreadsheet.

| ga:newUsers | ga:source         |
|-------------|-------------------|
| 138         | (direct)          |
| 2           | aol               |
| 1           | ask               |
| 32          | bing              |
| 1           | bouman.is         |
| 2           | build-a-better-bu |
| 1           | build-audience.fi |
| 0           | disq.us           |
| 2           | duckduckgo.com    |
| 1           | facebook.com      |
| 440         | google            |
| 1           | google.co.kr      |
| 1           | google.com        |

Now, let's sort the columns to see the sites that sent the most visitors. Highlight both of the columns, then select *Data* -> *Sort Range*, *column B, Z -> A* in the menu. Your column will now show the source with the most new users at the top.

| ga:newUsers | ga:source         |
|-------------|-------------------|
| 138         | (direct)          |
| 2           | aol               |
| 1           | ask               |
| 32          | bing              |
| 1           | bouman.is         |
| 2           | build-a-better-bu |
| 1           | build-audience.fi |
| 0           | disq.us           |
| 2           | duckduckgo.com    |
| 1           | facebook.com      |
| 440         | google            |
| 1           | google.co.kr      |
| 1           | google.com        |

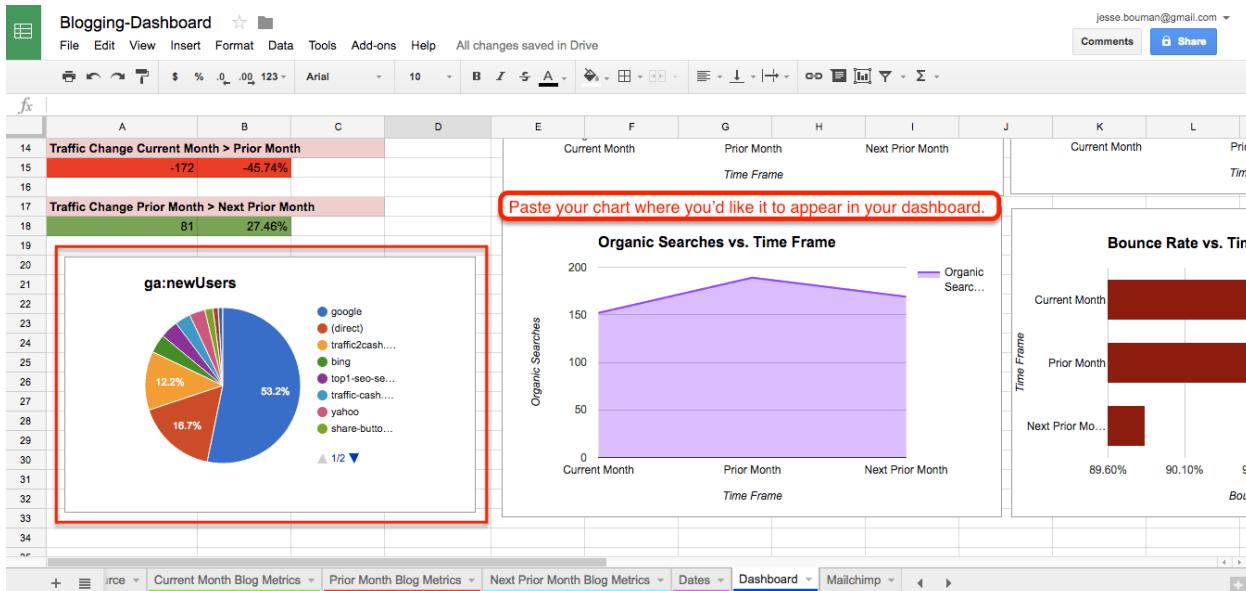
Now that we have our New Users sorted, we'll select the top ten sources and turn them into a chart. Just select the top ten sites and their users, click the *Chart* option in the menu, and choose the pie chart graph to visualize the data.



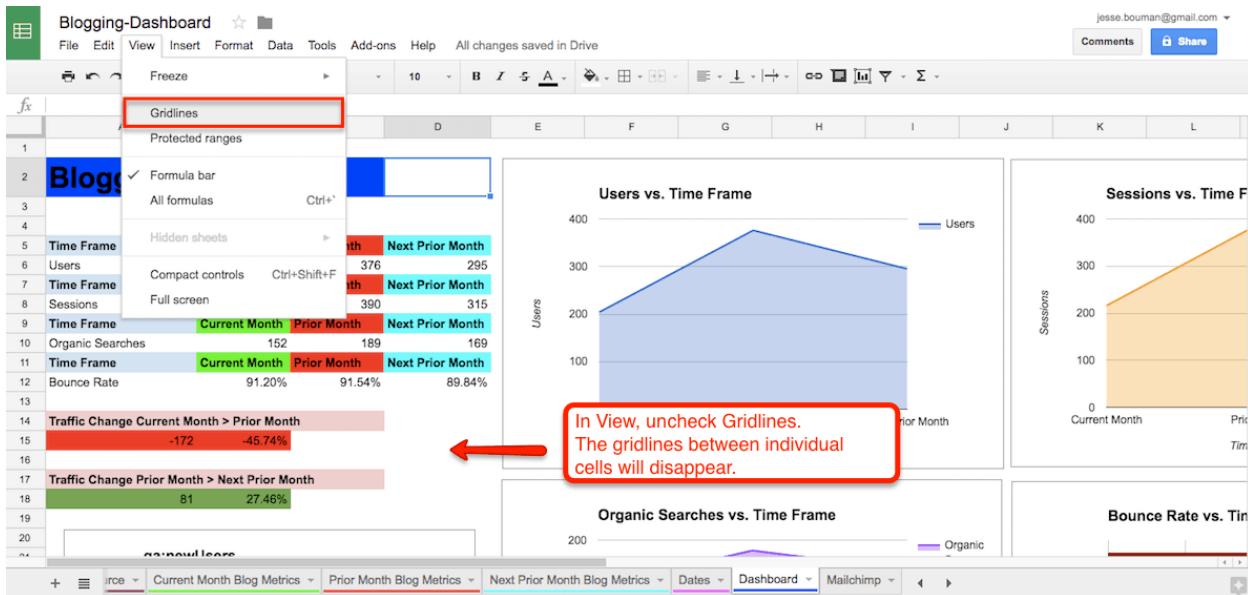
Something's off here: the chart isn't in our main reporting dashboard. To rectify this, just select the pie chart and copy it—just press CMD+C or Ctrl+C.

Then, open the main reporting dashboard tab, paste the new graph and move it where you'd like. Now your dashboard shows where your new users are coming from, at a glance.

If you ever decide to rerun the report with new dates, just replicate these steps except for the final paste. The chart in your reporting dashboard will automatically update based on the chart you have in your report.



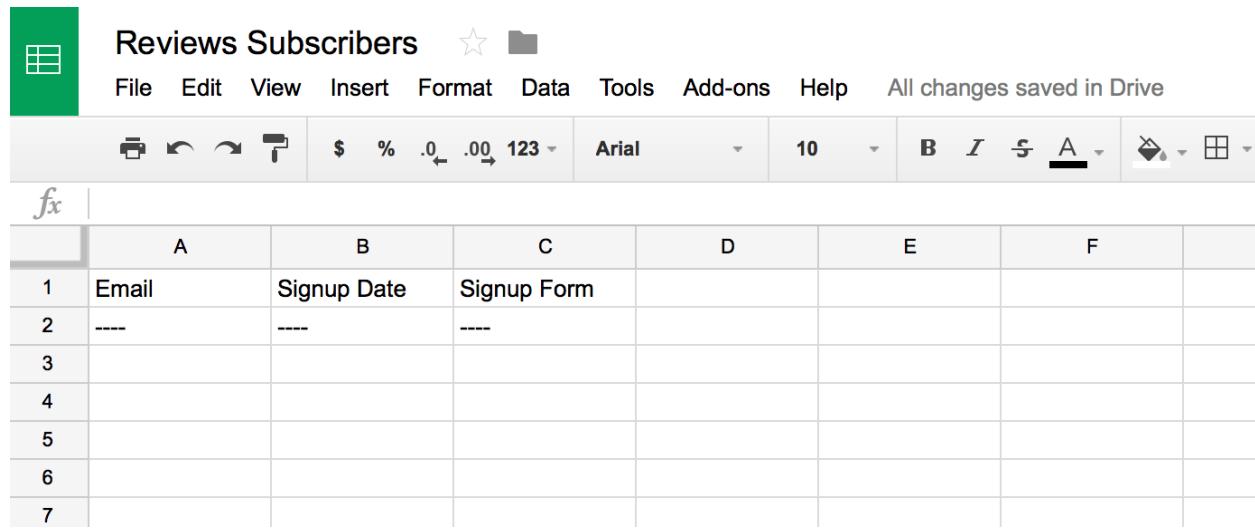
One last thing: we could make the dashboard look less like a spreadsheet, by getting rid of the gridlines in between your charts and graphs. To do this, simply uncheck the gridlines option under the View menu.



- Save new Typeform entries to a Google Sheets spreadsheet
- Save new Eventbrite attendees to a Google Sheets spreadsheet
- Save Gmail emails matching certain traits to a Google Spreadsheet
- Save Twitter mentions to a Google Sheets spreadsheet
- Add new rows on Google Sheets for new PayPal sales
- Add Data to a Spreadsheet from a Webhook

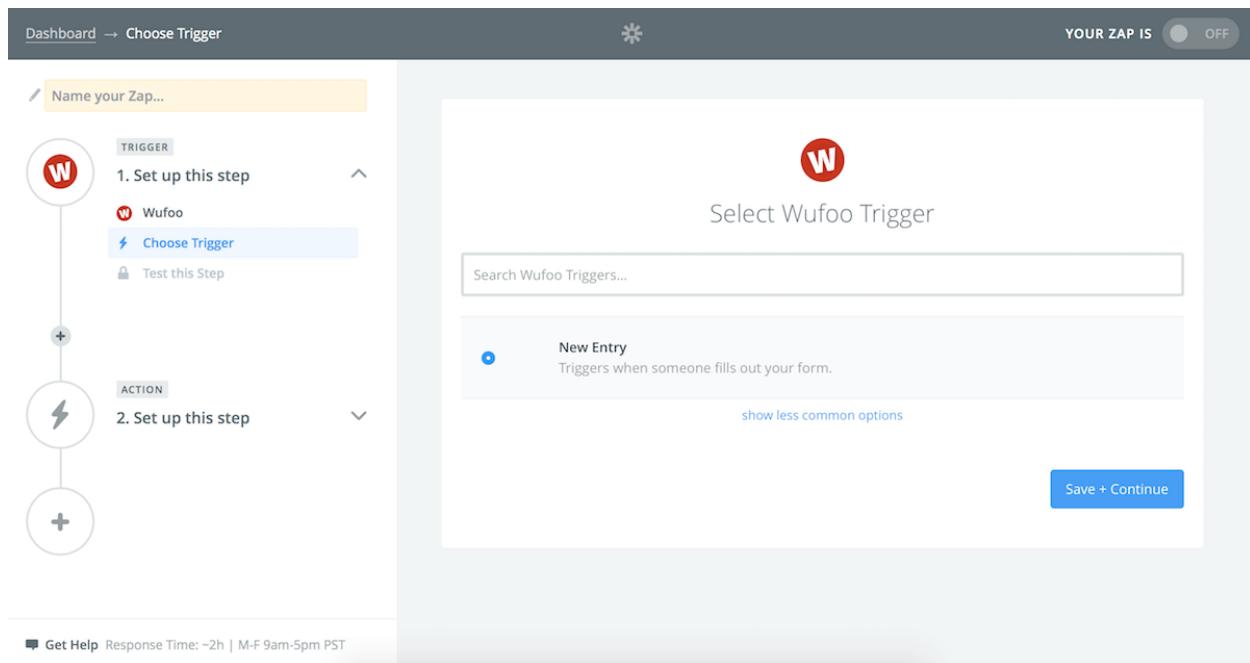
All you need to do is use Zapier to connect your app to a new sheet in your Dashboard spreadsheet. From there, you can use that app's data in your reports.

To get started, add a new sheet to your spreadsheet for the data from your app. Add a column for each item you want to track in the report; here, I've added columns for any new email subscriber's email address, the date they signed up, and the form they signed up with.

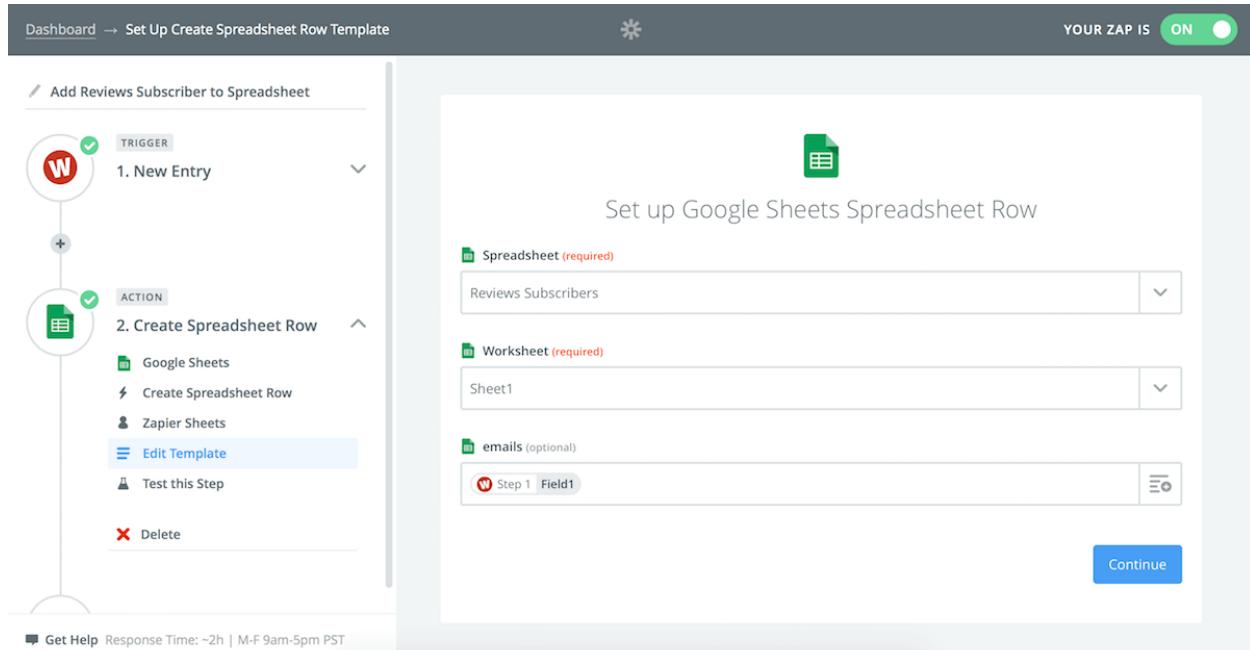


|   | A     | B           | C           | D | E | F |
|---|-------|-------------|-------------|---|---|---|
| 1 | Email | Signup Date | Signup Form |   |   |   |
| 2 | ----  | ----        | ----        |   |   |   |
| 3 |       |             |             |   |   |   |
| 4 |       |             |             |   |   |   |
| 5 |       |             |             |   |   |   |
| 6 |       |             |             |   |   |   |
| 7 |       |             |             |   |   |   |

Now, in the Zapier dashboard, create a new Zap and select the app with your data as the Trigger. I use a Wufoo form for my emails, and selected it here. Be sure to select the correct form or any other options your Trigger app may have.



Then, select Google Sheets as the Action app, and choose the *Create Spreadsheet Row* Action. Select your Google Sheets account, the dashboard spreadsheet, and the new sheet you created for this app's data. Then, click the + icon beside each row, and select the correct data from your original app.



Test and turn on your Zap, and whenever a new item is added to your app—like a new subscriber or sale—it'll be added to your Google Sheets spreadsheet automatically. You can then add up the totals with simple =count() or =sum() functions and add them to your dashboard with graphs as above.

Or, if you want to automatically count the total number of subscribers, sales, or anything else—and are comfortable writing some code—here's a tutorial on using Zapier's [Code integration to count the total](#). Then, use the *Update Spreadsheet Row* action in Google Sheets to update the number on your dashboard automatically whenever a new sale or subscriber comes in.

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## Create Your Own Spreadsheet Dashboards

No matter what data you need to track, Google Sheets can turn it into an easy-to-skim report. The traditional spreadsheet cells and formulas make it easy to arrange and format data, while modern integrations let you copy stats, sales, subscribers and more into your account automatically. And with a bit of tweaking, you'll have that data turned into a professional-looking dashboard with your team's most important numbers in one place.

Now it's your turn: Figure out what data you want to track beyond basic Google Analytics stats, and add it to your spreadsheet. Use these steps to build your own simple dashboards from that data, and figure out how to update that data whenever you need—perhaps just by changing dates, or with Zapier integrations.

Then, the next time your manager asks for stats, you'll know exactly where to check. You'll never have to cram a report together in PowerPoint again.

---

To get that extra data for more detailed dashboards—and to format it automatically so you don't have to spend so much time on your spreadsheet, you'll need more Google Sheets add-ons. There's hundreds of add-ons in the store, so we've tested and found [50 of the best Google Sheets add-ons](#) to help you get the most out of Google Sheets.

You'll find that in chapter 6, along with tips on how to manage your add-ons and make sure Google Sheets has just the features you need most.

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Enjoy? Read and share this chapter online: [zpr.io/uB9b](https://zpr.io/uB9b)

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*Written by freelance writer [Jesse Bouman](#).*

# Chapter 6: 50 Google Sheets Add-Ons to Supercharge Your Spreadsheets



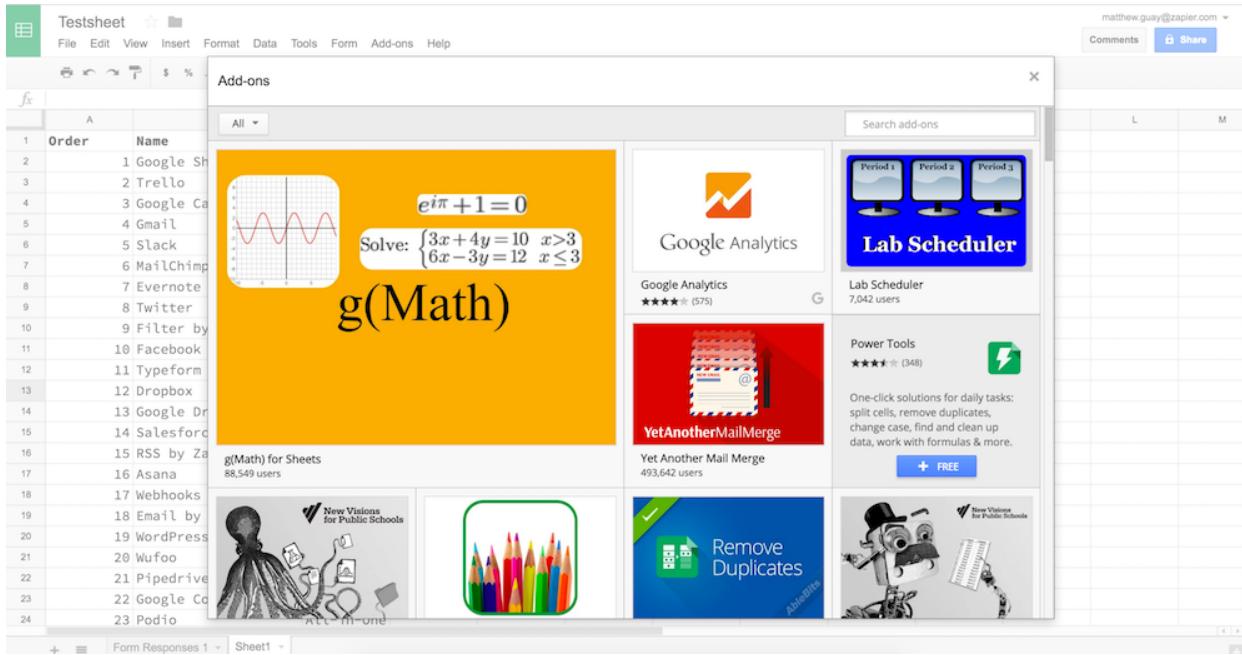
Spreadsheets are amazing, powerful tools. They can do anything—*almost* anything, at least. But wouldn't it be great if they could do that one extra thing you've always wanted—if they could remove extra rows or look up research data or translate text automatically?

For years, Excel has been one of the most popular spreadsheets, partly for its own features but partly for the extra tools you can add to it. It's like the App Store: When there's something else you want Excel to do, chances are there's an app for that.

Now the same is true for [Google Sheets](#), the free online spreadsheet tool that's so easy to use. With the Sheets' Add-ons Gallery, you can add reports, analytics, data analysis, and even email scheduling tools to your spreadsheets in a couple clicks.

Here's how—along with some of the very best add-ons to get you started.

## Getting Started with Google Sheets Add-Ons



Add-ons, extensions, plugins: they're what make the most popular software great. Google Chrome, Adobe Photoshop, Microsoft Word, Sublime Text, and more are great programs on their own, but extensibility is what makes them platforms. You come for the great browser or photo editing tools, but stay for the countless extensions that help you get things done more easily.

