



18 LESSONS 100 MIN TOTAL

Data Journalism

This course will help you unlock the powerful world of data journalism to tell deep, insightful stories. You'll learn to find, analyze, interpret and visualize data in compelling new ways.

Tools Used:

Google Permissions, Google Public Data Explorer, Google Surveys, Google Crisis Map, Global Forest Watch, Election Databot, Tilegrams, Google Data GIF Maker, Flourish, Google Trends, Google Fusion Tables, Google Sheets, Google Data Studio

LESSON 01

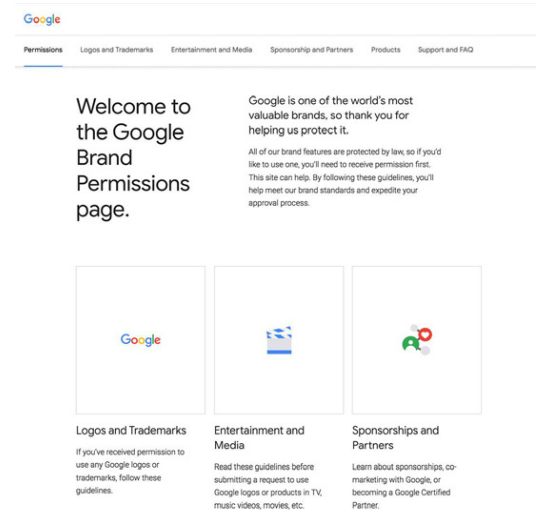
Permissions: Source Google data

Learn proper usage and citations for Google products.

Lesson overview

How to use the Google brand in your content.

The [Google Permissions](#) website is your one-stop-shop to learn how to properly use and cite our products in your stories. It highlights common use cases, basic trademark guidelines and gives instructions on using our logos, images, maps and graphics across all media.



- 1 Citing maps sources.
- 2 Giving Credit where it's due.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

Citing maps sources.

From satellite images to maps, journalists around the world use our tools to help tell their stories. And we're glad. We simply ask that you follow some usage rules to ensure they're used fairly and properly.

STEP 1 OF 2

Let's say you're publishing a web infographic using an image from Google Earth. Go to google.com/permissions and click Products.

STEP 2 OF 2

Scroll down until you see Google Maps/Earth and click guidelines for non-commercial use. The General Guidelines section should answer most FAQs for Google map usage.

[and Media](#) [Sponsorship and Partners](#) [Products](#) [Support and FAQ](#)

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All of our brand features are protected by law, so if you'd like to use one, you'll need to receive permission first. This site can help. By following these guidelines, you'll help meet our brand standards and expedite your approval process.

Legal


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Google Maps/Earth

If you're considering using Google Maps, Google Earth, or Street View for your project, follow [these guidelines for non-commercial use](#). They spell out how you can and can't use our mapping tools in everything from marketing and promotional materials, films, television programs, books, academic journals, and much more.

Other products



Partner Marketing Hub
Includes Android, Google Assistant, Google Play, Google Pay, etc.



YouTube
Guidance and brand use request form for YouTube

Giving credit where it's due.

SINGLE STEP

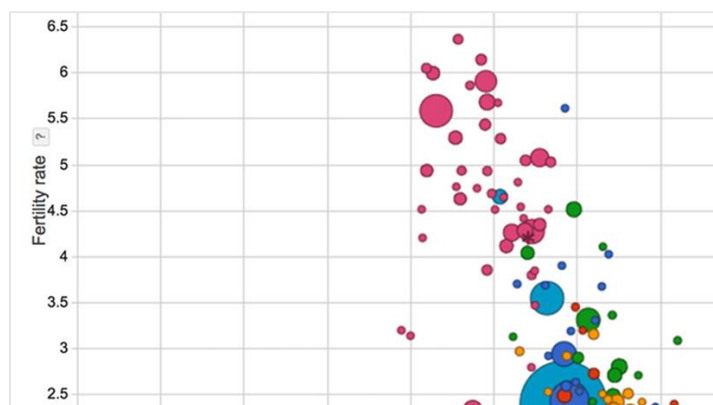
When you're ready to publish, make sure you properly cite your Google source. Many of our products, such as Google Maps and Google Earth, will automatically incorporate an attribution for Google and the data provider. We've also set up an attributions site to answer your more detailed questions.



