

Tricks, Tips, and Stats with Google Sheets

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Features and Tools

Conditional Formatting

Conditional formatting causes a cell to change colors based on the cell's value (or another condition). The example below is a custom formula that will change the color of an entire row if the date in month in Column A and the day in Column B matches today's date. (Note that there are four header rows, so the data range begins in cell A5.)

```
=DATEVALUE(CONCATENATE($A5,$B5))=TODAY()
```

Data Validation

Data validation sets limits on a cell's contents. It can be used to create dropdown menus or add checkboxes to a sheet. Accessed by going to [Data](#) > [Data validation](#).

Pivot Tables

Pivot tables convert sets of data into useful summaries. Create a pivot table by highlighting a range and then going to [Insert](#) > [Pivot table](#). An easy and universally useful way to use Google Sheets to view information in a readable format is:

1. Set up a Google Form to collect responses as they occur (for daily gate counts, daily program attendance, or similar).
2. Link the Google Form to a Google Sheet.
3. Build a pivot table from the responses.

Google Apps Script

JavaScript, but for Google. The Google Apps Script editor can be accessed from within any Google Sheet by going to [Extensions](#) > [Apps Script](#). Each function can be assigned a trigger (like "On edit" or "Every hour") that automatically runs the function.

This example will automatically fill in the date in Column B as soon as information is entered in Column D when combined with an "On edit" trigger.

```
function fillDate() {  
  var s = SpreadsheetApp.getActiveSheet();  
  if( s.getName() == "Curbside" ) {  
    var r = s.getActiveCell();  
    if( r.getColumn() == 4 ) {  
      var nextCell = r.offset(0, -2);  
      nextCell.setValue(new Date()).setNumberFormat("MM/dd/yyyy");  
    }  
  }  
}
```

Useful Functions

ARRAYFORMULA

Used to apply a formula down the entire length of a column. Useful for extracting the month, year, and more from a full date for the purpose of creating a pivot table.

This example will first check that the cell in Column A is not blank. If Column A has a value, then the formula takes the date in the same row in Column B and returns only the year.

```
=ARRAYFORMULA({"YEAR";if(A2:A <> "", TEXT(B2:B, "YYYY"), ""))})
```

DCOUNTA

Along with its sibling DCOUNT, DCOUNTA counts the number of values that match a set of criteria. For example, a DCOUNTA formula in a spreadsheet that tracks study room use might check each row for values that match a certain month and year, and then count a value like the patron name for each matching entry.

DGET

Works like DCOUNTA, but instead of counting the number of entries that match the criteria, it instead looks for a single value that matches.

DSUM

Works like DCOUNTA, but instead of counting the number of entries that match the criteria, it adds values in a specified column. For instance, DSUM could be used to add the number of masks distributed for all rows that match a particular month and year.

The example below looks at another sheet called "Visits" for any rows where the value in the "Year" column matches the value in cell I4 (here a dropdown menu of different years created with data validation). It then adds the numbers in the column called "Patrons" for each matching entry.

```
=DSUM(Circulation!A:D,"Circulation",{{"Year";I4}})
```

INDIRECT

Converts a string into a cell reference. Can be used to allow a cell to reference itself or to reference another cell in relation to itself. The example below references a cell one row above the cell where the formula sits.

```
=OFFSET(INDIRECT("RC",FALSE),-1,0)
```

IMPORTRANGE

Pulls data from one spreadsheet to another. Useful for building centralized statistics spreadsheets.

QUERY

Uses Google Visualization API Query Language (which is similar to SQL) to filter, sort, and perform functions on data in a way that is more flexible and much broader – but also infinitely more finicky – than using a pivot table or a set of database formulas.

Resources

Google Help Center

- [Save form responses to a sheet](#)
- [Protect, hide, and edit sheets](#)
- [Add & use checkboxes](#)
- [Create a dropdown list](#)
- [Conditional formatting](#)
- [Create & use pivot tables](#)
- [Customize a pivot table](#)
- [Database functions](#)
- [Google Apps Script overview](#)

Google Learning Center

- [Google Forms](#)
- [Google Sheets](#)

Additional Resources

- [Stack Overflow](#)