Google Sheets—and the rest of the Google Docs suite—were originally known as simpler, less powerful alternatives to Microsoft Office. But over time, Google relentlessly added features to make up the difference, and opened the [Add-ons Store](#) in each of their apps in 2014. Today, there are hundreds of add-ons for each of the Google Docs apps, and it only takes a couple clicks to install them.

To get started with Google Sheets Add-ons, just open a new or existing spreadsheet in your browser, select the *Add-ons* menu in the top right, and click *Get Add-ons*. That'll open the Sheets Add-ons store, where you can search through over 250 add-ons or sort them by category.

Installing add-ons is easy. Just click the *Free* button that appears when you hover over an add-on, then accept the permissions. After a moment, click the *Add-ons* menu again to see your new add-on along with any others you've installed. Just click the add-on to run it—typically add-ons will open in a sidebar, or with a pop-over window over your spreadsheet.

The screenshot shows a Google Sheets document titled "Testsheet". The "Add-ons" menu is open, displaying several sections: "Insert and Delete Cells", "Power Tools", "Remove Blank Rows (and more!)", "Remove Duplicates", "Get add-ons...", and "Manage add-ons...". The "Power Tools" section is currently selected. A sub-menu for "Power Tools" is shown, listing options like "Start", "Remove", "Clear", "Text", "Convert", "Formulas", "Split", "Data", and "Help". The "Remove" option is highlighted.

Need to clean up your add-ons? Just click *Manage Add-ons* in the menu, then select the *Manage* button beside any of your add-ons to disable it in this document or remove it from your account.

The screenshot shows the "Add-ons" window in Google Sheets. It lists four installed add-ons: "Insert and Delete Cells", "Power Tools", "Remove Blank Rows (and more!)", and "Remove Duplicates". Each add-on entry includes a "MANAGE" button and a "Remove" option in a dropdown menu. The "Remove" option is highlighted for the "Remove Blank Rows (and more!)" add-on. The background shows a portion of the spreadsheet with various tasks and charts.

One thing to note is that you can only reasonably install around 20 add-ons, depending on your screen resolution and size, as the other add-ons and add-on options will end up hidden at the bottom of your menu. On my 13" Retina Display MacBook at standard resolution, 22 add-ons plus the options are all that can fit in a full-screen window, as in the screenshot below.

The screenshot shows a Google Sheets spreadsheet titled "Testsheet". The "Add-ons" menu is open, displaying a list of available add-ons. The list includes: Add Rows & Columns, autoCrat, Blockspring, Email Hunter, Email Scheduler, formMule - Email Merge Utility, Geocode by Awesome Table, Insert and Delete Cells, Knoema Data Finder, Mail Merge with Attachments, Mapping Sheets, MarkdownTableMaker, Power Tools, Remove Blank Rows (and more!), Remove Duplicates, SpreadsheetBooster, Sudoku Sheets, Table Styles, Text Analysis, Translate My Sheet, Wolfram|Alpha for Sheets, and Yet Another Mail Merge. At the bottom of the menu, there are links to "Get add-ons..." and "Manage add-ons...". The spreadsheet itself contains a table with columns labeled "Order", "Name", and "Precise".

Most Google Sheets add-ons are installed inside Google Sheets, so they'll work in any browser—install one in Chrome at the office, and it'll still work on Safari at home. A few add-ons are designed for the Google Chrome browser, though, so they'll only work when you're using Chrome. And no add-ons work on the Google Sheets mobile apps, so you'll have to use them from your laptop or desktop instead.

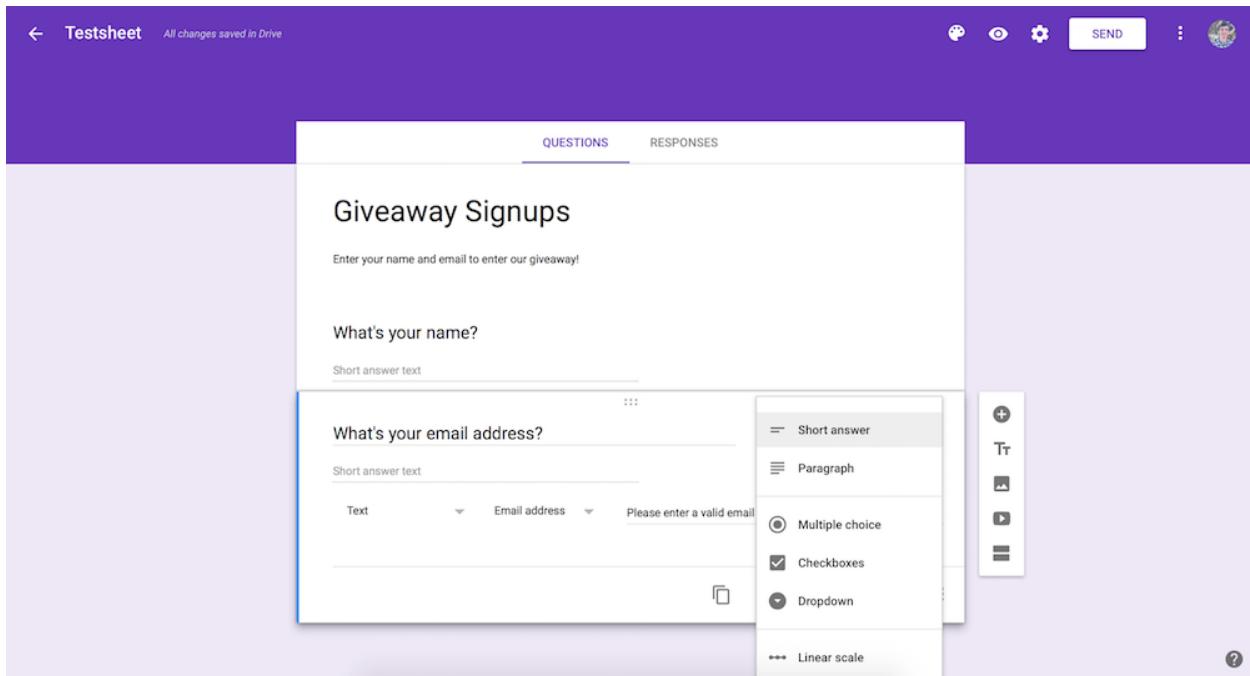
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Now that you know how to give your spreadsheets superpowers, here are the best add-ons for Google Sheets to help you gather data, format text, crunch numbers, share your creations, and more.

**Note:** Most Google Sheets add-ons are free, so each tool listed here is free unless otherwise noted.

#### The Best Google Add-ons for:

## Forms



Need to quickly add contact info, customer feedback, and more to a spreadsheet? A form is the simplest way to do that—and Google Sheets comes with one built-in. Google’s free form tool, [Google Forms](#), lets you create simple forms and share them with anyone. And it’s just a click away in Google Sheets.

Just click *Tools -> Create a Form* in Google Sheets, and the Google Forms editor will open with a new form that’s automatically connected to your spreadsheet. Add the fields you want, share the form with your colleagues or followers, and the results will show up in your spreadsheet automatically.

**Tip:** Google Forms looks simple, but is packed with hidden features. Jump back to Chapter 2 for an [in-depth guide to Google Forms](#).

Then, here are some extra add-ons to help manage your form results:

### copyDown

*to add formulas to form responses*

Formula responses are just plain text and numbers by default. To calculate values, reformat text, or use any other functions, you’ll need to add them in later. Or you can use [copyDown](#) to automatically copy formulas to new rows.

Just add the formulas to a top row in the spreadsheet worksheet where your form results will be added—row 2 by default—and turn on copyDown. Then, as results are added to your spreadsheet, it’ll copy those formulas down to each new row, calculating values, evaluating results, and more automatically.

## Flubaroo

*to grade results from a form*

Building a quiz in your form? [Flubaroo](#) can grade multiple choice options automatically, and give you a graph and chart of the scores, averages, and more. It can even email those who filled out your form with their grades and the questions they missed.

Flubaroo is designed for classrooms, but it can equally be a great tool to check your team's knowledge or make a quick interactive game in a spreadsheet.

## Advanced Summary

*to create a report from your form data*

You could create your own charts and reports from your form data, or [Advanced Summary](#) could do that for you automatically. Just run the add-on on your results sheet, and it'll let you filter results, visualize them in charts and word clouds, and save the data as a new view in your spreadsheet. Or save that page as a PDF for a quick survey report.

## rowCall

*to sort entries into their own sheet*

Want to organize your form entries by the person who added them, the category of feedback they gave, the location they visited, or any other common data? [rowCall](#) can do that for you. It creates a new sheet for each unique type of response and sorts the data into the appropriate sheet automatically, so you never have to search through and filter form data again.

---

Want to use another form with your spreadsheet instead of Google Forms? Let Zapier help. Our app integration tool connects to the most popular form and survey apps—including Typeform, Wufoo, Gravity Forms, and more—and can copy your new form results to a Google Sheets spreadsheet automatically.

Check Zapier's roundup of the [best form apps](#) for more form builder options, then check out [Zapier's form integrations](#) that can help you connect your form to spreadsheets (and more). Or use some of these pre-made integrations to get started quickly:

**Zapier Integrations:**

- [Save new Typeform entries to a Google Sheets spreadsheet](#)
- [Save new Wufoo entries to a Google Sheets spreadsheet](#)
- [Save new Gravity Forms submissions to a Google Sheets spreadsheet](#)
- [Save new SurveyMonkey responses as Google Sheets rows](#)

## Data Gathering

Spreadsheets are a great way to sort through your survey results and financial data—but how do you get your data into the spreadsheet if you’re not using a form?

With many apps, you can export your data as a .csv file and open it in Google Sheets. Or, with these extensions, you could pull in data automatically.

### Wolfram|Alpha for Sheets

*to find data about the world around you*

| Locations | Population                                                                                                                   |
|-----------|------------------------------------------------------------------------------------------------------------------------------|
| USA       | 322 million people (world rank: 3rd) (2014 estimate)                                                                         |
| Russia    | 142 million people (world rank: 9th) (2014 estimate)                                                                         |
| China     | 1.36 billion people (world rank: 1st) (2014 estimate)                                                                        |
| EU        | total   510 million people<br>highest   81.6 million people (Germany)<br>lowest   421844 people (Malta)   (2014 estimates)   |
| Singapore | 5.34 million people (world rank: 116th) (2014 estimate)                                                                      |
| ASEAN     | total   618 million people<br>highest   250 million people (Indonesia)<br>lowest   426570 people (Brunei)   (2014 estimates) |

Want Siri inside your spreadsheets? Wolfram|Alpha powers some of Siri’s best answers, answering data about population, finance, nutrition, and more. Add it to your spreadsheet, and you can answer most questions in seconds.

Just install [WolframAlpha for Sheets](#), and type in the items you want to calculate. Then click the *Compute Selection with Wolfram|Alpha* option in the Add-ons menu, and after a few seconds your text will be replaced with the answer. Or you can search the Wolfram|Alpha sidebar for an answer and insert the data or a graph directly into your spreadsheet.

### Import.io

*to turn any website into a spreadsheet*

The screenshot shows the import.io web application interface. At the top, there's a navigation bar with 'import.io' logo, 'Give feedback', and 'Help'. Below the navigation is a toolbar with buttons for 'Add or manage URLs', 'Create a blank table', 'Undo', 'Redo', 'Download CSV' (which is highlighted in red), 'Data view', and 'Website view'. The main area displays a table of product data. The columns are labeled '#', 'Newim...g...', 'Productp...', 'Prodimg ...', 'Prodnam...', 'Proddes...', 'Prodpric...', 'Proddim...', 'Proddim...', and 'Proddim...'. The table contains 7 rows of data, each representing a different IKEA STUVA Storage bench. Row 7 represents a POÄNG Chair. Each row includes a small image of the product, its name, brand (STUVA or POÄNG), category (Storage bench or Chair), price (\$79.99 or \$159.00), dimensions (Width: 35 3/8", Height: 19, Seat width: 26 3/4"), and links to 'View details' and 'Buy now'. A vertical sidebar on the right has a 'Add column' button.

| # | Newim...g...     | Productp... | Prodimg ... | Prodnam...    | Proddes... | Prodpric...     | Proddim...  | Proddim...                   | Proddim...              |
|---|------------------|-------------|-------------|---------------|------------|-----------------|-------------|------------------------------|-------------------------|
| 1 | STUVA Storage... |             | STUVA       | Storage bench | \$79.99    | Width: 35 3/8 " | Height: 19  | <a href="#">View details</a> | <a href="#">Buy now</a> |
| 2 | STUVA Storage... |             | STUVA       | Storage bench | \$79.99    | Width: 35 3/8 " | Height: 19  | <a href="#">View details</a> | <a href="#">Buy now</a> |
| 3 | STUVA Storage... |             | STUVA       | Storage bench | \$79.99    | Width: 35 3/8 " | Height: 19  | <a href="#">View details</a> | <a href="#">Buy now</a> |
| 4 | STUVA Storage... |             | STUVA       | Storage bench | \$79.99    | Width: 35 3/8 " | Height: 19  | <a href="#">View details</a> | <a href="#">Buy now</a> |
| 5 | STUVA Storage... |             | STUVA       | Storage bench | \$79.99    | Width: 35 3/8 " | Height: 19  | <a href="#">View details</a> | <a href="#">Buy now</a> |
| 6 | STUVA Storage... |             | STUVA       | Storage bench | \$79.99    | Width: 35 3/8 " | Height: 19  | <a href="#">View details</a> | <a href="#">Buy now</a> |
| 7 | POÄNG Chair ...  |             | POÄNG       | Chair         | \$159.00   | Width: 26 3/4 " | Seat width: | <a href="#">View details</a> | <a href="#">Buy now</a> |

Found data on a website that you want to import to a spreadsheet—perhaps a list of prices, news articles, or anything else in a table or list? [Import.io](#) can turn that into a spreadsheet.

Just enter a link to the site, and Import.io will turn it into a table. You can edit the columns to pull in any data you want, then [export it to Google Sheets](#) or download as a spreadsheet. Or you can use their [bulk extractor spreadsheet template](#) to import data from websites directly inside Google Sheets.

**Import.io Price:** Free for up to 10k queries per month; from \$249/month for paid plans starting at 50k queries per month

## Supermetrics

*to import ad, finance, and social data*

The screenshot shows a Google Sheets spreadsheet with a list of tweets in the main pane. The sidebar on the right is titled "Supermetrics" and contains a "Modifying query at Sheet1!\$B\$1:\$C\$51" section. It includes buttons for "Apply changes" and "Exit". Below these are sections for "Data source" (Twitter: maguay (23521970)), "Query type" (Tweets: iOS), and "Select fields" (with options like Tweet content, Link to tweet, SELECT ALL, Time, User Twitter name, etc.).

|    | Tweet                                                                                                     | Link                       |
|----|-----------------------------------------------------------------------------------------------------------|----------------------------|
| 1  | 【予告】6/26(日)～1周年超大感謝祭!カムバックユーザーの数に応じて全員にクリスタル                                                              |                            |
| 2  | 【予告】6/26(日)～1周年超大感謝祭!カムバックユーザーの数に応じて全員にクリスタル iOS▶https://t.co/...                                         | https://twitter.com/e...   |
| 3  | 6/26(日)～エレストCM放映が決定(≤▽≤)ますます盛り上がるエレストから目が離せない!!iOS▶https://t.co/...                                       | https://twitter.com/ale... |
| 4  | Apple's iOS 10 finally, truly begins the mobile messaging war https://t.co/0MLGhSoauU                     | https://twitte... 5429336  |
| 5  | (Foto) Konsep Fitur Dark Mode Dambaan di iOS 10 https://t.co/kG80IKEMdz                                   | https://twitter.com/Su...  |
| 6  | RT @ishmaelsosa: Been clicking "Remind me later" on my iOS update since last year 😊                       | https://twitter.com/G...   |
| 7  | @minacrisOfficial is there any paid service to bypass icloud lock on iOS 9.3.2 Clean Mode.. forgot my pas | https://twitter.com/Dj...  |
| 8  | RT @WanMohdNazri: Pakai tahu, tapi nama penuh dia tak tahu. Cuba test member sebelah, tanya maks          | https://twitter.com/R...   |
| 9  | Akhirnya, Path Daily Hadir untuk iOS https://t.co/mL0G7x7yM                                               | https://twitter.com/JC...  |
| 10 | 海色とキリキリジョーカーがiosに来たのはいいけど、iPhoneユーザーは普通につらそう                                                              | https://twitter.com/R...   |
| 11 | RT @wunderground: We can't control the weather, but our iOS app has the tools you need to plan your da    | https://twitter.com/Ma...  |
| 12 | We have released a smartphone application. It corresponds to both Android and iOS.https://t.co/1QmGPaf    | https://twitter.com/Sa...  |
| 13 | RT @khajochi: หน้าจอตอนTextEdit บน iOS 10 ที่ใช้พิมพ์ในงาน WWDC https://t.co/o5EA0GoZLN https://t.co/...  | https://twitter.com/dd...  |
| 14 | RT @9to5mac: August, Canary, Withings, D-Link, & others confirm Apple HomeKit support coming w            | https://twitter.com/ba...  |
| 15 | RT @Y2SHAF: iOS 10 now lets you do individual read receipts the curve game is forever changed https:/     | https://twitter.com/rei... |
| 16 | RT @ishmaelsosa: Been clicking "Remind me later" on my iOS update since last year 😊                       | https://twitter.com/3n...  |
| 17 | RT @ginalimp: MiniGolf in Frozen City Games Family Mac App *** \$4.99 ->; FREE #Family 4+ #Mac #          | https://twitter.com/lvr... |
| 18 | RT @SportDictatorHQ: WE'LL TWEET STREAM FOR Joshua v BreazealeCompatible on iOS/Android/XE                | https://twitter.com/sq...  |
| 19 | RT @DailyWARKS: How to downgrade iOS 10 back to iOS 9 on iPhone or iPad https://t.co/jFNUYMaIQ2           | https://twitter.com/Cc...  |
| 20 | RT @mn38ka: 待てよ? タッチ箇所を明確にわけると年齢制限がついたりiOSで出せなくなるんじゃない?                                                   | https://twitter.com/ge...  |
| 21 | RT @RIORAO: 携帯端末向けOSのiOSちゃん https://t.co/l0rehZ9rx1                                                       | https://twitter.com/by...  |
| 22 | RT @tokoronyori: #ひとりぼっち惑星 iOSでも公開されました! ひとりぼっちのいきものが、だれかのこ                                               | https://twitter.com/ya...  |
| 23 | @TulisanTunist ini aonnya cuman buat ios? kalo android bisa streaming iuuu ok?                            | https://twitter.com/let... |

**Supermetrics** is a powerful tool to import your business data into Google Sheets. It connects to analytics tools like Google Analytics and Moz, social networks including Facebook, Twitter, and YouTube, payment services like Stripe, along with ads services, databases, and more.

To import data, select the connection and query type, add filters to only watch for specific data, and then choose the fields you want added to your spreadsheet. Supermetrics will then pull in your data and can refresh it on a schedule to keep your spreadsheet up to date. It can even email you a PDF copy of your spreadsheets whenever the data is refreshed, so you'll never have to make reports by hand again.

**Supermetrics Price:** Free Google Analytics integration with up to 100 queries per month; from \$49/month for one of the [paid plans](#), which add more queries per day and other features

## Blockspring

*to import and analyze data with APIs*

The screenshot shows a Google Sheets spreadsheet on the left and the Blockspring Console interface on the right. The spreadsheet contains data from an Amazon API call, with columns for ASIN, DetailPageURL, ItemLinks.ItemLi, ItemAttributes.Au, ItemAttributes.Bi, ItemAttributes.E, ItemAttributes.E, and ItemAttributes.E. The Blockspring Console shows a workflow for an 'Amazon General Item Search' block, which has been run and scheduled. The trial period ends in 14 days.

| ASIN       | DetailPageURL                                                                                           | ItemLinks.ItemLi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ItemAttributes.Au | ItemAttributes.Bi | ItemAttributes.E | ItemAttributes.E | ItemAttributes.E |
|------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|------------------|------------------|------------------|
| 1338099132 | <a href="http://www.amazon.com/gp/product/B00AP06III">http://www.amazon.com/gp/product/B00AP06III</a>   | [{"Description": "I J.K. Rowling", "Hardcover": true, "Image": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL150_.jpg", "ISBN": "9781338099133", "LargeImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL1500_.jpg", "MediumImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL700_.jpg", "SmallImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL100_.jpg", "Title": "Harry Potter and the Prisoner of Azkaban (Harry Potter, Book 3)", "Type": "Book"}]       |                   |                   |                  |                  |                  |
| B00AUOP7CW | <a href="http://www.amazon.com/gp/product/B00AUOP7CW">http://www.amazon.com/gp/product/B00AUOP7CW</a>   | [{"Description": "Technical Details", "Amazon Video": true, "Image": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL150_.jpg", "ISBN": "0038332166576", "LargeImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL1500_.jpg", "MediumImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL700_.jpg", "SmallImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL100_.jpg", "Title": "Harry Potter and the Prisoner of Azkaban (Harry Potter, Book 3)", "Type": "Book"}] |                   |                   |                  |                  |                  |
| 545162076  | <a href="http://www.amazon.com/gp/product/B002HLM4E0">http://www.amazon.com/gp/product/B002HLM4E0</a>   | [{"Description": "T J. K. Rowling", "Paperback": true, "Image": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL150_.jpg", "ISBN": "9780545162074", "LargeImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL1500_.jpg", "MediumImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL700_.jpg", "SmallImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL100_.jpg", "Title": "Harry Potter and the Prisoner of Azkaban (Harry Potter, Book 3)", "Type": "Book"}]      |                   |                   |                  |                  |                  |
| B00SFILQR0 | <a href="http://www.amazon.com/gp/product/B0054T90352">http://www.amazon.com/gp/product/B0054T90352</a> | [{"Description": "Technical Details", "Toy": true, "Image": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL150_.jpg", "ISBN": "658978578498", "LargeImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL1500_.jpg", "MediumImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL700_.jpg", "SmallImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL100_.jpg", "Title": "Harry Potter and the Prisoner of Azkaban (Harry Potter, Book 3)", "Type": "Book"}]           |                   |                   |                  |                  |                  |
| 545790352  | <a href="http://www.amazon.com/gp/product/B00271HTLI">http://www.amazon.com/gp/product/B00271HTLI</a>   | [{"Description": "I J.K. Rowling", "Hardcover": true, "Image": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL150_.jpg", "ISBN": "9780545790352", "LargeImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL1500_.jpg", "MediumImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL700_.jpg", "SmallImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL100_.jpg", "Title": "Harry Potter and the Prisoner of Azkaban (Harry Potter, Book 3)", "Type": "Book"}]       |                   |                   |                  |                  |                  |
| B00TTX54GO | <a href="http://www.amazon.com/gp/product/B00TTX54GO">http://www.amazon.com/gp/product/B00TTX54GO</a>   | [{"Description": "Technical Details", "Toy": true, "Image": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL150_.jpg", "ISBN": "885402760666", "LargeImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL1500_.jpg", "MediumImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL700_.jpg", "SmallImage": "http://ecx.images-amazon.com/images/I/51JLWzXyQUL._SL100_.jpg", "Title": "Harry Potter and the Prisoner of Azkaban (Harry Potter, Book 3)", "Type": "Book"}]           |                   |                   |                  |                  |                  |

Want to find pricing data from Amazon, extract data from an article, or research company stats? [Blockspring](#) is a powerful add-on that can do that and more. It connects your spreadsheets to a wide variety of web APIs to import and analyze data manually or on a schedule.