Congratulations!

You completed “Permissions: Source Google data.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



6 min estimated time

Public Data Explorer: Access a world of data

Use high-quality data sets to create compelling visuals.

For more Data Journalism lessons, visit:

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LESSON 02

Public Data Explorer: Access a world of data

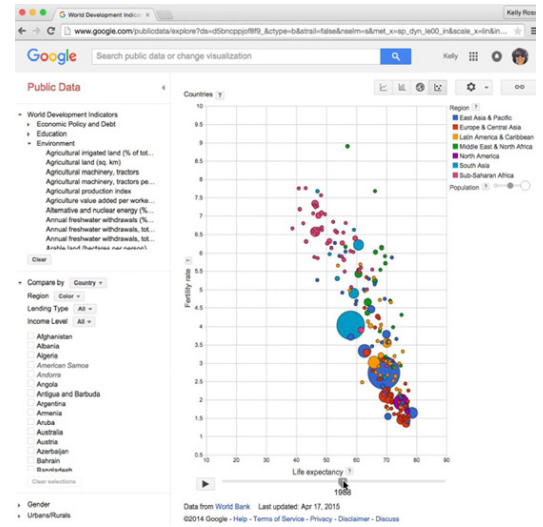
Use high-quality data sets to create compelling visuals.

Lesson overview

Find and visualize high-quality data.

When you're researching a story or on a tight deadline, finding quality datasets can be a roadblock. Google Public Data Explorer helps you find, interpret and share data to show how our world is changing.

It aggregates datasets from trusted sources and gives you simple tools to create sophisticated visualizations. With Google Public Data Explorer, you can monitor change over time, identify trends, compare metrics and strengthen your story using data.



- 1 A single source for quality data.
- 2 A library organized for fast, easy search.
- 3 Tell your story through charts, graphs or maps.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

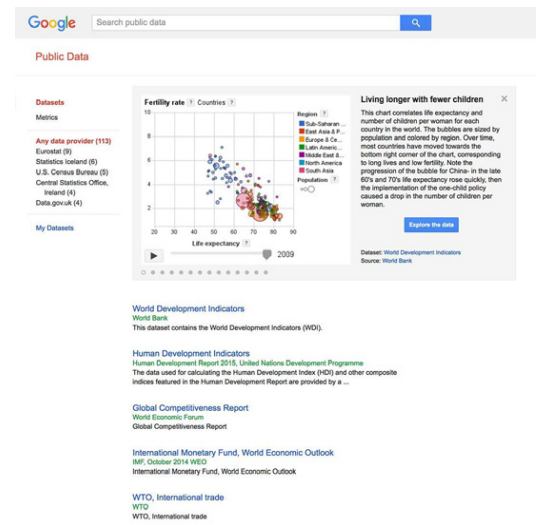
A single source for quality data.

With datasets from the World Bank, IMF, Eurostat and more, Public Data Explorer provides global statistics on the environment, economics, labor, health, education, poverty and more. You'll also find more granular data from state and local governments, universities and nonprofits. So, whether your search is broad like "global CO2 emissions" or narrow like "high school dropout rates in Texas," there's a wealth of data to support your story.

Public Data Explorer can also help you uncover new data sources.

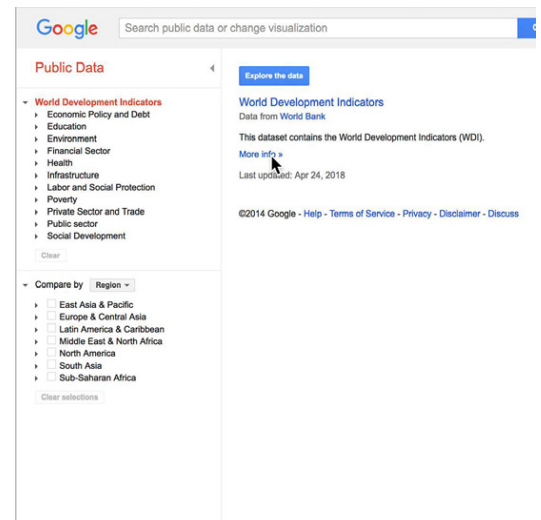
STEP 1 OF 2

To learn when the data was published and who created it, click the blue links.



STEP 2 OF 2

To go to the site where the dataset is hosted, and look for different file formats, click **More Info**.



A library organized for fast, easy search.

The Google Public Data Explorer helps you search datasets and metrics by keywords as quickly as you would with Google Search.

STEP 1 OF 2

A **Dataset** is a bundle of statistics created by a single data provider. For example, "Population of the United States," from the US Census Bureau, and "World Development Indicators," from the World Bank.

The screenshot shows the Google Public Data Explorer interface. At the top, there is a search bar with the word "population" entered. Below the search bar, the text "Public Data" is displayed. On the left side, there are two tabs: "Datasets" (which is selected and highlighted with a red bar) and "Metrics". Below the "Datasets" tab, a list of data providers is shown under the heading "Any data provider (21)". The providers listed are Eurostat (2), Statistics South Africa (2), U.S. Census Bureau (2), Data.gov.uk (1), and General Statistics Office of Vietnam (1). Below this list is a link for "My Datasets". On the right side of the page, several search results are displayed. The first result is "Historical Population in the U.S." from the U.S. Census Bureau, with a description: "U.S. Census Data provided by Minnesota Population Center Populations, population densities and sex ratios of US states, 19...". The second result is "Population in the U.S." from the U.S. Census Bureau, with a description: "Population estimates for US States, counties, cities and other pla... This dataset was prepared by Google based on data downloa...". The third result is "Iceland Population" from Statistics Iceland. The fourth result is "Total population" from the National Institute of Statistics and Geography (INEGI), with a description: "United Mexican States total population". The fifth result is "Population Data according to Municipal Register" from the National Statistics Institute of Spain, with a description: "Provides the official population figures. approved by Royal Decr...".

STEP 2 OF 2

Metrics are statistics that are components of a larger dataset. These include topics like "population," "unemployment rate," and "GDP." By default, search results appear in **Metrics** mode. You can switch modes by clicking **Datasets** on the left side of the page.

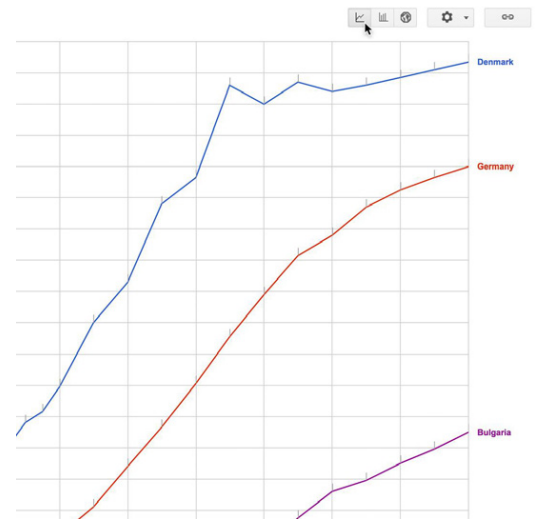
The screenshot shows the Google Public Data Explorer interface. At the top, there is a search bar with the word "population" entered. Below the search bar, the text "Public Data" is displayed. On the left side, there are two tabs: "Datasets" and "Metrics" (which is selected and highlighted with a red bar). Below the "Metrics" tab, a list of data providers is shown under the heading "Any data provider (459)". The providers listed are World Bank (56), UN Economic Commission for Europe (UNECE) (37), Human Development Report 2015, United Nations Development Programme (36), Statistics Iceland (31), and Frederick S. Pardee Center for International Futures (30). Below this list is a link for "My Datasets". On the right side of the page, several search results are displayed. The first result is "Population" from the U.S. Bureau of Economic Analysis, with a description: "BEA uses the Census Bureau's midyear population estimates students and other seasonal populations, which are measure... Compare by: U.S. County - Metropolitan Statistical Area - U.S. County". The second result is "Population" from the U.S. Census Bureau, with a description: "The population estimate for July 1 of the given year. Compare by: Country". The third result is "Population" from Eurostat, with a description: "Estimates of the resident population Compare by: Country group - Country - Region, NUTS-1 - Su... Subregion, NUTS-2". The fourth result is "Population" from Eurostat, with a description: "Estimates of the resident population Compare by: Country group - Country - Region, NUTS-1 - Su... Subregion, NUTS-2".