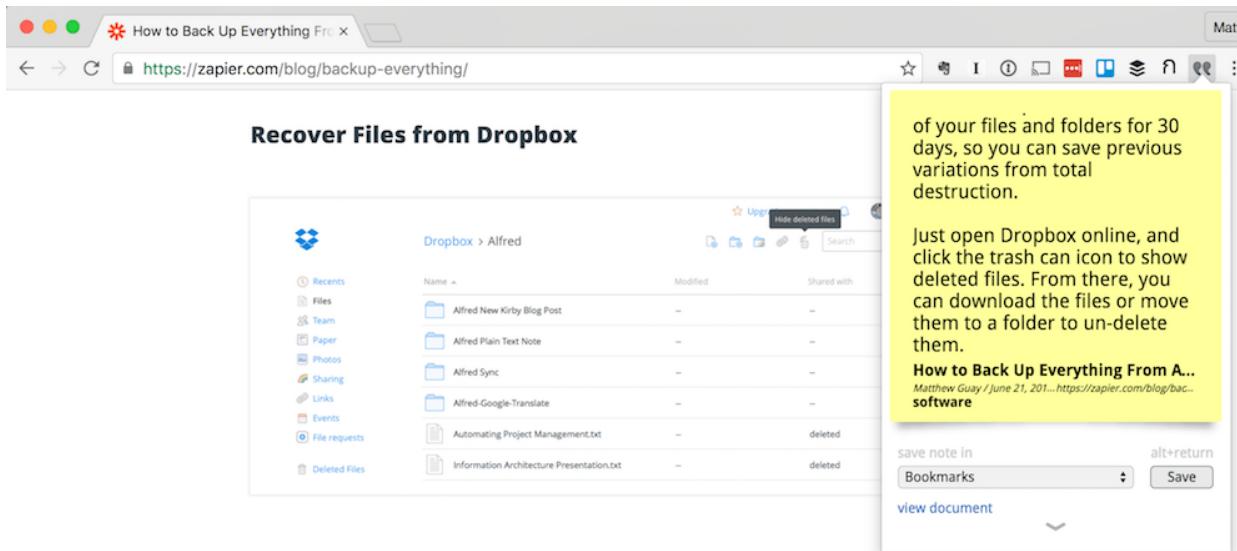
You'll need to install the add-on, create a Blockspring account, and connect it to the services you want. Some, like Buffer, let you connect in a click; others, like Amazon, require you to copy API keys or authentication details. Once that's done, you can create workflows to look up data, use machine learning tools like [BigML](#) or [Alchemy API](#) to find patterns in your data, or [write your own custom scripts](#) with R and Python.

It's a bit more complicated to set up than most Sheets add-ons, but its powerful tools can well be worth the hassle.

**Blockspring Price:** Free 14-day trial; [\\$10/month](#) for up to 100k requests to connected services per month

## Citable

*to turn Google Sheets into a bookmarks tool*



Deleted a file from Dropbox? No worries. Dropbox saves versions of your files and folders for 30 days, so you can save previous variations from total destruction.

Spreadsheets are the perfect place to gather your research, and [Citable](#) makes that even simpler. Install the Chrome extension, then when you find something you want to save, just select it and click the Citable button.

Citable will copy that text, along with the link, site and author info, and any tags you add, and save them to a Google Sheets spreadsheet. You can then export all of your notes in Bibtext format to import into [Zotero](#) or other citation apps to quickly create a bibliography for your next research.

## Wikipedia Tools

*to find facts from Wikipedia*

Speed up your research with the [Wikipedia Tools](#) add-on, which adds a bundle of new Wikipedia functions to your spreadsheet. Then, using functions like =WIKIDATAFACTS(), you can import info, translations, synonyms, categories, and more into your spreadsheet.

**Related:** Want to import info from RSS feeds? Check out the [Google Sheets import tools](#) from chapter 4 for built-in options for that and more.

## Knoema Data Finder

*to find global statistics*

Need detailed statistics on population, crime statistics, exports, land use, and other academic topics? [Knoema Data Finder](#) gives you a sidebar to search through and import data on these and [dozens of other topics](#) from governments and industry sources around the globe. Just search for what you're looking for, then click the result that looks closest, and Knoema will insert a table of the data into your spreadsheet.

## Twitter Archiver

*to search Twitter over time*

Want to search Twitter for a topic or hashtag, and save those results to a spreadsheet? [Twitter Archiver](#) is a simple add-on for just that. Enter simple or advanced search queries, and watch for locations, hashtags, languages, or mentions. Twitter Archiver will find all the Tweets it can from Twitter's history, then will update your spreadsheet with new Tweets every hour for free, or every 10-15 minutes with a paid account.

**Twitter Archiver Price:** Free for core features; \$39.99 for the [Premium version](#), which adds support and automatic refresh every 10-15 minutes

## Google Analytics

*to analyze your website statistics*

Google Analytics is a free and powerful way to learn about your site visitors, but its interface can be confusing and cluttered. For a simpler way to see just the data you need—and turn it into reports—the [Google Analytics Sheets add-on](#) can pull in any analytics data you want and save it to spreadsheet tables. You'll need to manually refresh it when you want new data, but that's perfect if you want to compare data over time and already do that in a spreadsheet on a regular basis.

**Tip:** Jump back to chapter 5 to learn how to [build a custom analytics dashboard with the Google Analytics add-on](#).

## Email Hunter

*to find email addresses using a spreadsheet*

Want to email everyone at a specific company, or desperately searching for an address for that one person you need to contact? [Email Hunter](#)'s Sheets add-on can do that work right from a spreadsheet.

Just create an account and add your API key to the add-on, then enter a domain in its sidebar. Email Hunter will then fill your spreadsheet with every email it can find for that company, ranked by how confident it is that this email address is valid.

**Email Hunter Price:** Free for 150 requests per month; from \$49/month for [paid plans](#) starting at 1k requests per month.

## Text Tools

Now that your spreadsheet is filled with data, what are you going to do with it? Numbers can be calculated and graphed, but text can be harder to manipulate in a spreadsheet. Here are some helpful tools to translate, analyze, and map your text in a spreadsheet.

## AYLIEN Text Analysis

*to learn more about your text*

|    | A                                               | D            | E                       | F         | G                   |
|----|-------------------------------------------------|--------------|-------------------------|-----------|---------------------|
| 1  | A vaincre sans péril, on triomphe sans gloire   | Subjectivity | Subjectivity Confidence | Polarity  | Polarity Confidence |
| 2  | To win without risk is to triumph without glory | unknown      |                         | 0 neutral | 0.8470003092        |
| 3  | This is a great day!                            | positive     | 0.9091515562            |           |                     |
| 4  | I'm feeling terrible                            | negative     | 0.9960139745            |           |                     |
| 5  | This year has been a complicated one.           | neutral      | 0.4411800673            |           |                     |
| 6  |                                                 |              |                         |           |                     |
| 7  |                                                 |              |                         |           |                     |
| 8  |                                                 |              |                         |           |                     |
| 9  |                                                 |              |                         |           |                     |
| 10 |                                                 |              |                         |           |                     |
| 11 |                                                 |              |                         |           |                     |
| 12 |                                                 |              |                         |           |                     |
| 13 |                                                 |              |                         |           |                     |
| 14 |                                                 |              |                         |           |                     |
| 15 |                                                 |              |                         |           |                     |

Need to summarize text, analyze its sentiment, find concepts and individual entities in text, get suggested hashtags, and more? The [AYLIEN Text Analysis](#) add-on offers a full suite of tools to help you figure out what your data means and how to use it more effectively.

It's one of the add-ons that's best paired with another add-on. Say you've imported bulk data from a website and want to summarize it, or have pulled in your team's Tweets and want to find their sentiment and figure out the best hashtags to use. Text Analysis can give you those insights from your imported text in seconds.

**Text Analysis Price:** 1,000 queries for free; from \$10 for 1,000 more query credits

## Translate My Sheet

*to translate an entire spreadsheet*

|    | A                  | B                      | C | D | E | F | G |
|----|--------------------|------------------------|---|---|---|---|---|
| 1  | Hello!             | สวัสดี!                |   |   |   |   |   |
| 2  | What is your name? | คุณชื่ออะไร?           |   |   |   |   |   |
| 3  | What time is it?   | ลิ้งที่เวลาบันทึกอะไร? |   |   |   |   |   |
| 4  | Where do you live? | คุณอยู่ที่ไหน?         |   |   |   |   |   |
| 5  | Sunday             | วันอาทิตย์             |   |   |   |   |   |
| 6  | Monday             | วันจันทร์              |   |   |   |   |   |
| 7  | Tuesday            | วันอังคาร              |   |   |   |   |   |
| 8  | Wednesday          | วันพุธ                 |   |   |   |   |   |
| 9  | Thursday           | วันพฤหัสบดี            |   |   |   |   |   |
| 10 | Friday             | วันศุกร์               |   |   |   |   |   |
| 11 | Saturday           | วันเสาร์               |   |   |   |   |   |
| 12 |                    |                        |   |   |   |   |   |
| 13 |                    |                        |   |   |   |   |   |
| 14 |                    |                        |   |   |   |   |   |
| 15 |                    |                        |   |   |   |   |   |
| 16 |                    |                        |   |   |   |   |   |
| 17 |                    |                        |   |   |   |   |   |
| 18 |                    |                        |   |   |   |   |   |
| 19 |                    |                        |   |   |   |   |   |
| 20 |                    |                        |   |   |   |   |   |

Found some foreign language data you need translated? [Translate My Sheet](#) can do that in a second. Install the add-on, then either choose the source and target languages or have it auto detect the source. It can then translate your whole sheet or a selection automatically, with the new text showing up in seconds.

**Tip:** Want to translate individual cells? Just use the built-in =GOOGLETRANSLATE() function to identify languages, translate to a specific language, or detect the language and then translate.

## Geocode by Awesome Table

*to find location data from addresses*

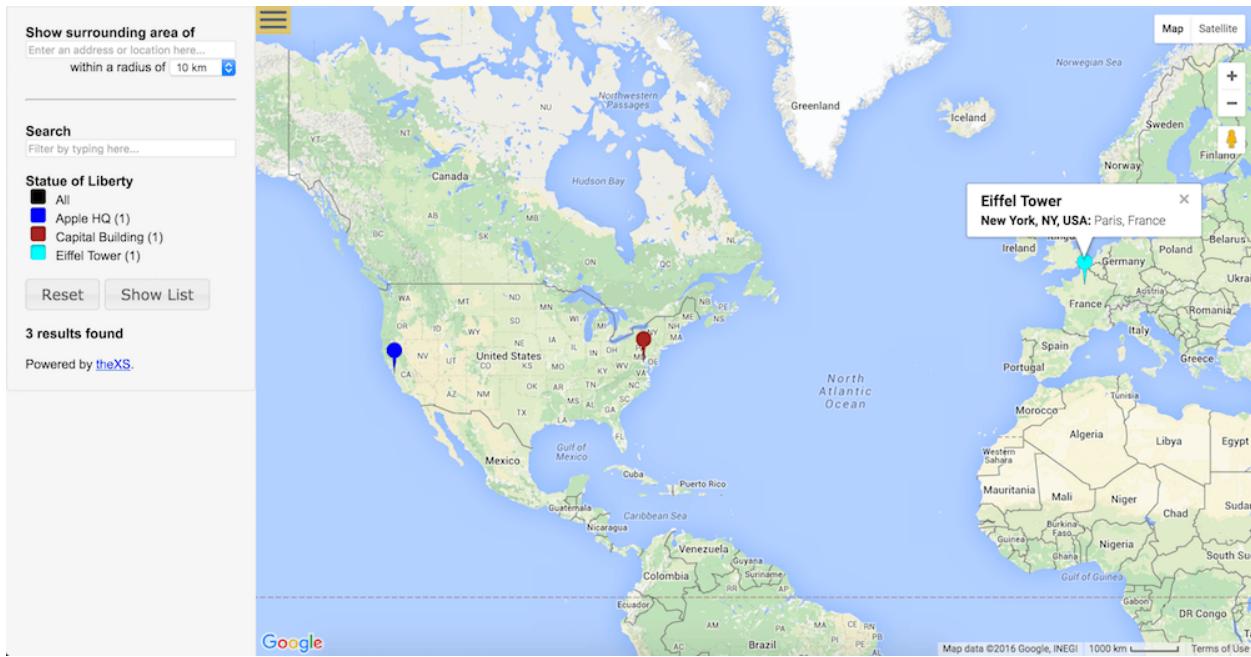
|    | A              | B                    | C                                   | D       | E                                   | F          | G          | H |
|----|----------------|----------------------|-------------------------------------|---------|-------------------------------------|------------|------------|---|
| 1  | Jessy ROUX     | jessy.roux@de...     | C/ Rosa de los V<br>11190 Benalup   | Spain   | Full Address                        | Latitude   | Longitude  |   |
| 2  | Joe BERTRAND   | joe.bertrand@de...   | Ctra. Ballén-Motr<br>23210 Guarromá | Spain   | Ctra. Ballén-Motr<br>23210 Guarromá | 7.4319427  | -3.607798  |   |
| 3  | Terry DUBOIS   | terry.dubois@de...   | Enxertos, 40                        | Spain   | Enxertos, 40<br>37542 Navasfria     | 40.2972153 | -6.8210319 |   |
| 4  | Timothée LAURE | timothée.laurent@... | Visitación de la E<br>37716 La Hoya | Spain   | Visitación de la E<br>37716 La Hoya | 40.4071921 | -5.6987269 |   |
| 5  | Gaël LEFEBVRE  | gaël.lefebvre@de...  | Salzillo, 45                        | Spain   | Salzillo, 45<br>32611 Riós Spai     | 41.9734629 | -7.3192542 |   |
| 6  | Camille ROBER  | camille.robert@de... | 54, Rue de Verd                     | France  | 54, Rue de Verd<br>40000 MONT-DE    | 43.893485  | -0.499782  |   |
| 7  | Alix THOMAS    | alix.thomas@de...    | 84, Chemin des I                    | France  | 84, Chemin des I<br>73100 AIX-LES-1 | 45.7037858 | 5.887068   |   |
| 8  | Lou BONNET     | lou.bonnet@de...     | 62, rue du Gue J                    | France  | 62, rue du Gue J<br>86100 CHÂTELL   | 46.816487  | 0.548146   |   |
| 9  | José FOURNIEF  | josé.fournier@de...  | 9, Place du Jeu c                   | France  | 9, Place du Jeu c<br>94800 VILLEJUI | 48.792716  | 2.359279   |   |
| 10 | Alex MARTIN    | alex.martin@de...    | 57, place Maurice                   | France  | 57, place Maurice<br>08000 CHARLEV  | 49.762085  | 4.726096   |   |
| 11 | Charlie DURAND | charlie.durand@de... | 6 Peachfield Roa                    | England | 6 Peachfield Roa<br>CHAPEL CROSS    | 52.3555177 | -1.1743197 |   |
| 12 | Claude MOREAU  | claude.moreau@de...  | 42 Ockham Roa                       | England | 42 Ockham Roa<br>EAST ORCHAR        | 52.3555177 | -1.1743197 |   |

Need precise GPS coordinates for addresses in your spreadsheet? [Geocode by Awesome Table](#) is the tool for you.

Just run it on a spreadsheet containing addresses, and it'll crunch their locations for you. If your address is spread across columns, you can tell Geocode which part of the address is in each column and it'll merge them into a full address. The add-on finds the latitude and longitude of each address, adds them to new columns, and offers to make a Google Maps map inside its companion app, Awesome Table. There, you can customize labels and sort through the addresses in a table.

## Mapping Sheets

*to create customized maps*



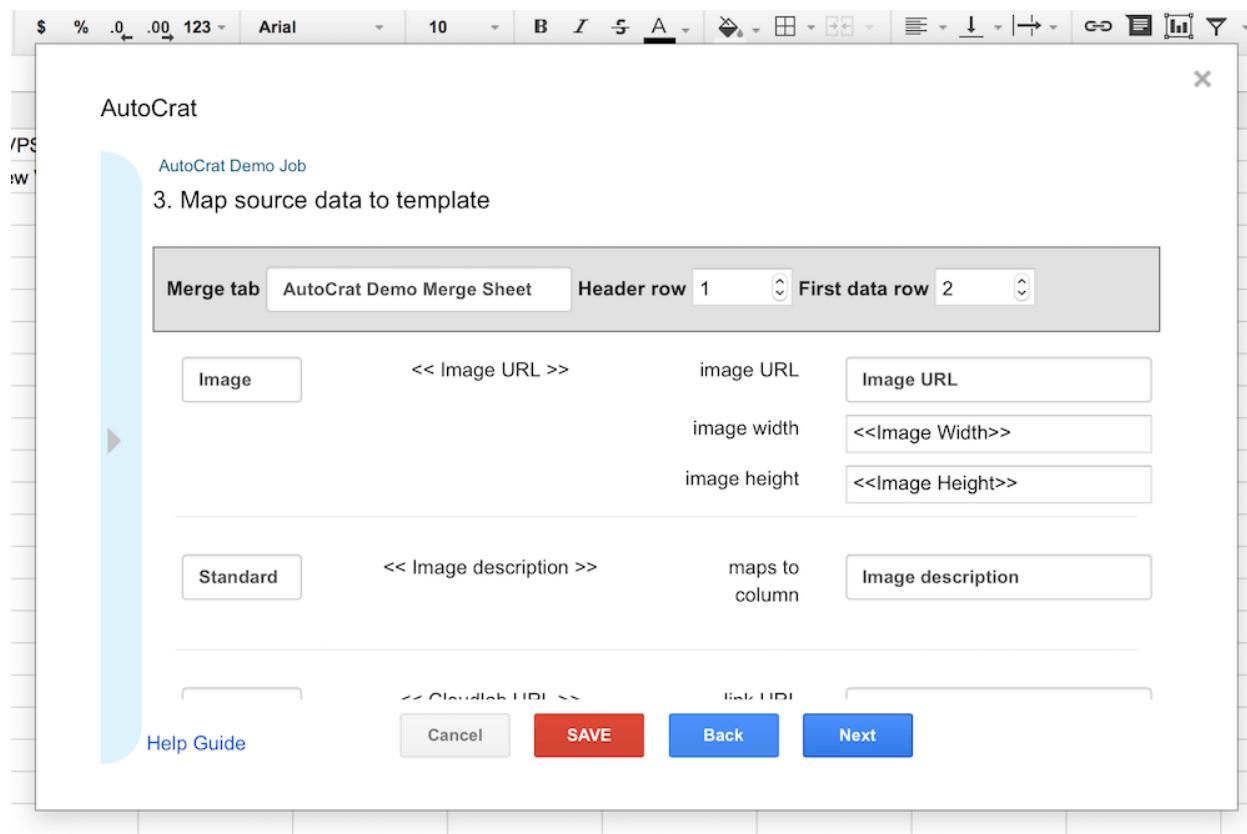
**Mapping Sheets** is a handy tool to make customized Google Maps maps that show general locations alongside specific addresses. Just enter location names and addresses—or their general area, perhaps a city or country name. Add categories or other filter data as well, if you'd like.

Mapping Sheets can then turn that into a Google Maps map, where you can filter down addresses based on location or categories from your spreadsheet. Those maps are built from .json files stored in a xsMapping folder in Google Drive. Make that folder public, then you can share the links Mapping Sheets gives you with anyone.