Tell your story through charts, graphs or maps.

When it comes to statistics, visual representations can be powerful. In Google Public Data Explorer, the visualizations are dynamic, so you can watch them move over time, change topics, highlight different entries and alter the scale. You can easily publish a visualization with your story.

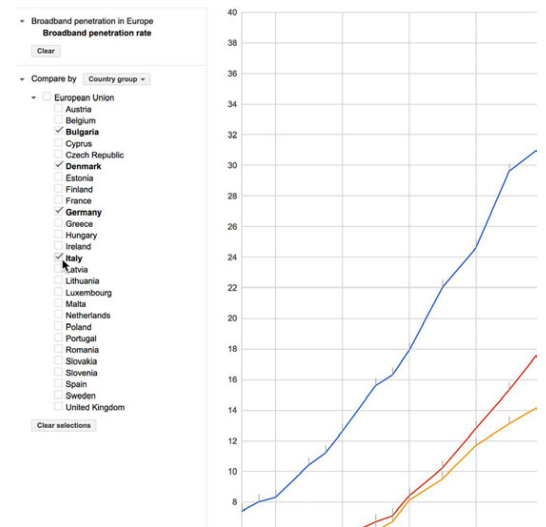
STEP 1 OF 4

Select a visualization type (line, bar, map, bubble).



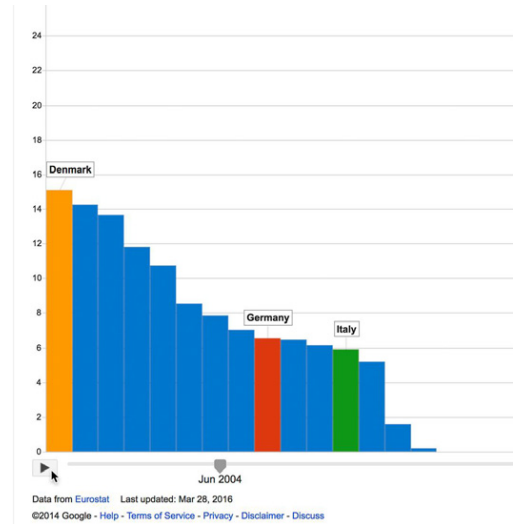
STEP 2 OF 4

Choose statistics to show, compare and filter.



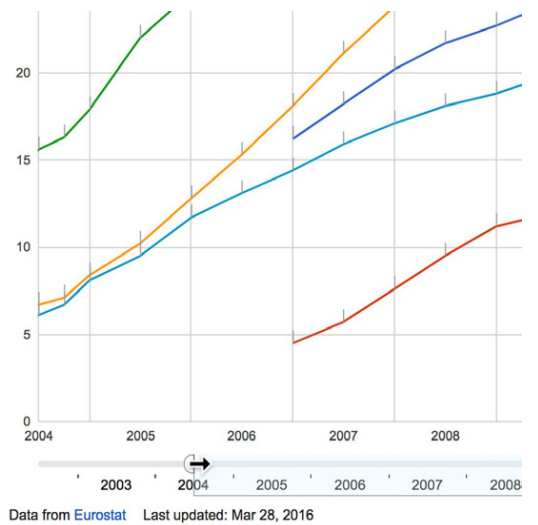
STEP 3 OF 4

In a bar, map or bubble chart, click **Play** to animate it over time.



STEP 4 OF 4

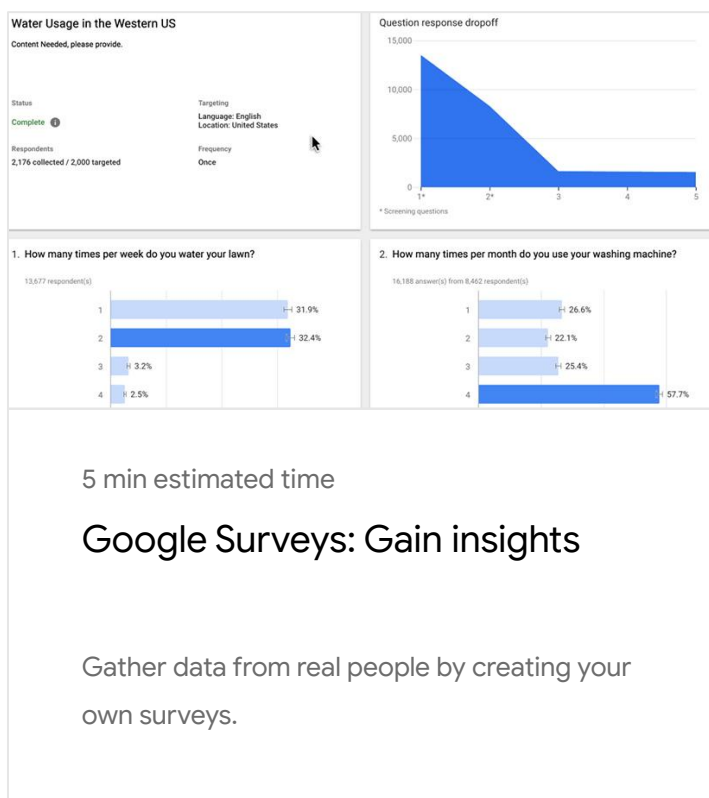
In a line chart, you'll adjust the x-axis time range by sliding the tabs in the timeline.



Congratulations!

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For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 03

Google Surveys: Gain insights

Gather data from real people by creating your own surveys.

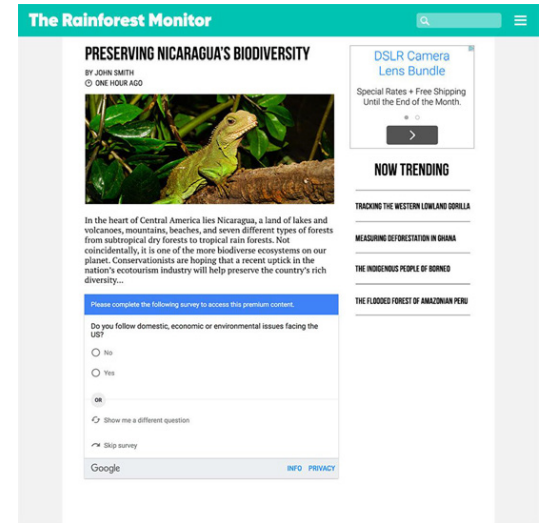
Lesson overview

Conduct your own research by creating a survey.

Google Surveys is useful for getting a clearer picture of people's opinions and perspectives to backup your story. You can create a survey on any topic and put it in front of people in real time.

For example, if you're researching how drought in the western United States affects people's water usage, you can gather data through a geo-targeted survey.

Results are quick and accurate: you'll begin receiving responses from a validated representative sample within 24 hours. Pricing starts at 10 cents per completed response.



- 1 Pick your audience.
- 2 Write your questions and answers.
- 3 Field and pay for your survey.
- 4 Track your surveys.
- 5 Interpreting survey results for your story.
- 6 Survey your own readers.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

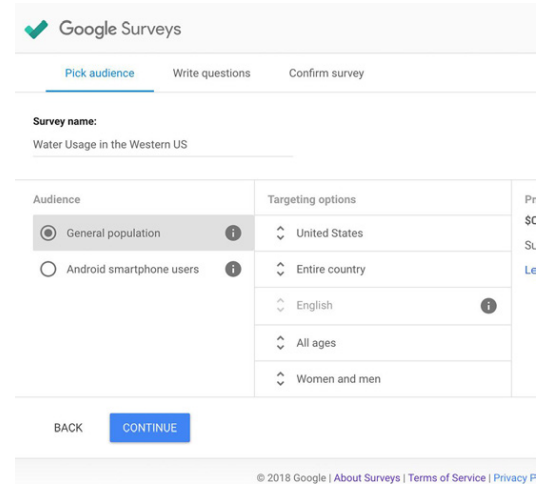
Pick your audience.

SINGLE STEP

Who do you want to answer your questions? To reach the general population, you can run your survey on our network of online publishers. Or, you can select more specific groups like Android smartphone users or audience panels.

Then, you can target participants based on demographics, like age, gender, and location. You can further narrow your audience with screening or pre-qualification questions.