**Note:** Mapping Sheets works best in Google Chrome, and we couldn't get test maps to load in Safari. Additionally, it can have trouble running if you're currently logged into multiple Google accounts.

## autoCrat

*to turn your data into template documents*



Want to turn your data into beautiful documents? [autoCrat](#) is the add-on for you.

Add your data to a spreadsheet, then create your own [autoCrat template](#) document in Google Docs, with <<tags>> that reference columns in your spreadsheet. You can use any of Google Docs' font and formatting options, and even add image blocks.

Then, create an autoCrat job in your spreadsheet, make sure it's mapped the spreadsheet fields to your document correctly, and set conditions to have it only run when specific columns are filled or have certain data in them. Choose whether you want the finished document saved as a Google Doc or PDF, and add email info to send when the document is finished.

autoCrat will then automatically turn your spreadsheet data into finished documents, either with the data you've already entered or as new data is added. It even adds a link to the finished document for each row in your spreadsheet, so you can re-open them again easily later.

## Sudoku Sheets

*to make sudoku games in your spreadsheets*

|    | A             | B | C | D | E  | F | G | H | I | J | K | L | M | N |
|----|---------------|---|---|---|----|---|---|---|---|---|---|---|---|---|
| 1  | Input Grid    | 2 | 6 | 3 | 5  |   |   |   |   |   |   |   |   |   |
| 2  |               |   | 5 |   | 9  |   |   |   |   | 3 |   |   |   |   |
| 3  |               |   |   | 4 |    |   |   |   | 9 |   |   |   |   |   |
| 4  |               |   |   |   | 11 |   |   |   |   | 7 |   |   |   |   |
| 5  |               |   |   | 5 | 2  | 7 | 9 |   |   |   |   |   |   |   |
| 6  |               |   | 9 |   |    |   | 1 |   |   |   |   |   |   |   |
| 7  |               | 1 | 2 |   | 6  |   |   | 3 |   |   |   |   |   |   |
| 8  |               | 7 | 3 |   | 9  |   |   | 6 |   |   |   |   |   |   |
| 9  |               |   | 5 | 2 | 3  |   |   | 8 |   |   |   |   |   |   |
| 10 |               |   |   |   |    |   |   |   |   |   |   |   |   |   |
| 11 | Solution Grid | 2 | 9 | 6 | 3  | 8 | 5 | 4 | 1 | 7 |   |   |   |   |
| 12 |               | 4 | 5 | 8 | 7  | 9 | 1 | 6 | 2 | 3 |   |   |   |   |
| 13 |               | 3 | 1 | 7 | 4  | 6 | 2 | 8 | 9 | 5 |   |   |   |   |
| 14 |               | 5 | 2 | 4 | 9  | 1 | 8 | 3 | 7 | 6 |   |   |   |   |
| 15 |               | 6 | 3 | 1 | 5  | 2 | 7 | 9 | 4 | 8 |   |   |   |   |
| 16 |               | 7 | 8 | 9 | 6  | 3 | 4 | 1 | 5 | 2 |   |   |   |   |

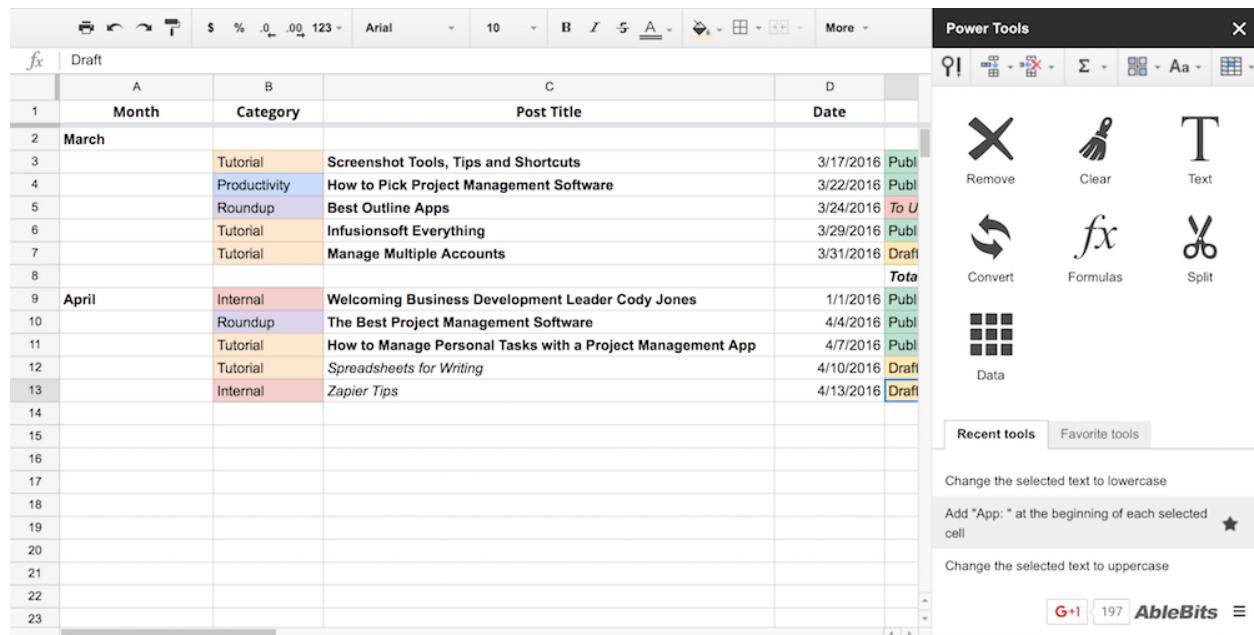
Want a break from your work? [Sudoku Sheets](#) can auto generate an easy, medium, or hard sudoku game in your spreadsheet or let you design your own puzzle. It can validate entries as you add them, and if you get stuck it can solve the puzzle automatically—even puzzles you’ve designed yourself.

## Formatting

With all the new data in your spreadsheet, chances are things are looking a bit messy. These tools will help you get rid of blank rows and columns, find and replace text better than Sheets’ default tools, and turn your sheets into beautiful tables.

## Power Tools

*to format and clean up your spreadsheets*



Search through Google Sheets' Add-ons, and one name will stand out in particular: AbleBits. They're best known for their Excel, Outlook, and Word add-ins, and put the same focus and care into their newer Google Sheets add-ons.

If you just need a tool to clean up one thing in your spreadsheet—perhaps with better find and replace or to merge sheets and remove duplicates—you can use one of their individual add-ons for that. Or just install **Power Tools**, their all-in-one add-on that lets you cleanup data, reformat it, split or combine sheets and columns, customize formulas in bulk, and more. You can choose a new function each time, or run recent or favorite tools again for an easy way to do the same cleanups again. It's one of the most polished and powerful add-ons we tried in this roundup, one improves most of Google Sheets in one tool.

Or, if you want their [individual Google Sheets tools](#), here are some of the individual add-ons that are built into Power Tools:

- [Merge Sheets](#) to combine data from multiple sheets.
- [Merge Values](#) to merge data in columns, rows, or ranges.
- [Remove Duplicates](#) to remove or mark duplicates from multiple sheets.
- [Split Names](#) to break name parts into multiple columns.
- [Random Generator](#) to fill a spreadsheet with random passwords, dates, names, or other sample data.
- [Advanced Find and Replace](#) to search through values, links, and notes, and save the results to a new table.
- [Find Fuzzy Matches](#) to find all items that are similar to your query.

**Note:** Power Tools are [currently free](#), though the add-on is expected to cost in the future.

## Table Styles

*to add color and style to spreadsheets*

The screenshot shows a Google Sheets spreadsheet with three sections: 'Task Lists', 'Gantt Charts', and 'Kanban'. The 'Task Lists' section contains five rows of data for apps like ASANA, DAPULSE, INSIGHTLY, TOODLEDU, and ALLTHINGS. The 'Gantt Charts' section contains seven rows of data for apps like Wrike, Pagico, Microsoft Project, Sandglaz, Ahal, Runrun.it, and Projectplace. The 'Kanban' section contains six rows of data for apps like Trello, MeisterTask, Blossom, Kanban Tool, LeanKit, and Kanbanery. The 'Table Styles' sidebar is open on the right, titled 'App Roundup'. It shows a preview of the table with a 'First row stripe' applied, where the first row has a blue background. Buttons for 'Save' and 'Back' are at the bottom.

|    | Name                | Designed to:                                  | Free for:                        | Pricing from: | Centralized Data: | Tasks |
|----|---------------------|-----------------------------------------------|----------------------------------|---------------|-------------------|-------|
| 1  |                     |                                               |                                  |               |                   |       |
| 2  |                     |                                               |                                  |               |                   |       |
| 3  | <b>Task Lists</b>   |                                               |                                  |               |                   |       |
| 4  | App: ASANA          | Manage team to 15 users                       | \$5/mo./user                     | ✓             | ✓                 |       |
| 5  | App: DAPULSE        | Visualize each task's progress with           | \$25/mo. for 5 us                | ✓             | ✓                 |       |
| 6  | App: INSIGHTLY      | Focus on contact 2 users                      | \$12/mo./user                    | ✓             | ✓                 |       |
| 7  | App: TOODLEDU       | Outline everything in private tasks           | \$14.99/yr./user                 | ✓             | ✓                 |       |
| 8  | App: ALLTHINGS      | Write down tasks, projects, and users, 5 proj | \$9.95/mo./user                  | ✓             | ✓                 |       |
| 9  | <b>Gantt Charts</b> |                                               |                                  |               |                   |       |
| 10 | Wrike               | Manage team at 5 users                        | \$49/mo. for 5 us                | ✓             | ✓                 |       |
| 11 | Pagico              | Work on personal and team tasks               | \$50/user                        | ✓             | ✓                 |       |
| 12 | Microsoft Project   | Outline and plan projects with fa             | \$33/mo./user                    | ✓             | ✓                 |       |
| 13 | Sandglaz            | Plan scrum sprints in kanban-style            | \$5/mo./user                     | ✓             |                   |       |
| 14 | Ahal                | Turn ideas into broad goals, data             | \$59/mo./user                    | ✓             | ✓                 |       |
| 15 | Runrun.it           | Know when your projects will act              | \$10/mo./user                    | ✓             | ✓                 |       |
| 16 | Projectplace        | Manage due date of 1 project, 5 user          | \$69/mo. for 10 u                | ✓             | ✓                 |       |
| 17 | <b>Kanban</b>       |                                               |                                  |               |                   |       |
| 18 | Trello              | Create easy to use projects                   | \$8.33/mo./user for pro features | ✓             |                   |       |
| 19 | MeisterTask         | Brainstorm projects                           | \$9/mo./user for                 | ✓             | ✓                 |       |
| 20 | Blossom             | Build clear kanban boards with a              | \$19/mo. for 5 users             | ✓             |                   |       |
| 21 | Kanban Tool         | Nest kanban col 2 users, 2 board              | \$5/mo./user                     | ✓             |                   |       |
| 22 | LeanKit             | Customize kanban 3 users, 2 board             | \$12./mo./user                   | ✓             |                   |       |
| 23 | Kanbanery           | List estimated e 2 users                      | \$22/mo. for 5 users             | ✓             |                   |       |

Applying your default color, fonts, and other design elements to new spreadsheets each time is tedious. [Table Styles](#) can save you the hassle. Just add your favorite formatting to a spreadsheet, select the formatted area, then click *Table Styles -> Create style from selection* in the Add-ons menu.

You can then customize the style, save it, and add it to new spreadsheets with a click. Table Styles can save up to three styles for now; a new Pro version will be offered in the near future for extra style options.

## Awesome Table

*to turn your data into visual tables*

The screenshot shows the AwesomeTable interface. At the top, there's a navigation bar with links for 'COMMUNITY', 'DOCUMENTATION', and 'Matthew Guay'. Below the navigation is a search bar and a 'CURRENT VIEW' button. To the right of the search bar is a 'VIEW LIST' button. On the far right, there's a '+' icon. The main area displays a grid of three book entries. Each entry includes a thumbnail image, the title, author, publisher, rating, and price. The first book is 'When breath becomes air - Paul Kalanithi' by Random House, published in 1984, rated 4.5 stars, and priced at 19,00€. The second book is '1984 - George Orwell' by Signet Classic, published in 1984, rated 4.5 stars, and priced at 18,00€. The third book is 'A Heartbreaking Work of Staggering Genius - Dave Eggers' by Vintage, published in 2000, rated 4 stars, and priced at 15,50€.

Sorting and filtering data in a spreadsheet is easy enough, especially with pivot tables, but it's not exactly pretty. [Awesome Table](#) gives you a custom interface to browse your spreadsheet data in table, maps, cards, and gantt chart visualizations.

You can customize the view, choosing the number of rows and columns, and setting other view options. Then you can share your Awesome Table design or use it to sort through and filter data with drop-downs and dynamic sliders. It's like a custom app just for viewing your spreadsheet data.

## Add Rows & Columns

*to add extra space to a sheet*

The screenshot shows a Google Sheets spreadsheet with data for posts categorized by month (March and April) and type (Tutorial, Productivity, Roundup, Internal). A context menu is open over the cell in row 5, column C, which contains the value 'Best Outline Apps'. The menu has two options: 'Number of rows above' (set to 5) and 'Ok'. The 'Ok' button is highlighted with a blue border.

|    | A     | B            | C                                       | D         | E         | F     | G      |
|----|-------|--------------|-----------------------------------------|-----------|-----------|-------|--------|
| 1  | Month | Category     | Post Title                              | Date      | Status    | Price | Budget |
| 2  | March | Tutorial     | Screenshot Tools, Tips and Shortcuts    | 3/17/2016 | Published | \$100 | \$300  |
| 3  |       | Productivity | How to Pick Project Management Software | 3/22/2016 | Published | \$80  |        |
| 4  |       | Roundup      | Best Outline Apps                       | 3/24/2016 | To Update | \$60  |        |
| 5  |       | Tutorial     | Infusionsoft E...                       | /2016     | Published | \$110 |        |
| 6  |       | Tutorial     | Manage Multip...                        | /2016     | Draft     | \$30  |        |
| 7  |       |              |                                         |           | Total:    | \$380 |        |
| 9  | April | Internal     | Welcoming Bu...                         | /2016     | Published |       |        |
| 10 |       | Roundup      | The Best Proj...                        | /2016     | Published |       |        |
| 11 |       | Tutorial     | How to Manage...                        | /2016     | Published |       |        |
| 12 |       | Tutorial     | Spreadsheets f...                       | /2016     | Draft     |       |        |
| 13 |       | Internal     | Zapier Tips                             | /2016     | Draft     |       |        |

Tired of clicking *Insert 1 Below* over and over to add space to your spreadsheet? [Add Rows & Columns](#) can help. It adds a menu to your spreadsheet where you can select to add rows or columns before or after your currently selected cell.

Enter the number of rows or columns you want to add, and a second later your data will have extra breathing room.

## Crop Sheet

*to crop a sheet automatically*

Want your spreadsheet to show only the data you need? [Crop Sheet](#) is the simplest way to clean it up. Just click *Add-ons* -> *Crop Sheet* -> *Crop to Data*, and Crop Sheet will remove *all* blank cells and rows, leaving just your data in a compact spreadsheet. Or you can have it crop to a selection to get rid of data you don't need, too.

## Remove Blank Rows

*to cleanup a spreadsheet*

[Remove Blank Rows](#) gives you a few more options than other add-ons for cleaning up your spreadsheet. It can remove or hide blank rows, watching either for rows that are fully blank or those where just specific columns are blank. If some cells includes spaces, you can choose to treat them as blank. And you can delete empty rows and columns across all of your sheets or unhide hidden rows that *do* have data.

**Remove Blank Rows Price:** Current features free; \$10 for the upcoming [Premium upgrade](#), which adds advanced tools

## Insert and Delete Cells

*to add blank cells instead of full rows and columns*

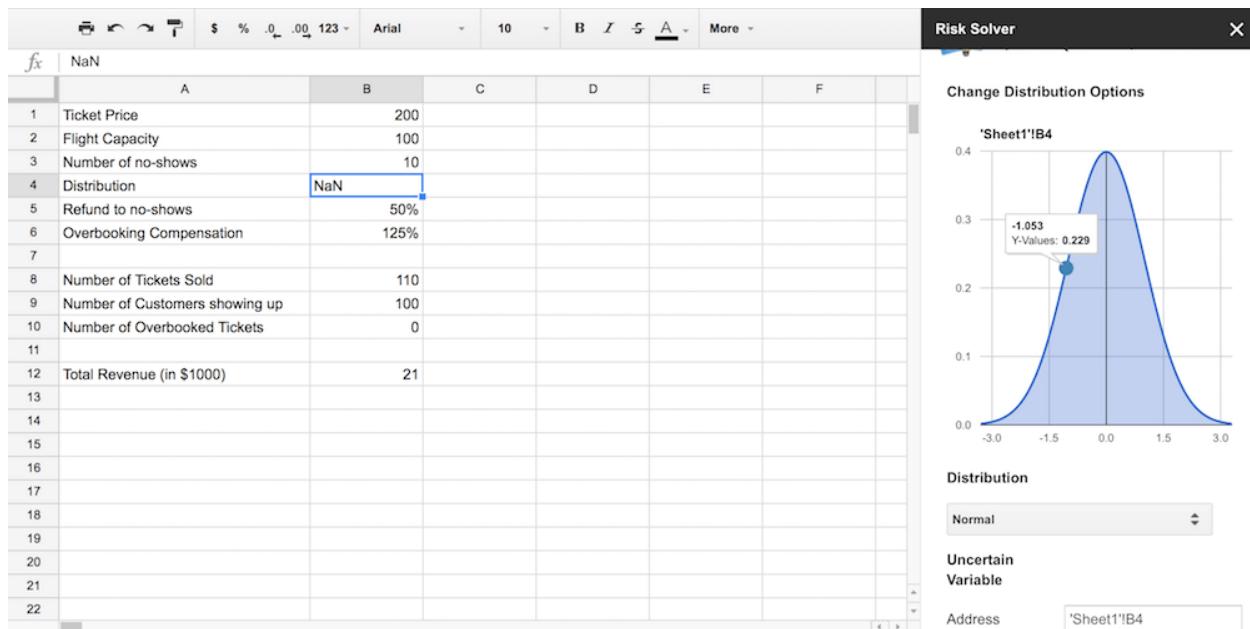
Sometimes you just need to shift some data down your spreadsheet, without adding full new rows and columns. [Insert and Delete Cells](#) can do just that, adding cells below or to the right of your existing selection. Or it can clean up in the same way, removing that number of cells up or to the left of your selection.

## Number Crunching

Spreadsheets are designed for math, and some of Google Sheets' best add-ons make it better at statistics, finance, predictions, and more. These add-ons can help you make better graphs and figure out what your numbers mean.

## Solver

*to calculate and model your data*

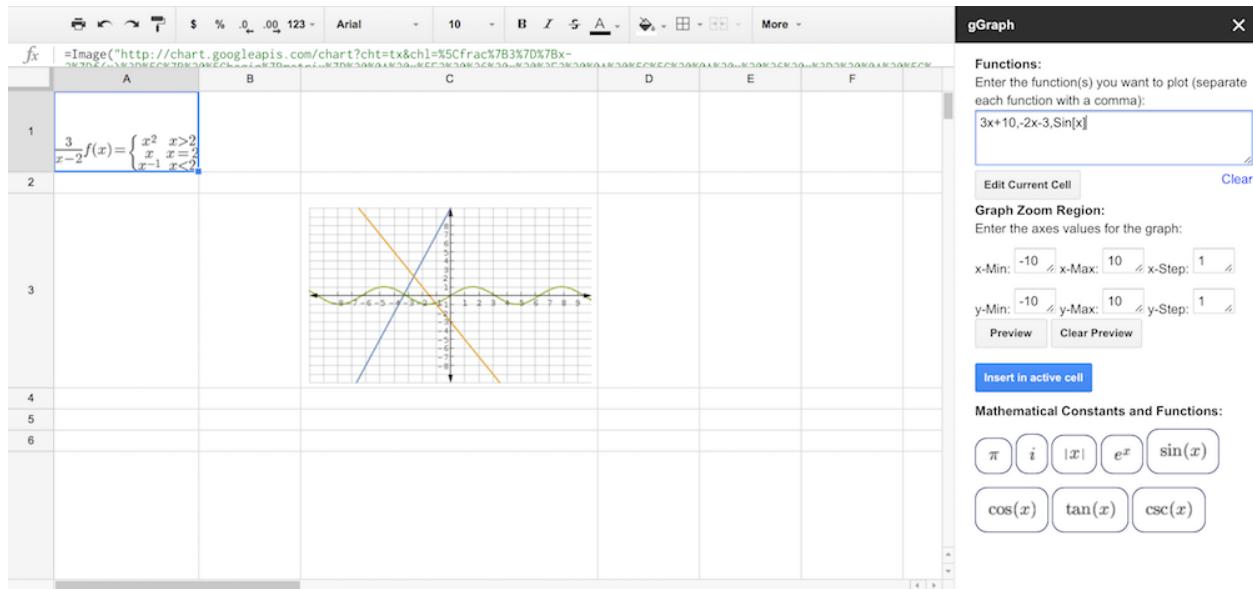


The Solver set of add-ons have been a mainstay of statistics and analytics work for years, typically with their Excel add-ons. Each of those tools are now available for Google Sheets, with [XLMinder](#) for statistical analysis, [Solver](#) for linear programming and solution optimization, and [Risk Solver](#) to perform risk analysis with Monte Carlo simulations.