To get started, go to g.co/surveys

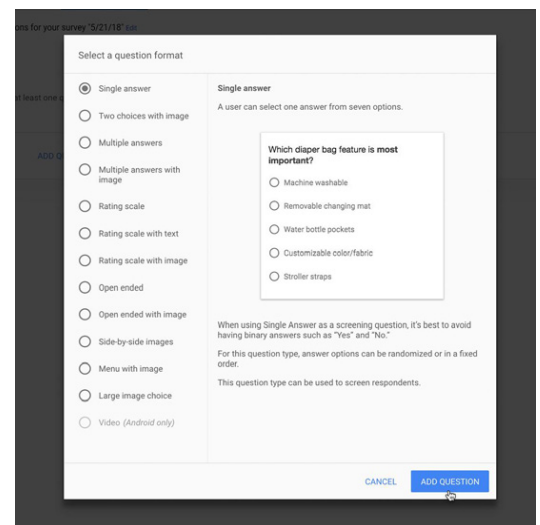


Write your questions and answers.

You can choose from a variety of question formats including single answer, multiple answer, and rating scale. You may write up to 10 questions, but bear in mind that shorter surveys yield faster results.

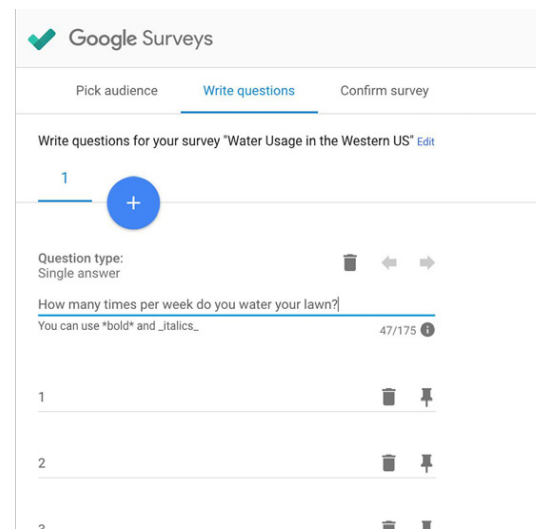
STEP 1 OF 4

Choose your format, then click **Add question**.





STEP 2 OF 4



Type in a question.






STEP 3 OF 4

Type in your answer options and click **Add question** to build out your survey.

5  

6 or more  

Enter answer text  

- Question options:
- Randomly reverse answer order 
 - Screen with this question
Maximum of 4 screening questions.
 - Include an open-ended text field

 Want to find respondents with special characteristics? Qualify your respondents with up to four screening questions.


BACK [ADD QUESTION](#) [CONFIRM](#)



STEP 4 OF 4



To preview your survey on desktop or mobile, click the brackets.



m US Edit



← →



47/175 



 



 



 

How many times per week do you water your lawn?  

- 1
- 2
- 3
- 4
- 5
- 6 or more



Field and pay for your survey.

STEP 1 OF 2


When you are satisfied with your survey, click **Confirm** and review all of your information, including the number of respondents you'd like.

STEP 2 OF 2

Enter your payment information, select frequency, then click **Buy Now**.

5  

6 or more  

Enter answer text  

Question options:

Randomly reverse answer order 

Screen with this question
Maximum of 4 screening questions.

Include an open-ended text field

 Want to find respondents with special characteristics? Qualify your respondents with up to four screening questions.

[BACK](#) [ADD QUESTION](#) [CONFIRM](#)

 Google Surveys

[Pick audience](#) [Write questions](#) [Confirm survey](#)

Review and purchase your survey "Water Usage in the Western US"

Responses per question

500

Minimum response count is 1.