Just install the add-ons, tell it how to model your data, and Solver will run the calculations on their servers and send the data back to your Google Sheets spreadsheet. Most calculations will run in the free add-on, with up to 1k Monte Carlo trials, and you can contact their team for [paid options](#) beyond that.

## g(Math)

*to plot math functions*

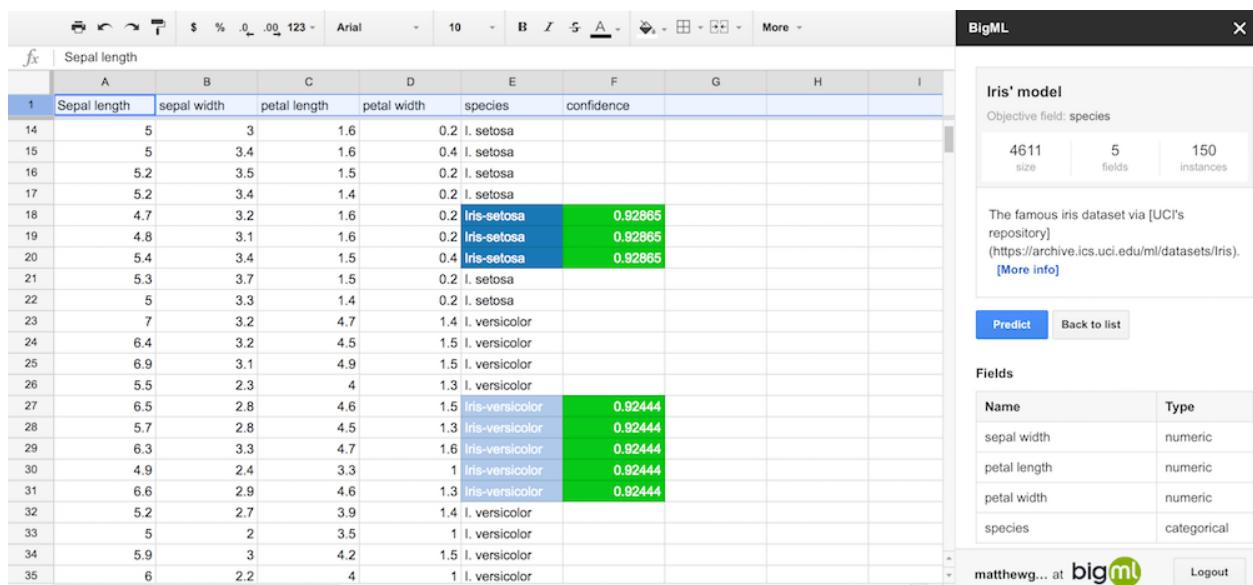


Spreadsheet graphs are designed typically to compare sets of numbers in bar and pie graphs—not for graphing mathematical formulas. [g\(Math\)](#) adds this often-needed feature, with tools to both write formulas with LaTeX formatting and plot them on an x|y axis.

It also includes a quiz tool to make personalized quizzes for students and grade them together inside your spreadsheet. That makes g(Math) a perfect add-on for students and teachers alike.

## BigML

*to create predictions from data*



[BigML](#) brings machine learning to your spreadsheet, letting you fill gaps in your data in with predicted text from your broader datasets. You'll first add your data models to BigML, then install the add-on for Google Sheets and connect it with your API key. Then run predictions on your spreadsheet data based on that model, and it can predict missing values along with a confidence value.

It's a powerful way to fill in scores, categories, and other broad data based on similarities in your data sets.

**BigML Price:** Free for 2 parallel tasks; from \$30/month for [paid plans](#) with unlimited tasks starting at 64MB each

## DukeDeploy

*to analyze data with R or Python*

Want to code your own R or Python data models and use them with your spreadsheets? [DukeDeploy](#) is the add-on you need. Create a model with your data, deploy it to DukeDeploy, then install the Google Sheets add-on and run it against your datasets or add it to cells with the new `=duke_predict()` function. It can then quickly make predictions from your data, calculating anything your models predict.

**DukeDeploy Price:** Free for 1 task per minute; from €0.20 per task with a [paid plan](#)

## Sharing and Publishing

Now that you've gathered data, organized and formatted it, and crunched your numbers, it's time to share your spreadsheets with the world. You could just save it as a PDF or hit *Share*—or you could turn it into an app or add the data to your site with these tools.

## MarkdownTableMaker

*to make a Markdown table from a spreadsheet*

The screenshot shows a Google Sheets interface with the MarkdownTableMaker add-on installed. The spreadsheet contains two main sections: 'Gantt Charts' and 'Kanban'. The 'Gantt Charts' section lists various project management tools like Wrike, Pagico, Microsoft Project, Sandglaz, Ahal, Runrun.it, and Projectplace, along with their descriptions and prices. The 'Kanban' section lists tools like Trello, MeisterTask, Blossom, Kanban Tool, LeanKit, Kanbanery, AgileZen, and KanbanFlow. To the right of the spreadsheet, a sidebar titled 'MarkdownTableMaker' displays a 'Range Only' preview of the data as a Markdown table. Below the preview are buttons for 'Save As Markdown' and 'Update'.

|    | A            | B | C                 | D                                                                                               | E                                  | F      | G | H |
|----|--------------|---|-------------------|-------------------------------------------------------------------------------------------------|------------------------------------|--------|---|---|
| 9  | Gantt Charts |   | App               | Description                                                                                     | Free for:                          | Price: |   |   |
| 10 |              | ✓ | Wrike             | Manage team at 5 users                                                                          | \$49/mo. for 5 users               | ✓      | ✓ |   |
| 11 |              | ✓ | Pagico            | Work on personal and team tasks                                                                 | \$50/user                          | ✓      | ✓ |   |
| 12 |              | ✓ | Microsoft Project | Outline and plan projects with familiar Microsoft Office tools                                  | \$33/mo./user                      | ✓      | ✓ |   |
| 13 |              | ✓ | Sandglaz          | Plan scrum sprints in kanban-style                                                              | \$5/mo./user                       |        | ✓ |   |
| 14 |              | ✓ | Ahal              | Turn ideas into broad goals, detailed schedules, and individual releases for effective projects | \$59/mo./user                      | ✓      | ✓ |   |
| 15 |              | ✓ | Runrun.it         | Know when your projects will act                                                                | \$10/mo./user                      | ✓      | ✓ |   |
| 16 |              | ✓ | Projectplace      | Manage due date 1 project, 5 user                                                               | \$69/mo. for 10 users              | ✓      | ✓ |   |
| 17 | Kanban       |   |                   |                                                                                                 |                                    |        |   |   |
| 18 |              | ✓ | Trello            | Create easy to use projects                                                                     | \$8.33/mo./user for pro features   | ✓      |   |   |
| 19 |              | ✓ | MeisterTask       | Brainstorm projects                                                                             | \$9/mo./user for                   | ✓      | ✓ |   |
| 20 |              | ✓ | Blossom           | Build clear kanban boards with a                                                                | \$19/mo. for 5 users               | ✓      |   |   |
| 21 |              | ✓ | Kanban Tool       | Nest kanban col 2 users, 2 board                                                                | \$5/mo./user                       | ✓      |   |   |
| 22 |              | ✓ | LeanKit           | Customize kanban 3 users, 2 board                                                               | \$12/mo./user                      | ✓      |   |   |
| 23 |              | ✓ | Kanbanery         | List estimated 2 users                                                                          | \$22/mo. for 5 users               | ✓      |   |   |
| 24 |              | ✓ | AgileZen          | Organize projects on simple kanban                                                              | \$99/mo. for 10 users and projects | ✓      |   |   |
| 25 |              | ✓ | KanbanFlow        | Get work done on users and pro                                                                  | \$5/mo./user                       | ✓      |   |   |

If you typically write with [Markdown](#) formatting, [MarkdownTableMaker](#) is a handy tool. It can convert a section of your spreadsheet—or the whole sheet—into a Markdown formatted table.

It makes the first row the header, and only includes the plain text—no formatting, links, or images are included. If those are needed, just write your spreadsheet cells with Markdown-style links and formatting first.

## AppSheet

*to turn your spreadsheet into an app*

The screenshot shows the AppSheet interface. On the left, there's a sidebar with tabs for Info, Data, UX, Behavior, Users, and Manage. Below these are buttons for Share it!, Deploy it!, Copy app, and Learn | Ask. The main area has tabs for Tables, Column Structure, and Slices. Under Tables, there's a table with columns for Column Name, Column Type, and Type Qualifier. The columns are labeled: \_RowNumber, Number, { "MaxValue": null, "MinValue": null, }; Buy!, Url, { "IsHyperLink": false, "Valid\_If": null, }; TITLE, Text, { "Valid\_If": null, "Show\_If": null, }; DESCRIPTION, LongText, { "Valid\_If": null, "Show\_If": null, }; PRICE, Price, { "CurrencySymbol": "\$", "DecimalDigits": 2, }; and CURRENCY\_CODE, Text, { "Valid\_If": null, }. To the right, there's a preview of a mobile app titled 'ECommerce Store' showing products like 'Blue Beauty Kum...' and 'Turquoise and BI...'. At the bottom of the preview are buttons for Share, Showcase, and Sync.

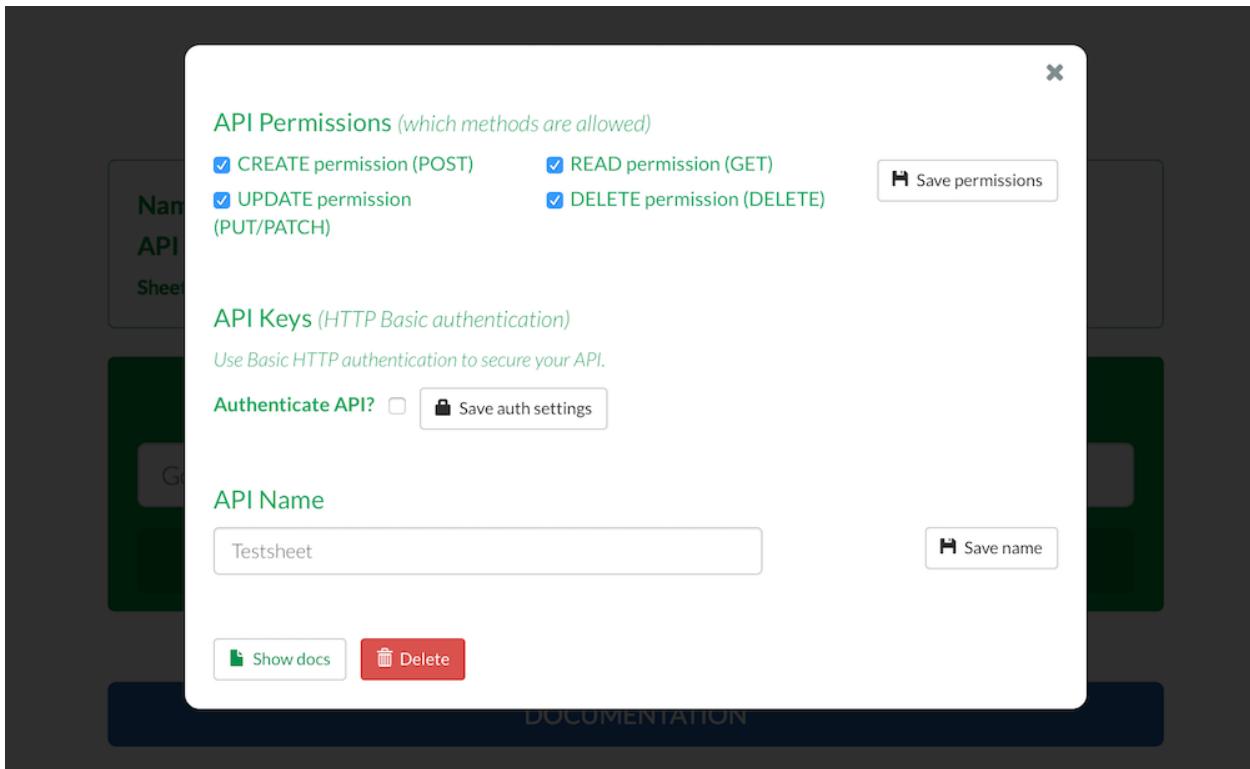
[AppSheet](#) makes building a new mobile app as simple as adding your data to a spreadsheet. Just list all of your data—contacts, products, inventory, property, or anything else you need to track in an app—to a spreadsheet, and connect it to AppSheet.

There, you can customize the columns that are displayed, pull in images from [Dropbox](#) and other file storage apps, chart locations on maps, and tweak its design to fit your branding. You can even add forms to gather text, images, and signatures on the go for a full [mobile data collection tool](#) built around your spreadsheet.

**AppSheet Price:** Free to develop apps; once published, from \$1/month per user for [paid plans](#) for unlimited apps and core features

## Sheetsu

*to build an API from your spreadsheet*



Want to build your a custom app from your spreadsheet or connect it to other apps with an API? [Sheetsu](#) can do just that. Just enter a Google Sheets spreadsheet link, and it'll turn your spreadsheet into an API.

You can set your API permissions to allow GET, POST, DELETE, and/or PUT/PATCH to view or add data to your spreadsheet through the API. That way, your apps can either get new items you add to your spreadsheet automatically, or they can dynamically update and add new entries to your spreadsheet.

**Sheetsu Price:** Free for 1 API and 300 requests per month; from \$8/month for [paid plans](#), which add more APIs and requests per month

**Tip:** Learn more about APIs with Zapier's free eBook, [An Introduction to APIs](#).

## Export Sheet Data

*to turn your sheet into XML or JSON data*

Want to import your spreadsheet data into an app that doesn't support .csv files? [Export Sheet Data](#) is the tool you need. It'll turn your data into XML or JSON files, for a simple way to create structured data without having to hand-edit code.

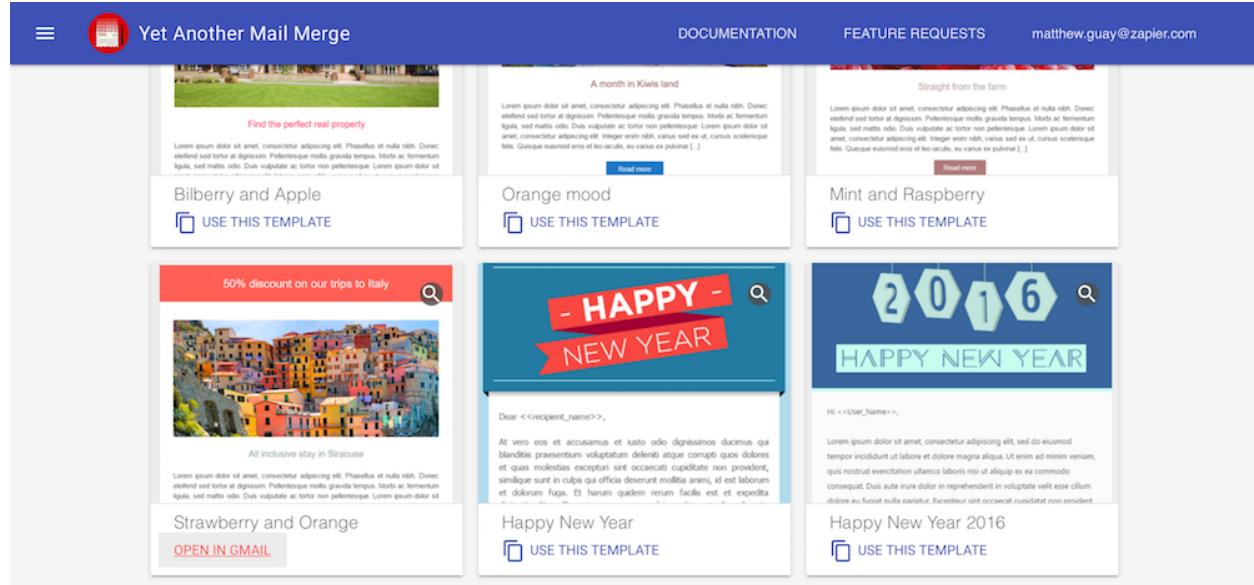
This comes in handy if you want to import your spreadsheet to your wiki in JSON format or need to import your data into a database that doesn't support .cvs.

## Email and Communication

Spreadsheets are also a great tool for sending personalized messages to an entire email list or managing your outreach. Google Sheets can handle your mass email needs—with these add-ons.

### Yet Another Mail Merge

*to import contacts and send template messages*



Yet Another Mail Merge is a one-stop-shop to send emails based on templates to your contacts. It can first import contacts from [Google Contacts](#) or [Salesforce](#) into your spreadsheet. Then you'll need an email template in Gmail, which you can either make from one of Yet Another Mail Merge's pre-made graphical templates or can hand-design using <>fields<> to merge in names and other info.

Save that template as a draft email in Gmail, then run Yet Another Mail Merge, and it can send personalized emails to everyone on your spreadsheet. Have it send you a test message to make sure everything looks perfect, schedule message sending for later, and track opens and clicks in one place.

**Yet Another Mail Merge Price:** Free for 50 emails per day; from \$24/year for [paid plans](#), which add scheduled delivery and sending up to 400 emails per day

**Note:** Don't delete your template draft email from Gmail, as Yet Another Mail Merge will need that draft again every time you send emails from your spreadsheet.

### Gmail Scheduler

*to use a spreadsheet to schedule emails*

**EMAIL SCHEDULER FOR GMAIL**

| A                         | B                                                        | C                                                              |
|---------------------------|----------------------------------------------------------|----------------------------------------------------------------|
| EMAIL SCHEDULER FOR GMAIL |                                                          |                                                                |
| Date                      | Description                                              | Debug Log                                                      |
| Wed, Jun 22 at 1:39 AM    | This sheet will log all the activity of Email Scheduler. | Please do not delete or edit this sheet.                       |
| Wed, 22 Jun 1:39 AM       | Scheduled: Strawberry and Orange                         | Send on Thu Jun 23 2016 00:30 (ICT) [RRULE:FREQ=DAILY;COUNT=1] |
| Wed, 22 Jun 1:39 AM       | Trigger created for sending emails                       |                                                                |
| Wed, 22 Jun 1:40 AM       | Scheduled: Stuff                                         | Send on Thu Jun 23 2016 01:30 (ICT) [RRULE:FREQ=DAILY;COUNT=1] |
| ...                       |                                                          |                                                                |

**Gmail Scheduler** does exactly what it says: schedule your Gmail emails. Write your emails in Gmail—complete with the recipient and any formatting or attachments you want—and save them as drafts.

Then open a Google Sheets spreadsheet and open the Gmail Scheduler add-on. Choose the draft email from the drop-down, pick a time for it to be sent, and click *Schedule*. It then logs the time and other details about scheduled messages to the spreadsheet so you can look back to see what's been sent.

**Gmail Scheduler Price:** Free for core features; \$29.99 for the [Premium version](#) to send emails on a schedule or write recurring emails.

## Mail Merge with Attachments

**Untitled spreadsheet**

File Edit View Insert

First Name

|         |       |
|---------|-------|
| Barack  | Obama |
| Matthew | Guay  |
| Marissa | Daily |
| Jason   | Fried |
| Alison  | Grove |
| Matthew | Guay  |
| Pieter  | Leve  |
| Patrick | McK   |
| Tyler   | Roel  |
| Danny   | Schr  |

Select File Attachment(s)

\*.pdf

Name Last modified

- 160401\_Contently\_Ebook\_Methodology\_FINAL\_v2.pdf May 31, 2016
- timelog.pdf Apr 27, 2016
- AutoCrat 3.0 Help Jun 17, 2016
- [32216] CloudConvert Mar 23, 2016
- How Zapier Writes Books Aug 12, 2015

Select Cancel

Comments Share

Merge Status

Mail Merge Sheet1 Mail Merge Logs

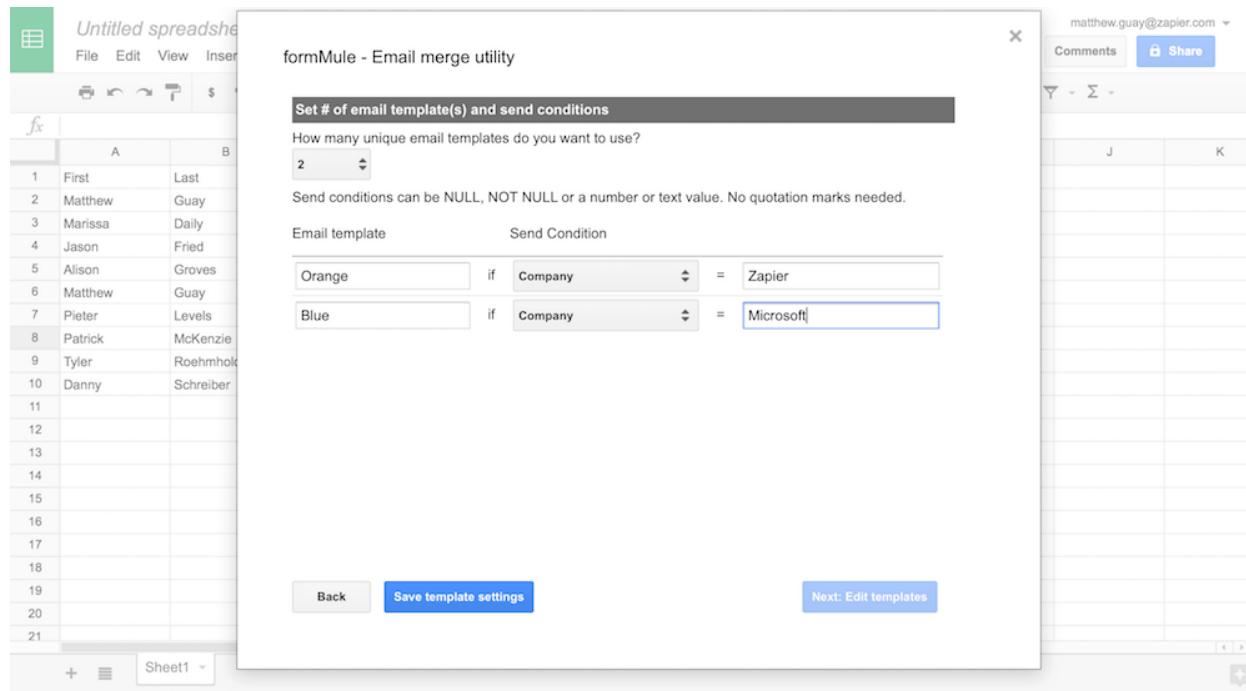
Need to send files to a number of recipients? [Mail Merge with Attachments](#) lets you send any file in Google Drive as an email attachment from within your spreadsheet. Import your Google Contacts—or list your own emails—then select a file from Google Drive that you want to send to the list. You can even select different files for each recipient, if you want.

Then, write a template plain text or HTML email—or choose an existing draft message in Gmail—and Mail Merge will send the messages along with your file attachments. It even includes a companion [HTML editor](#) to help you create an email template, if you'd like.

**Mail Merge Price:** Free for 50 emails per day; \$29.99 for the [Premium version](#) to track and send 100 emails per day with Gmail accounts or 1.5k emails per day with a paid Google Apps account

## formMule

*to send conditional emails*



Need to vary your email for different types of recipients? [formMule](#)'s the email add-on you need. You can add up to 15 template emails, with conditions for which one to send—perhaps to send a different email to those who've purchased different products from your company.

Templates can be HTML or plain text and can include any of your spreadsheet fields for personalization. There's even a language field to automatically translate the email, if you want, and a scheduler to send emails automatically when a form is filled out or on a timed schedule.

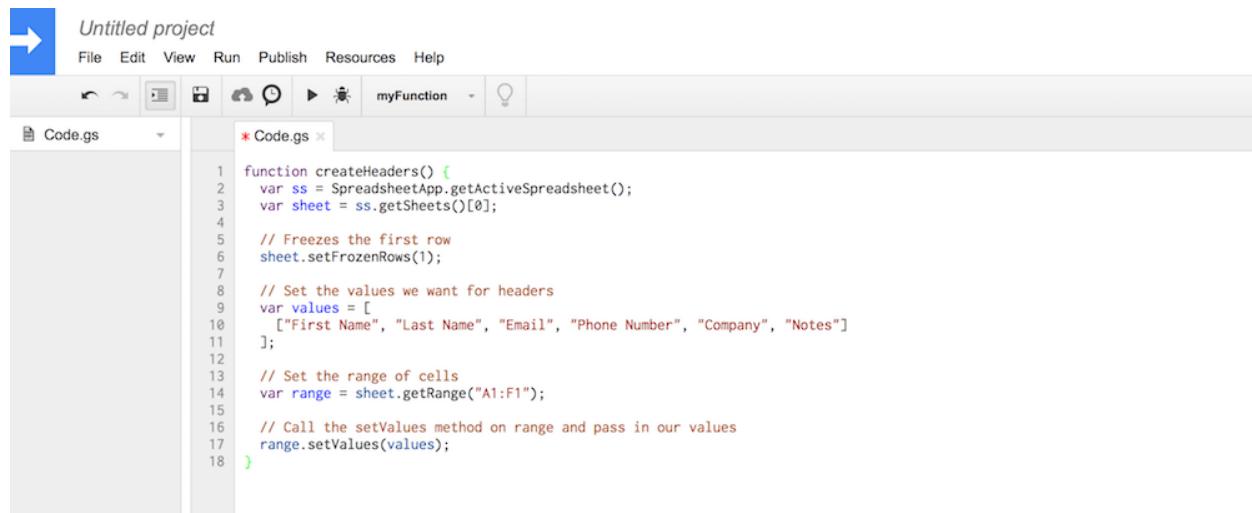
And, as a bonus, it also adds new `=RANGETOTABLE()` functions to Google Sheets which can turn your spreadsheet data into an HTML table in a click. That's much simpler than merging cells and hand-coding HTML tables from your spreadsheets.

## Build Your Own Google Sheets Add-ons

Still haven't found the spreadsheet tool you've been looking for? Don't worry. With just a bit more work, you can build your own Google Sheets add-ons, either with some code or with pre-made Zapier integrations.

Here's how:

### With Google Apps Script



```

function createHeaders() {
 var ss = SpreadsheetApp.getActiveSpreadsheet();
 var sheet = ss.getSheets()[0];

 // Freezes the first row
 sheet.setFrozenRows(1);

 // Set the values we want for headers
 var values = [
 ["First Name", "Last Name", "Email", "Phone Number", "Company", "Notes"]
];

 // Set the range of cells
 var range = sheet.getRange("A1:F1");

 // Call the setValues method on range and pass in our values
 range.setValues(values);
}

```

If you've ever written JavaScript code—or have a some time to learn the basics of code—you can create your own full-featured Google Sheets add-ons, and even publish them to the Google Sheets Add-Ons Gallery if you'd like. All you need is the *Script Editor*, tucked away in the *Tools* menu in Google Sheets.

There, you can write JavaScript-based scripts to add custom menus, sidebars, and functions to Google Sheets. For a quick guide to getting started, jump to chapter 7 for Zapier's [Google Apps Script Tutorial](#) with step-by-step instructions on adding header rows, organizing contacts, and sending automated emails from Google Sheets with your own handwritten scripts. Or use Google's own [Scripts Guide](#), which teaches you how to build a quick add-on for customized spreadsheet forms. And if you have existing Excel VBA macros you want to use in Google Sheets, [this guide from Bruce Mcpherson](#) will help you learn how to convert them.

Want to share your new extension with others? You can simply share the script code or [publish the add-on to Google Apps](#) to share it—with just your team or with any Google Sheets user.

### With Zapier

For a simpler option, use an app integration tool like [Zapier](#) to build connections to your favorite apps and do work in your spreadsheets automatically. Zapier can watch your Google Sheets account for new spreadsheets, worksheets, or new and updated rows. It can also search spreadsheets for existing data, as well as add and update rows in a spreadsheet. Zapier can then copy data to and from your spreadsheet and the other apps you use for a seamless workflow.

Here are some of the most popular Google Sheets integrations.

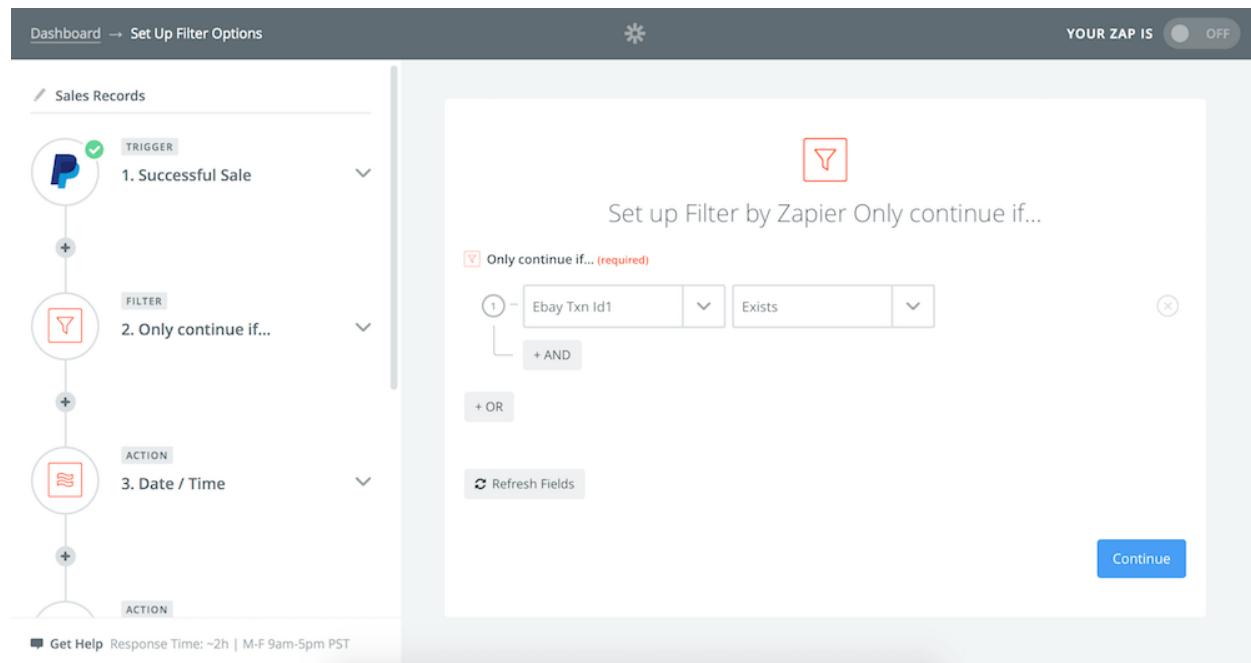
### Zapier Integrations:

- Create Google Calendar events from new Google Sheets spreadsheet rows
- Create Trello cards from new Google Sheets spreadsheet rows
- Send a Gmail email for new Google Sheet spreadsheet rows
- Save Twitter mentions to a Google Sheets spreadsheet
- Post a new message to Slack whenever a Google Sheets row is updated

Or check out [Zapier's Google Sheets Integrations page](#) for other popular options.

You can also create a custom integration for Google Sheets and your other favorite apps and services.

Say you want to save eBay sales from PayPal to a Google Sheets spreadsheet, and then print out an invoice from that data with Google Cloud Print. You could do all that with a Zapier integration.



Start out with a PayPal *Successful Sale* trigger, and add a filter to watch for eBay sales. Perhaps add a *Formatter* action to convert the date from 05:53:24 Jun 1, 2016 PST to an easier-to-read format like Wednesday, June 1st, 2016.

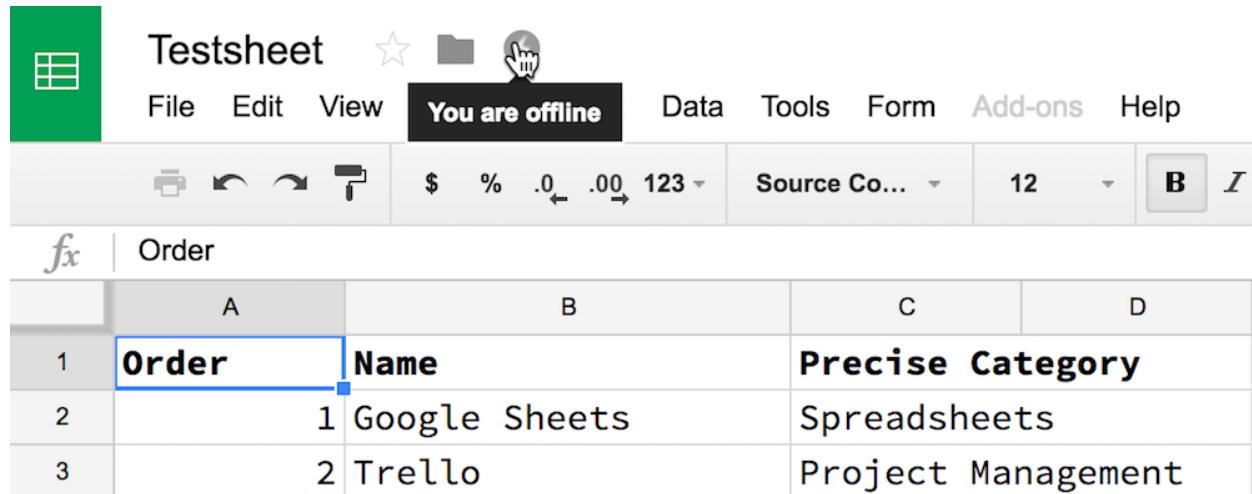
Now, let's save that sale data to your spreadsheet. Just make a new Google Sheets spreadsheet for your sales, and add columns for your customers' name and email, the item they ordered, PayPal's fees, and anything else you'd like to track. Then, add a Google Sheets *Create Spreadsheet Row* action to the Zap, clicking the + icon beside each spreadsheet row to add the correct data from PayPal.

Then, setup your printer with Google Cloud Print, and add a Cloud Print action to your Zap. Type in the text you want to print out in your shipping invoice, and click the + icon on the right to add items from your sale

to the text.

Repeat those steps for anything else you'd your Google Sheets integration to do, and within minutes you'll have your spreadsheet connected to your favorite apps, formatting text and sorting data the way you want.

## How to Work Offline in Google Sheets



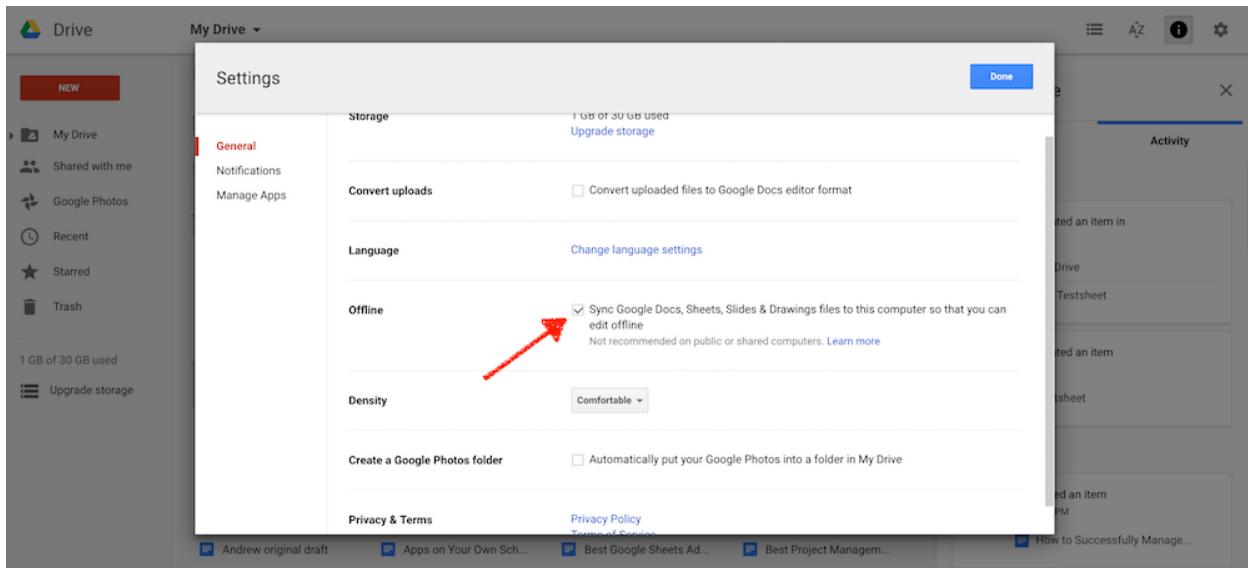
The screenshot shows a Google Sheets interface titled "Testsheet". At the top, there's a green icon with a grid, followed by the sheet name "Testsheet" and some status icons. A prominent black button in the center of the toolbar says "You are offline". Below the toolbar, there's a menu bar with "File", "Edit", "View", "Data", "Tools", "Form", "Add-ons", and "Help". To the right of the menu are various input and display controls like a printer icon, a refresh arrow, a font size dropdown set to 12, and bold/italic buttons. The main area shows a table with three rows:

|   | A            | B               | C                       | D |
|---|--------------|-----------------|-------------------------|---|
| 1 | <b>Order</b> | <b>Name</b>     | <b>Precise Category</b> |   |
| 2 |              | 1 Google Sheets | Spreadsheets            |   |
| 3 |              | 2 Trello        | Project Management      |   |

For all of the great features add-ons bring to Google Sheets, there's still one tiny thing where it still has a disadvantage to Excel: working offline. As a web app, Google Sheets runs in your browser and only works when you're offline.

That is, unless you install the [Google Sheets Chrome extension](#), which comes pre-installed with most copies of Chrome. Once it's installed, you'll need to enable offline mode for it to work.

While you're online, just open your [Google Drive settings](#) (under the gear icon at the top right of the page), and check the box beside *Sync Google Docs, Sheets, Slides & Drawings files to this computer*.



Give it a few minutes, then open the spreadsheet you need to work on and it should continue to be editable when you're offline. In fact, you can open Google Drive while offline just by entering `drive.google.com` in Chrome's address bar, then select any of your recent documents to open and edit them.

There's only one catch for both Sheets offline: All add-ons are disabled while offline. So, you can edit and view your documents and spreadsheets, but will need to wait until you're back online to use add-ons to format text, gather data, and more.

**Tip:** A similar trick works on Google Sheets' mobile apps, too. Just install the Google Sheets app on your iOS or Android device, open its settings, and select *Make recent files available offline* to view or edit them when you're not connected to the internet.

## Go Make Google Sheets Your Own!

Spreadsheets aren't just meant to be good tools for a wide range of tasks—they're often the *best* tool for certain types of tasks. Take a few minutes to install versatile and powerful Google Sheets add-ons to make it your perfect digital sidekick.

Or, maybe it's time to build your own add-ons instead. You'll learn how to do that with Google sheets in the next chapter, with detailed tutorials on how to format spreadsheets, create contacts, and send emails right from your spreadsheet with custom code that works the way you want.

---

Enjoy? Read and share this chapter online: [zpr.io/uB9F](http://zpr.io/uB9F)

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Written by Zapier content marketer [Matthew Guay](#).

# Chapter 7: Automate Google Sheets—An Introduction to Google Apps Script



Google has built some of the most effective productivity tools on the planet. With Gmail, Hangouts, Chrome, Docs, Sheets, and more, odds are you use Google products for at least some of your work. There's also a good chance, though, you're missing out on one of Google's most powerful tool: [Google Apps Script](#).

Apps Script lets you build powerful add-ons for Google Apps with snippets of JavaScript code. Take a few minutes to code a script, and you can mold apps like Gmail, Google Sheets, and Google Drive into custom tools for your business. A script could, for example, automatically send email thank-yous with Gmail and a Google spreadsheet, or automatically add new people from a spreadsheet to Google Contacts. (Don't worry: We'll cover both of those examples in-depth.)

To start, let's cover the basics of Apps Script and how you can start using it—even if you're not a developer or have only limited JavaScript experience.

**Tip:** If you're new to Apps Script, be sure to check out [Google's documentation](#) in addition to this guide. Google does a terrific job of laying the groundwork, so it's a great place to start. Then come back here to build your own add-ons.

---

## Getting Started with Google Apps Script

There are two main types of scripts you can use with Google Apps: *standalone* and *bound* scripts.

### 1. [Standalone scripts](#)

Standalone scripts are not attached to any particular app in your Google account. Instead, think of them as *macros that perform system-wide functions*.

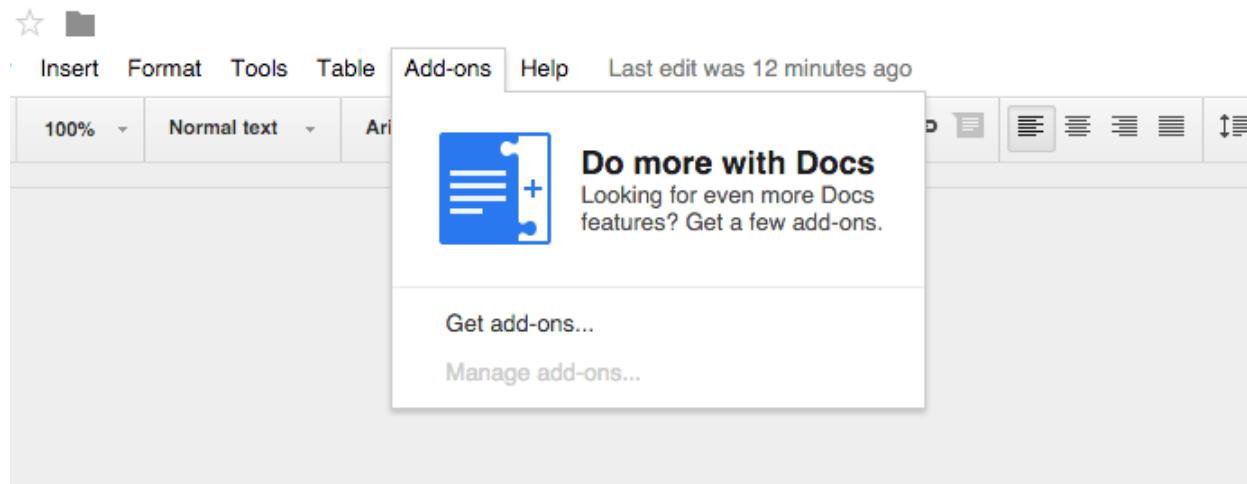
A standalone script could [search your Google Drive for all items with the name ‘untitled’](#) (the default name Google gives to files when the name isn’t specified), for example, as a handy way to keep your Google Drive clutter-free.