Summary

\$0.10 per complete

1-question survey

x **500** completes

\$50.00

Frequency

Once

Weekly

Biweekly

Monthly

Quarterly

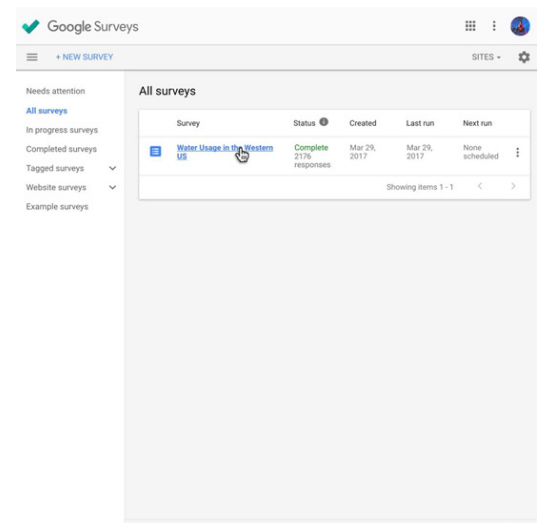
[BACK](#) [BUY NOW](#) [REDEEM A COUPON](#)

Need assistance, or interested in invoicing or subscription pricing? [Contact our sales team.](#)

Track your surveys.

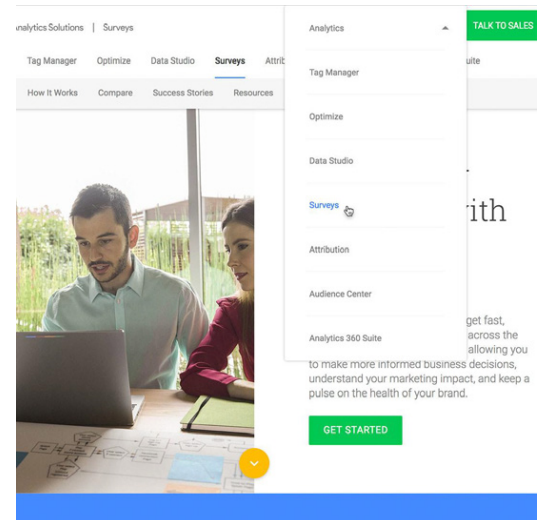
STEP 1 OF 2

The Google Surveys dashboard keeps all of your information in one place. You can monitor surveys in progress and review past surveys.



STEP 2 OF 2

To return to your dashboard, go to g.co/surveys, sign in to your account and select **Surveys**.

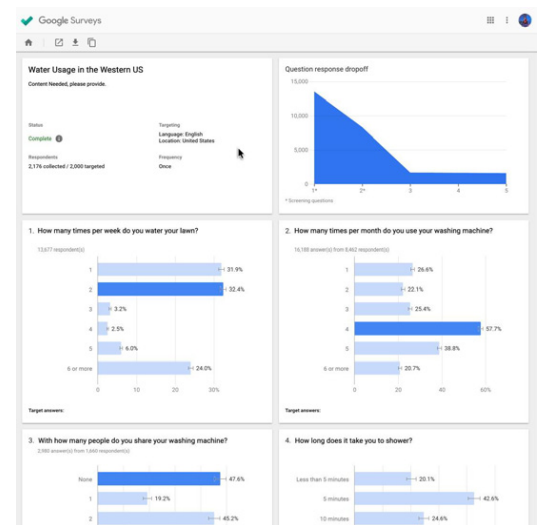


Interpreting survey results for your story.

Full survey completion typically takes a few days to a week. To learn more about Google Surveys, click [here](#).

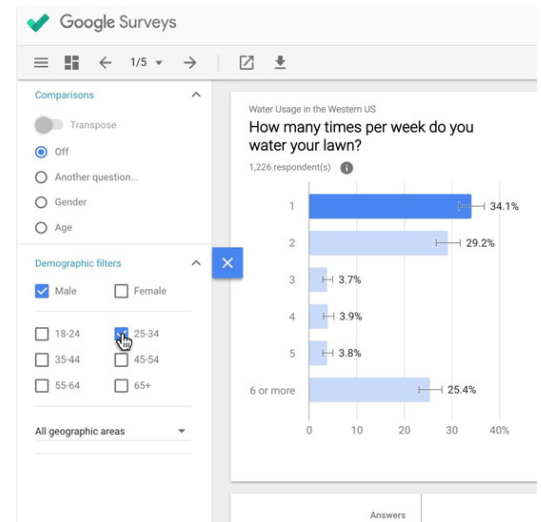
STEP 1 OF 2

As results roll in, Google automatically aggregates and analyzes responses, sending you data through a simple online interface.



STEP 2 OF 2

It includes interactive histograms, clickable demographic segmentation and comparisons, and significant insights — all easily shareable with your colleagues.