You’ll see standalone scripts alongside your other Google Drive files, and each file contains JavaScript for your particular function.

## 2. Bound scripts

Bound scripts *extend the functionality of a certain file* in one of your Google apps. They perform specific actions directly to that particular file.

For example, you could create a script bound to a specific Google Sheet that [checks for and removes duplicate rows](#).

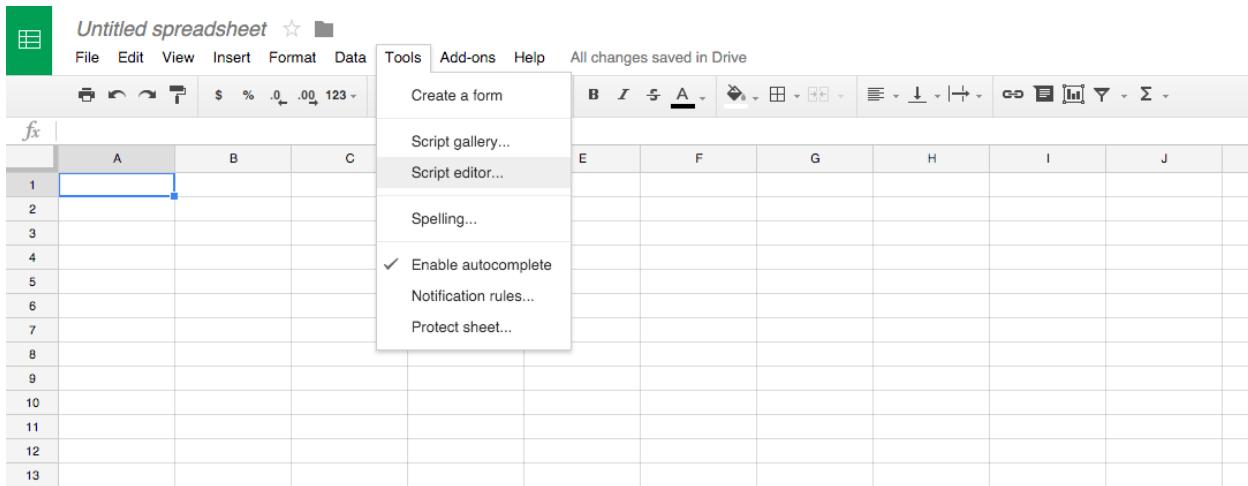


Google lets you publish both standalone and bound scripts for others to use. In fact, the “Add-ons” menu in a Google Docs document includes dozens of scripts—to translate your document, format tables, add formulas and more—that have been converted into extensions and shared by others.

This chapter’s tutorials will focus on bound scripts—the most common ones in the Google Docs Add-ons menu. First, let’s get our feet wet by building a simple bound script that fills in header values in a spreadsheet automatically.

## Building your First Script

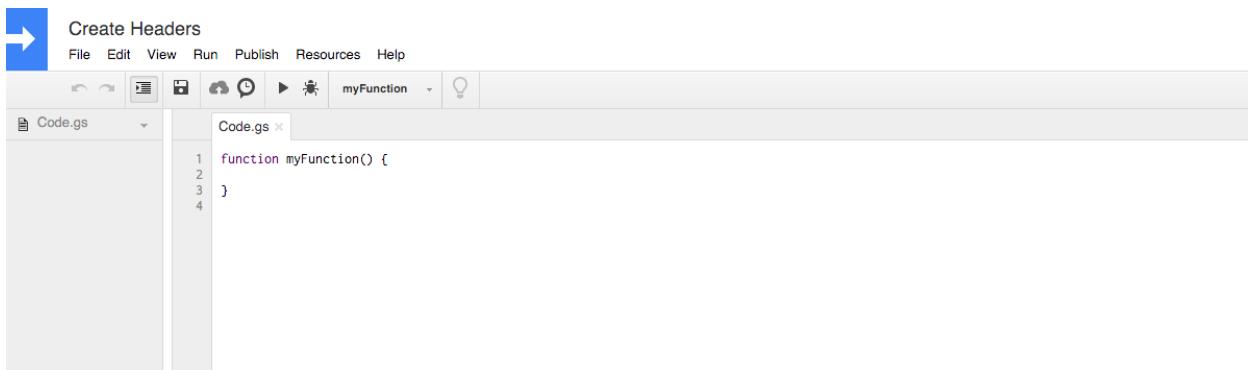
To get started, visit [sheets.google.com](https://sheets.google.com) and create a new sheet. Under the “Tools” menu in your new sheet, click the option for “Script editor...”



That'll open a new tab with a blank script file: the Script Editor. It's an easy way to create both standalone and bound scripts without leaving Google Apps.

In this case, since we opened a new sheet first and *then* opened the Script Editor, we're creating a bound script; when we run it, the script will only affect the new file we opened. By contrast, standalone scripts are created by visiting [script.google.com](https://script.google.com) directly.

When we open the Script Editor from within a Google document for the first time, it automatically creates a new “Untitled project” for us. Let’s change that to something a bit more descriptive, like “Create Headers.”



Now, it’s time to write a bit of code. On a basic level, Apps Scripts are a combination of JavaScript functions—blocks of code designed to perform a certain task. Often there’s functions you can copy and use on your own with minimal editing, which is what we’ll use here.

Google has given us a starting block that looks like this:

```

1 function myFunction() {
2
3 }

```

This will be the framework for our first function. Just like our project title, we want our function name to describe what the code is actually doing. Let’s change the function name from `myFunction` to `createHeaders`, since this script will be creating column headers for us.

```
1 function createHeaders() {
2
3 }
```

Now, we need to put some code inside those curly braces (the { } characters you'll notice after the function name) that will make this function do what we want. To get this code, let's head over to [the documentation for Google Sheets](#). This documentation tells you exactly how you can manipulate Google Sheets with Apps Script.

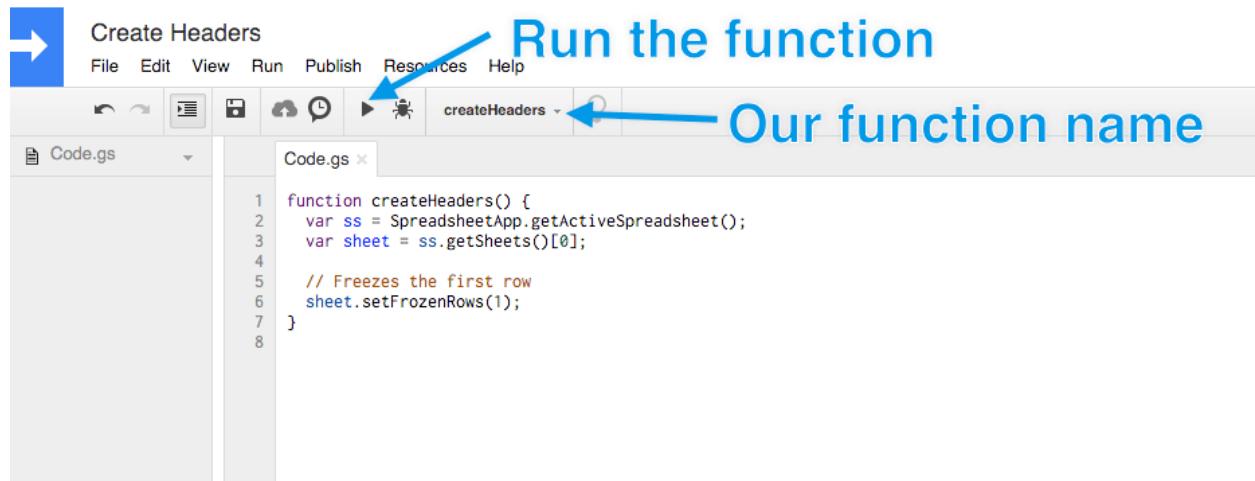
If you scroll down, you'll notice a method called `setFrozenRows` that we can use. If we're setting up column headers in the top row of the spreadsheet, it would be helpful to freeze that row so it's always available, no matter how far we scroll down. Google provides the following example:

```
1 var ss = SpreadsheetApp.getActiveSpreadsheet();
2 var sheet = ss.getSheets()[0];
3
4 // Freezes the first row
5 sheet.setFrozenRows(1);
```

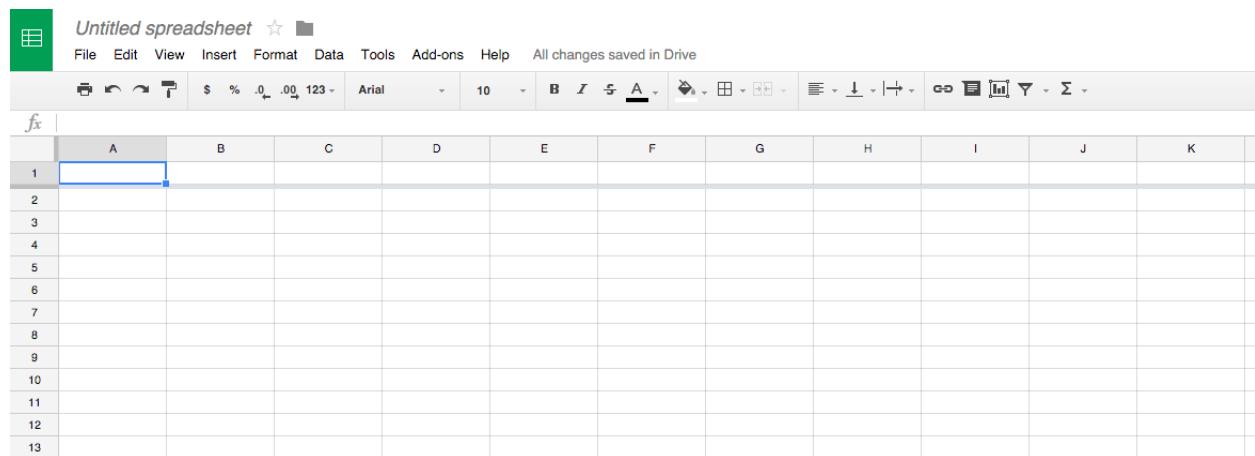
Let's copy that code and use it in our function:

```
1 function createHeaders() {
2 var ss = SpreadsheetApp.getActiveSpreadsheet();
3 var sheet = ss.getSheets()[0];
4
5 // Freezes the first row
6 sheet.setFrozenRows(1);
7 }
```

Click the disk icon in the toolbar or press the *Save* keyboard shortcut (Command+S on a Mac or Ctrl+S on Windows) to save the project. Now, it's time to run the function. In the toolbar, you should see a play icon just to the left of a menu item with the function name we set (`createHeaders`). For now, we only have one function to run. However, if you had multiple functions in your code project, you could individually select the function you want to run.



Click the play icon to run the function. You'll be prompted with some authorization dialogue, but once you authorize the script to run, jump back to your Google Sheet. The first row should be frozen!



Now, we need to extend our function to actually set the values of the header row. To do that, let's go back to the [Google Sheets documentation](#) to find some more code.

We need some way to set the values for a particular range of cells. On the left-hand side of the Google Sheets documentation, under “Classes”, you’ll notice we have a [Range class](#).

Clicking on that reveals a selection of methods we can use on a specific range of cells. If you scroll down a bit, you’ll find `setValues(values)`, which inserts a set of values into a range; that seems to match what we need! Here’s a portion of the example provided:

```

1 var ss = SpreadsheetApp.getActiveSpreadsheet();
2 var sheet = ss.getSheets()[0];
3
4 // The size of the two-dimensional array must match the size of the range.
5 var values = [
6 ["2.000", "1,000,000", "$2.99"]
7];
8
9 var range = sheet.getRange("B2:D2");
10 range.setValues(values);

```

For a non-engineer, that's a lot of code! Here's the part we're most interested in:

```

1 var values = [
2 ["2.000", "1,000,000", "$2.99"]
3];
4
5 var range = sheet.getRange("B2:D2");
6 range.setValues(values);

```

This might look a bit foreign if you're not familiar with JavaScript, but in short, the code creates two variables.

- Values, set by `var values =` stores the values 2.000, 1,000,000, and \$2.99.
- Range, set by `var range =` stores the range of cells B2 to D2 based on the sheet we're working with.

From there, we can call the `setValues` method on the range variable we set and give it the `values` variable. This tells our function to assign our Values (2.000, 1,000,000, and \$2.99) to the cells defined in Range (B2 through D2).

Instead of adding random numbers to our spreadsheet, let's say we wanted to create a contact list. We might want the following headers:

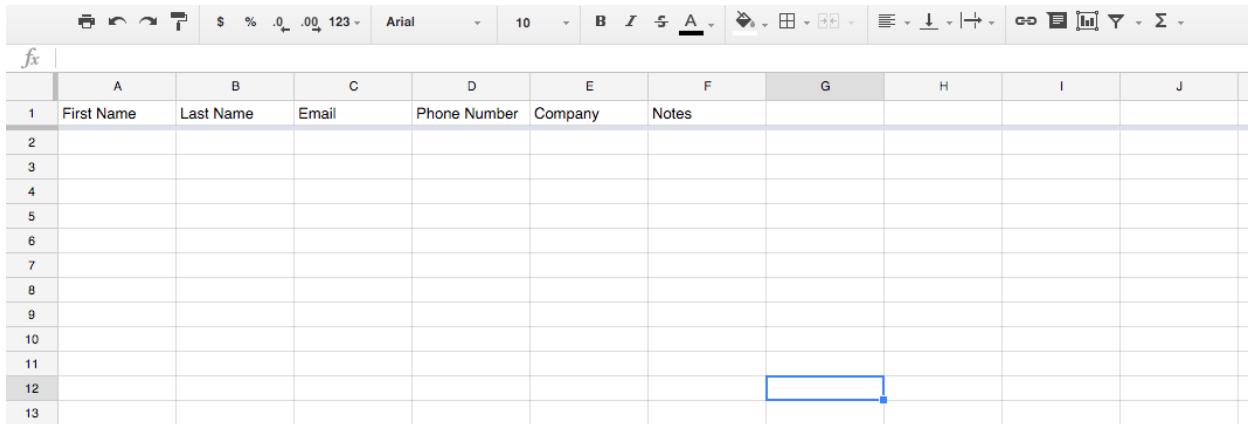
- First Name
- Last Name
- Email
- Phone Number
- Company
- Notes (Where did we meet this person? Is there anything special we need to remember?)

These would be our 'values'. Since there are six different values, our 'range' needs to be six cells wide (like A1 : F1). We also want to use the first row of the spreadsheet.

After updating example code and changing the range and values, add it to your `createHeaders()` function. You should end up with something like this (the `//` denotes a comment, so you can make inline notes about what your code is supposed to do):

```
1 function createHeaders() {
2 var ss = SpreadsheetApp.getActiveSpreadsheet();
3 var sheet = ss.getSheets()[0];
4
5 // Freezes the first row
6 sheet.setFrozenRows(1);
7
8 // Set the values we want for headers
9 var values = [
10 "First Name", "Last Name", "Email", "Phone Number", "Company",
11 "Notes"]
12];
13
14 // Set the range of cells
15 var range = sheet.getRange("A1:F1");
16
17 // Call the setValues method on range and pass in our values
18 range.setValues(values);
19 }
```

If we run the function again and flip back over to our spreadsheet, we should see the values set in the header row!



|    | A          | B         | C     | D            | E       | F     | G | H | I | J |
|----|------------|-----------|-------|--------------|---------|-------|---|---|---|---|
| 1  | First Name | Last Name | Email | Phone Number | Company | Notes |   |   |   |   |
| 2  |            |           |       |              |         |       |   |   |   |   |
| 3  |            |           |       |              |         |       |   |   |   |   |
| 4  |            |           |       |              |         |       |   |   |   |   |
| 5  |            |           |       |              |         |       |   |   |   |   |
| 6  |            |           |       |              |         |       |   |   |   |   |
| 7  |            |           |       |              |         |       |   |   |   |   |
| 8  |            |           |       |              |         |       |   |   |   |   |
| 9  |            |           |       |              |         |       |   |   |   |   |
| 10 |            |           |       |              |         |       |   |   |   |   |
| 11 |            |           |       |              |         |       |   |   |   |   |
| 12 |            |           |       |              |         |       |   |   |   |   |
| 13 |            |           |       |              |         |       |   |   |   |   |

## Exploring the Power of Google Apps

Typing in the header values for a Google Sheet isn't *that* much work, so that script isn't the most valuable unless you setup a *lot* of new spreadsheets. But, Google Apps Script can do so much more. Here are two additional examples to play around with.

## Example 1: Automatically Add Contacts From a Google Sheet

Let's say we had a contacts spreadsheet set up like the example above, with columns for first name, last name, and more, as an easy way to keep track of everyone we met at networking events and conferences. We can actually use Apps Script to automatically turn these rows into Google Contacts so we can connect with them again later.

Here's the basic spreadsheet setup:

|    | A          | B         | C                  | D            | E            | F                                                                                                   | G             |
|----|------------|-----------|--------------------|--------------|--------------|-----------------------------------------------------------------------------------------------------|---------------|
| 1  | First Name | Last Name | Email              | Phone Number | Company      | Notes                                                                                               | Added Already |
| 2  | John       | Doe       | John@mycompany.com | 333-333-3333 | My Company   | Met John at a conference on JavaScript. He works at My Company as the Lead Developer.               | Already added |
| 3  | Tim        | Smith     | Tim@notmyemail.com | 444-444-4444 | Not My Email | Met Tim through Tony and had lunch at Panera Bread. He's working on software to prevent email spam. | Already added |
| 4  |            |           |                    |              |              |                                                                                                     |               |
| 5  |            |           |                    |              |              |                                                                                                     |               |
| 6  |            |           |                    |              |              |                                                                                                     |               |
| 7  |            |           |                    |              |              |                                                                                                     |               |
| 8  |            |           |                    |              |              |                                                                                                     |               |
| 9  |            |           |                    |              |              |                                                                                                     |               |
| 10 |            |           |                    |              |              |                                                                                                     |               |
| 11 |            |           |                    |              |              |                                                                                                     |               |
| 12 |            |           |                    |              |              |                                                                                                     |               |
| 13 |            |           |                    |              |              |                                                                                                     |               |

Now, we could use a function like this to add the contacts to Google Contacts:

```

1 function createContact() {
2 var alreadyAdded = "Already added";
3 var sheet = SpreadsheetApp.getActiveSheet();
4 var startRow = 2; // First row of data to process
5 var numRows = 2; // Number of rows to process
6
7 // Fetch the range of cells A2:G3
8 var dataRange = sheet.getRange(startRow, 1, numRows, 8)
9
10 // Fetch values for each row in the Range.
11 var data = dataRange.getValues();
12 for (var i = 0; i < data.length; ++i) {
13 var row = data[i];
14 var firstName = row[0]
15 var lastName = row[1]
16 var emailAddress = row[2]
17 var phone = row[3]
18 var company = row[4]
19 var notes = row[5]
20 var addedAlready = row[6];
21
22 if (addedAlready != alreadyAdded) {
23 // Create contact in Google Contacts
24 var contact = ContactsApp.createContact(firstName, lastName, emailAddress);
25
26 // Add values to new contact

```

```

27 contact.addCompany(company, "");
28 contact.addPhone(ContactApp.Field.WORK_PHONE, phone);
29 contact.setNotes(notes);
30 sheet.getRange(startRow + i, 7).setValue(alreadyAdded);
31 };
32 }
33 };

```

While the code above looks much more complex, we're actually doing many of the same things we did in the original example.

First, we define a range of cells using `dataRange`. Then, we look at each one of those cells and grab the associated value for each property (first name, last name, etc).

Now, we can use some methods provided by the [Google Contacts documentation](#) to create a contact and give it the right values. In this example, we also have a check in place to make sure a contact isn't added twice; for that, we use `alreadyAdded`. When you run this code, you should get some contacts added automatically from your spreadsheet!

The screenshot shows the Google Contacts application. At the top, there's a blue header bar with the word 'Contacts'. Below the header, on the left, is a sidebar menu with options like 'All contacts', 'Frequently contacted', 'Groups', and 'Zapier Test' (which is highlighted). On the right, the main area displays a table of contacts. The table has columns for 'Name', 'Email', 'Phone', and 'Company'. It shows two entries: 'John Doe' with email 'John@mycompany.com' and phone '333-333-3333', and 'Tim Smith' with email 'Tim@notmyemail.com' and phone '444-444-4444'. Both contacts are listed under the 'My Company' company category.

## Add Contacts from Google Sheets to a CRM using Zapier Instead

Google Apps Script helps you automate processes within a specific tool and create connections between your Google apps. But if you want to avoid JavaScript troubleshooting, or send data from Google Sheets to a non-Google app, try Zapier. It can automatically pick up new information in a spreadsheet and transfer it to any of 500 apps—no code required.

For example, you can build the same automation that we covered above, hooking Google Sheets up to Google Contacts, or connect it to your [favorite CRM app](#) instead.

### Zapier Integrations:

- Create Google Contacts from new Google Sheets rows
- Add new Google Sheets rows as Highrise contacts

- Add leads to Salesforce from new rows on Google Sheets
- Create or update HubSpot contacts from new Google Sheets rows
- Add new Google Sheets rows to Infusionsoft as contacts

**Tip:** Explore more ways to [use Google Sheets with Zapier](#), or jump back to chapter 3 to how to turn Google Sheets into a customized CRM.

## Example 2: Automating Email Outreach

Let's say you put on a massive event that was a huge success. You want to thank everyone individually, but with over 200 guests you don't have the time to email each of them. With Google Apps Script, Google Sheets, and Gmail, though, you can automatically send out emails with custom messages for each person!

To set this up, we'll want a spreadsheet with each contact's first name and email address like this:

|    | A          | B                   | C       | D          | E | F |
|----|------------|---------------------|---------|------------|---|---|
| 1  | First Name | Email               | Message | Email Sent |   |   |
| 2  | Joe        | joe@notanemail.com  |         |            |   |   |
| 3  | Ruth       | ruth@notanemail.com |         |            |   |   |
| 4  | Tim        | tim@notanemail.com  |         |            |   |   |
| 5  | Tom        | tom@notanemail.com  |         |            |   |   |
| 6  |            |                     |         |            |   |   |
| 7  |            |                     |         |            |   |   |
| 8  |            |                     |         |            |   |   |
| 9  |            |                     |         |            |   |   |
| 10 |            |                     |         |            |   |   |
| 11 |            |                     |         |            |   |   |
| 12 |            |                     |         |            |   |   |
| 13 |            |                     |         |            |   |   |

Then, we can use a function like this to make the emails:

```

1 function sendEmails() {
2 var sheet = SpreadsheetApp.getActiveSheet();
3 var startRow = 2; // First row of data to process
4 var numRows = 4; // Number of rows to process
5
6 // Fetch the range of cells A2:D5
7 var dataRange = sheet.getRange(startRow, 1, numRows, 4)
8
9 // Fetch values for each row in the Range.
10 var data = dataRange.getValues();
11 var emailSent = "Email Sent";
12 for (var i = 0; i < data.length; i++) {
13 var row = data[i];
14 var firstName = row[0];
15 var emailAddress = row[1];
16 var isEmailSent = row[3];
17 if (isEmailSent != emailSent) {

```

```

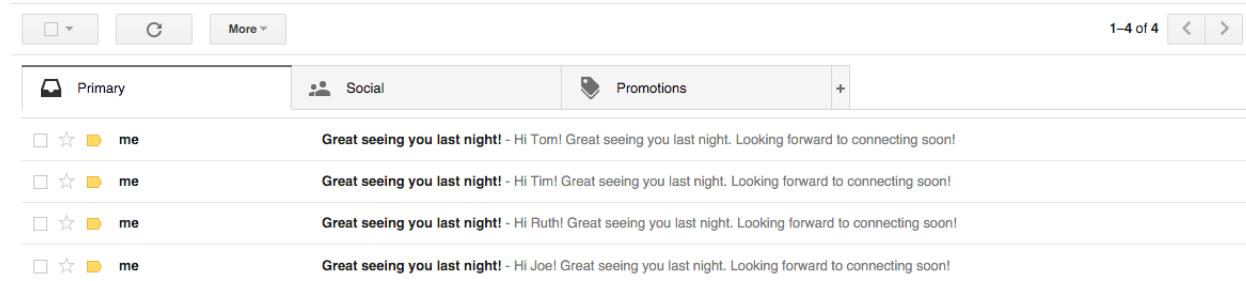
18 var message = "Hi " + firstName + "! Great seeing you last night.
19 Looking forward to connecting soon!";
20 var subject = "Great seeing you last night!";
21 MailApp.sendEmail(emailAddress, subject, message);
22 sheet.getRange(startRow + i, 3).setValue(message);
23 sheet.getRange(startRow + i, 4).setValue(emailSent);
24 };
25 };
26 };

```

This function starts off similar to the others by grabbing a range of cells in the `dataRange` variable. For each row, it grabs the first name from the first column (the `firstName` variable) and the email address from the second column (the `emailAddress` variable). Then, it builds a customized message in the `message` variable.

Once your script has a recipient, subject line, and message to work with, it taps into Gmail to send your message. In the [Apps Script documentation for Gmail](#), you'll find the `sendEmail` class, which accepts the variables `emailAddress` (your recipient's email address), `subject` (the email's subject line), and `message` (your custom message).

The `sendEmail` class builds your email, and sends it to the appropriate address. Finally, this script adds the customized message to your spreadsheet, and sets the value of the fourth column to “Email Sent,” to ensure we don't send duplicate emails.



In the example above, I changed the test emails in the spreadsheet to my actual email, which is why all of the emails arrived in the same inbox. When you run this script on your own spreadsheet, though, it'll send emails to each of the contacts you've added to the spreadsheet.

## Use Zapier to Send Emails via Google Sheets

If you use a different email service provider, or you just don't want to build new JavaScript blocks for each batch of follow-ups, try using these Zaps to connect Google Sheets to the email app of your choice.

### Zapier Integrations:

- [Send a Gmail email for new Google Sheet spreadsheet rows](#)
- [Send Office 365 emails from new rows in Google Sheets](#)

- Send Mandrill emails when new rows are added to Google Sheets
- Send new Google Sheets rows through SMTP emails
- Send SendGrid emails from new Google Sheets rows

## What else can you do with Google Apps Script?

Your imagination is the only limit on what you can achieve with Google Apps Script. Here are some of my favorite examples:

- Jame Todd Rubin created a [writing tracker script](#) you can copy from GitHub.
- Google has an example script that [generates a monthly report of your Gmail activity](#) (daily usage, emails received, etc).
- [Gmail Snooze](#) allows you to move emails out of your inbox for a specified period of time thanks to an Apps. Then, they'll reappear in your inbox so you can deal with them when appropriate.
- Amit Agarwal made [a website monitor with Google Docs](#) so you'll immediately receive alerts if your site goes offline.

There's hundreds of other things you can do with Google Apps Scripts—your imagination's the limit. The best way to get started is to review the documentation and start tinkering away. As you get more familiar with the methods and attributes available to you, you'll start to realize just how much is possible—often without writing any extra code.

Or, if you don't want to mess with JavaScript, let Zapier do the heavy lifting for you. With [dozens of Google Sheets automations](#) that pass data between your apps, Zapier transforms the examples we covered above into a few simple clicks, making each integration painless.

---

You've done it: if you've followed along with this entire book, you've [learned spreadsheet basics](#), built a [CRM](#) and [business dashboard](#), learned about [Google Sheets' hidden text tools](#) and [best add-ons](#), and now have learned to code your own add-ons with Google Apps Script.

Where can you go from here? In the closing chapter, we'll take a quick look at some of Zapier's best resources to help you organize your files, gather data, and more—along with the best Google Sheets resources to find the spreadsheet tools you need in seconds.

---

Enjoy? Read and share this chapter online: [zpr.io/uB95](https://zpr.io/uB95)

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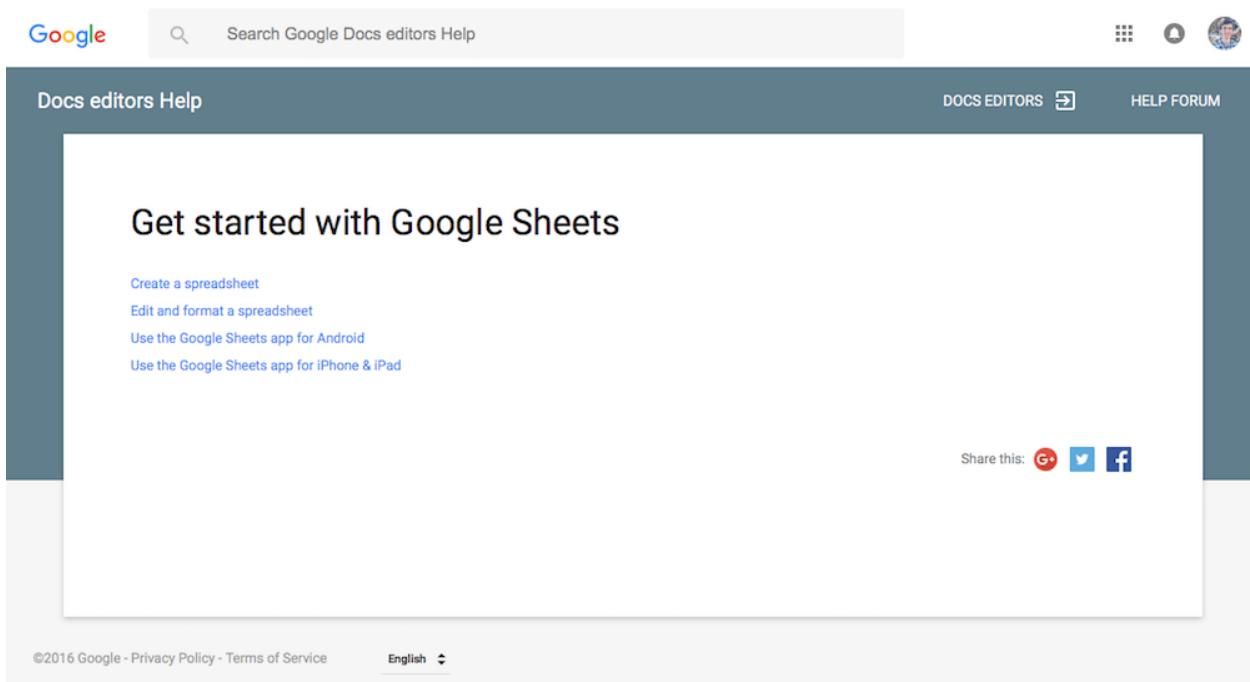
*Written by freelance writer [Jeremy DuVall](#).*

# Chapter 8: Extra Resources to Manage Your Spreadsheets

If you've read each tutorial in *The Ultimate Guide to Google Sheets*, you're ready to do almost anything you want with your spreadsheets. But sometimes, you'll still want a little extra advice and help.

For that, here are some of the best resources to help you continue learning about spreadsheets and use them alongside other apps for a powerful business workflow.

## **Google Sheets' Getting Started Guide**



The screenshot shows a web browser displaying the 'Docs editors Help' section of the Google Sheets documentation. The main title is 'Get started with Google Sheets'. Below it, there are several links: 'Create a spreadsheet', 'Edit and format a spreadsheet', 'Use the Google Sheets app for Android', and 'Use the Google Sheets app for iPhone & iPad'. At the bottom right of the main content area, there is a 'Share this:' button followed by icons for Google+, Twitter, and Facebook. The footer of the page includes links for '©2016 Google - Privacy Policy - Terms of Service' and a language selection dropdown set to 'English'.

It's simple and basic, but it's the official Google Sheets documentation, and it'll answer any questions you have about your spreadsheets and other Google Docs tools.

Best of all, it's built into Google Sheets. If you ever get stuck in your spreadsheets, just click *Help -> Sheets Help* to open a floating pane with this documentation right inside your spreadsheets.

## Google Sheets' Functions List

The screenshot shows the 'Google spreadsheets function list' page. At the top, there's a search bar labeled 'Filter with a few keywords ...' and a 'Narrow by...' dropdown. Below that is a table with columns for Type, Name, and Description. The table contains three rows of data:

| Type  | Name            | Description                                                                                                                                             |
|-------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Array | ARRAY_CONSTRAIN | Constrains an array result to a specified size. <a href="#">Learn more</a>                                                                              |
| Array | FREQUENCY       | Calculates the frequency distribution of a one-column array into specified classes. <a href="#">Learn more</a>                                          |
| Array | GROWTH          | Given partial data about an exponential growth trend, fits an ideal exponential growth trend and/or predicts further values. <a href="#">Learn more</a> |

To the right of the table is a sidebar titled 'Operator' containing a list of operators:

- Google spreadsheets function list
- ADD
- CONCAT
- DIVIDE
- EQ
- GT
- GTE
- LT
- LTE
- MINUS
- MULTIPLY
- NE
- POW
- UMINUS
- UNARY\_PERCENT
- UPLUS

Looking for a specific function you can't quite remember? This is the tool for you. It's a [complete list of every function in Google Sheets](#), complete with a search field and filters to drill down and find the type of function you need.

Each function includes its own documentation page, too, with examples to help you start using the function quickly.

## Google Sheets' Add-ons Guide

The screenshot shows the Google Apps Script Guides page. The left sidebar contains a navigation menu with sections like Overview, 5-Minute Quickstarts, Add-ons for Google Apps, Google Services / External APIs, Types of Scripts, Extend Google Apps, Menus, Dialogs, and Sidebars, User Interfaces, Store and Serve Data, Triggers and Events, and Development Environment. The main content area displays a 'Quickstart: Add-on for Google Forms' guide. It includes a brief description, a 5-star rating, and a screenshot of the 'Form Notifications' add-on settings. A sidebar on the right provides links to Contents, Set it up, Try it out, Publish, and Learn more.

Want to build more advanced add-ons? Google has Apps Script guides to help you build Forms and Sheets add-ons like the ones you built in chapter 7.

The first tutorials help you get customized notifications from Google Forms, read data from a spreadsheet, and [build custom menu items in Google Sheets](#).

## Find Alternate Spreadsheet Apps



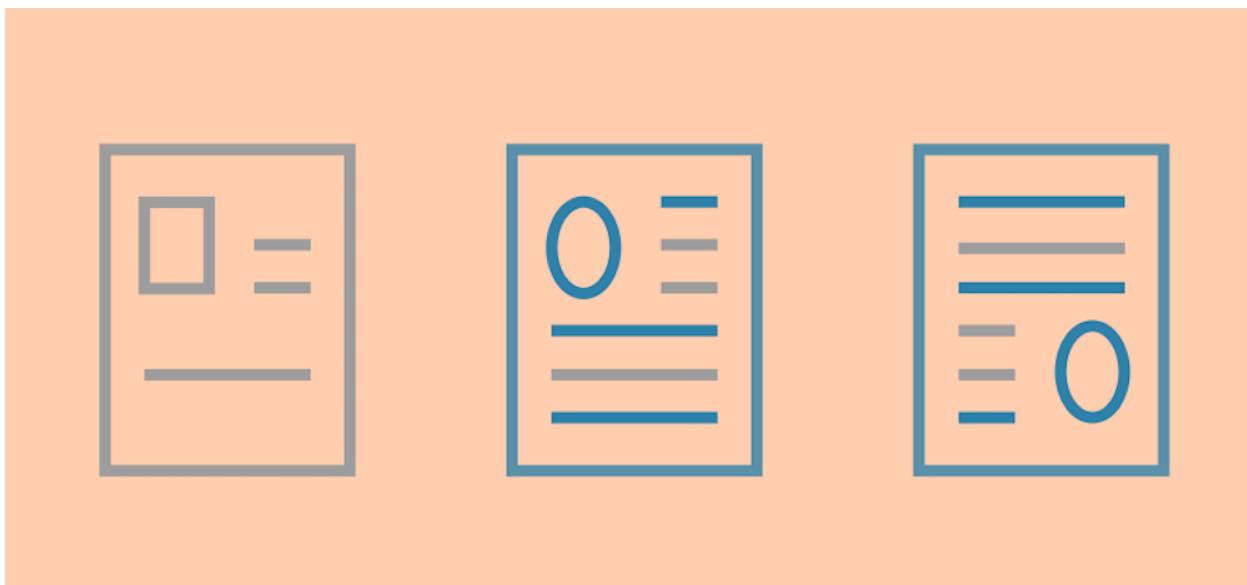
A screenshot of a spreadsheet application showing a table of computer prices. The table has columns for Product Name (A), Price (B), and a column labeled 'C' (C). Row 6 contains the formula =SUM(B2..B4) in cell B6, and the value 25 in cell C1. The table data is as follows:

|    | A         | B     | C | D |
|----|-----------|-------|---|---|
| 1  |           | PRICE |   |   |
| 2  | APPLE II  | 2638  |   |   |
| 3  | HP LASERJ | 2995  |   |   |
| 4  | VISICALC  | 250   |   |   |
| 5  | TOTAL     | 5883  |   |   |
| 6  |           |       |   |   |
| 7  |           |       |   |   |
| 8  |           |       |   |   |
| 9  |           |       |   |   |
| 10 |           |       |   |   |
| 11 |           |       |   |   |
| 12 |           |       |   |   |
| 13 |           |       |   |   |
| 14 |           |       |   |   |
| 15 |           |       |   |   |
| 16 |           |       |   |   |
| 17 |           |       |   |   |
| 18 |           |       |   |   |
| 19 |           |       |   |   |
| 20 |           |       |   |   |

Want to try out some other spreadsheet apps—either for more features than Google Sheets offers, or for better ways to make stylish sheets?

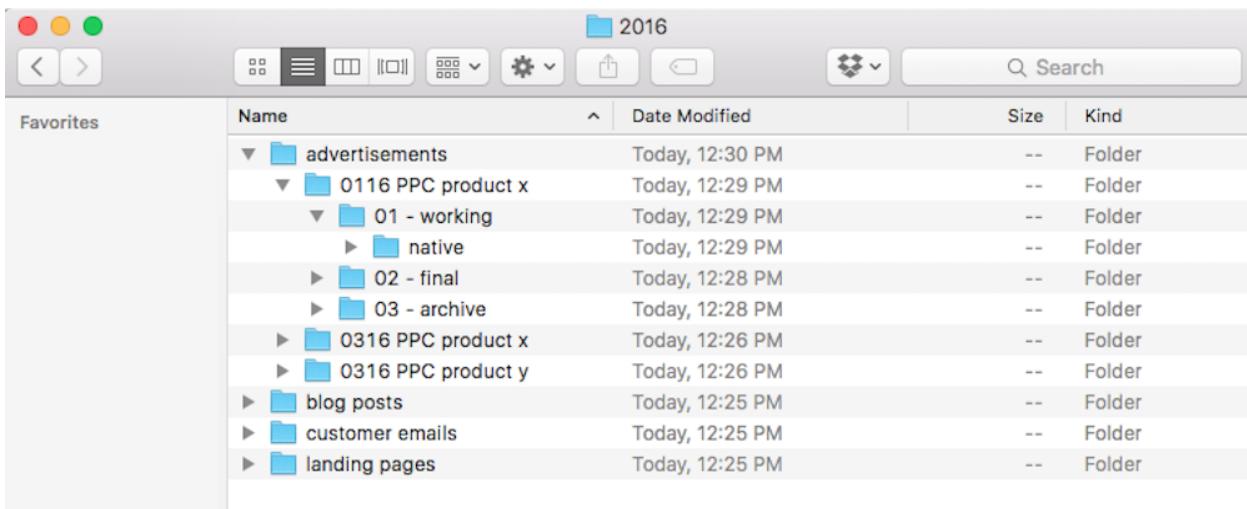
We've tried out [the best spreadsheet apps](#) available today, with a mix of web and native tools that you can use to crunch numbers. There's even an online version of VisiCalc, to see where it all started.

## Create Templates for Your Most-Used Spreadsheets



Tired of re-typing the same things over and over? This tutorial will teach you [how to make templates for anything you need](#), with sections on templated documents, spreadsheets, projects, and much more.

## Effectively Organize Your Files and Folders



Now that you're making spreadsheets for everything, you'll need to keep them organized. In this Zapier guide, you'll learn the best strategies for [organizing your files and folders](#).

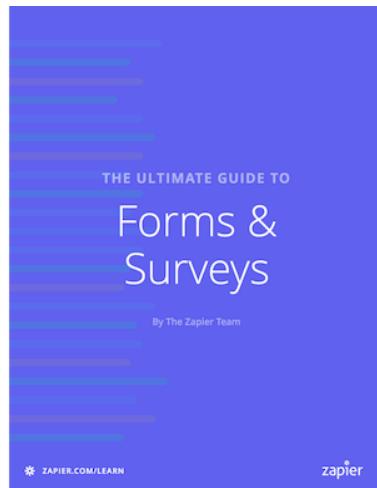
Whether you're storing your spreadsheets on your computer or just need to keep track of them in Google Drive, the tips here will make sure you never lose a spreadsheet—or any other file—again.

## Back up All Your Files

The screenshot shows the Google Drive backup interface. At the top, there's a 'Drive' icon, a 'All files' button, and a 'Microsoft Powerpoint and 3 other formats' button. To the right of these are two checkboxes: one checked with a green checkmark and one empty. Below this, under 'Files and folders', there are two radio buttons: 'Include all files and folders in Drive' (selected) and 'Select files and folders'. A button labeled 'Files and folders' shows '11 folders selected.' Under 'File formats', there are five dropdown menus corresponding to 'Documents', 'Drawings', 'Forms', 'Presentations', and 'Spreadsheets'. Each menu has a current selection and a dropdown arrow. The selections are: Documents (Microsoft Word), Drawings (JPEG Image), Forms (Microsoft Excel), Presentations (Microsoft Powerpoint), and Spreadsheets (Microsoft Excel).

You'll also want to make sure you have a backup of all your spreadsheets and other files, to make sure you never lose anything important. In our [backup guide](#), you'll learn how to export all of your files from Google Drive and other web apps, and how to create a full online backup of everything from your apps and devices.

## Learn how to Build Great Forms and Surveys



Ready to dig into another book? Our *Ultimate Guide to Forms and Surveys* will help you get the most out of Google Forms by teaching you how to create effective forms, write unbiased questions in surveys, and use forms to build apps for your business.

Or, check out the other books in the [Zapier Learning Center](#) for quick ways to learn about email marketing, CRMs, remote work, and much more.

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*Thanks for reading!*