Survey your own readers.

Want to find out what your readers think? Use Google Surveys to ask them questions on your own site. It's free of charge and offers the same functionality as the paid solution.

You have sign up to this program, get approved by Google and embed some code onto your site.

STEP 1 OF 2

To begin this process, first sign up for Google Opinion Rewards [here](#).

The screenshot shows the Google Opinion Rewards - Signup Form. It includes fields for First Name & Last Name, Email for Contact, Company Name, and AdSense Login Email. There is a checkbox for 'Would you be interested in using Google Surveys for Publishers (GSP)?' and a 'Submit' button at the bottom.

STEP 2 OF 2

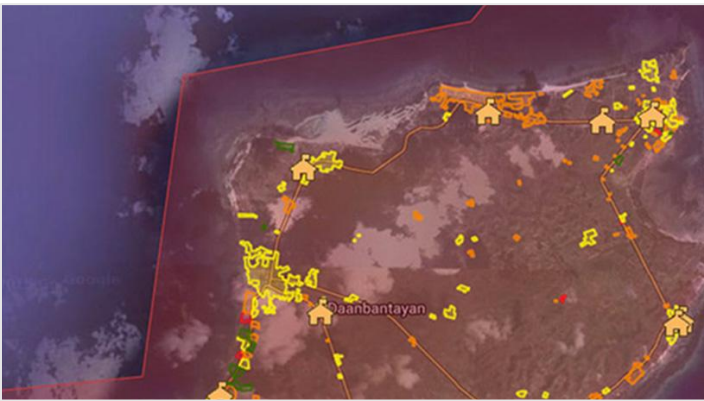
Then, go back into Google Surveys and follow the same process you would for a paid survey, except under **Audience**, choose **Your website**. You will also go through the same “buying” process but you will not be charged a fee.

The screenshot shows the Google Surveys 'Pick audience' step. It has three tabs: 'Pick audience', 'Write questions', and 'Confirm survey'. The 'Survey name' is 'Reader insights'. Under 'Audience', 'Your website' is selected. Under 'Your website', 'Financial Times' is listed, and there is a 'NEW SITE' link. A 'CONTINUE' button is at the bottom.

Congratulations!

You completed “Google Surveys: Gain insights.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



10 min estimated time

Google Crisis Map: Diagramming a disaster and its response

See the latest crisis-related data and customize it for your story.

For more Data Journalism lessons, visit:

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LESSON 04

Google Crisis Map: Diagramming a disaster and its response

See the latest crisis-related data and customize it for your story.

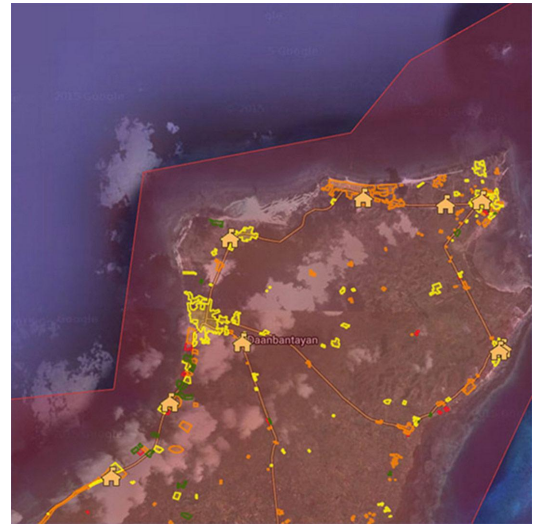
Lesson overview

About the Crisis Map.

When a disaster strikes, Google Crisis Response helps ensure that accurate information is available to those affected.

The Google Crisis Response team works directly with authoritative emergency organizations such as the Red Cross, NOAA and many others to create and update the Google Crisis Map, which features helpful information regarding disasters all over the world.

The Crisis Map can help journalists visualize and share crisis-related data, and includes relevant information such as shelter locations, weather, evacuation zones, post-event satellite imagery and more.



- 1 Explore archived Crisis Maps.
- 2 Customizing the Crisis Map.
- 3 Customization for advanced users.
- 4 Sharing the Crisis Map.
- 5 Receive alerts for new Crisis Maps.

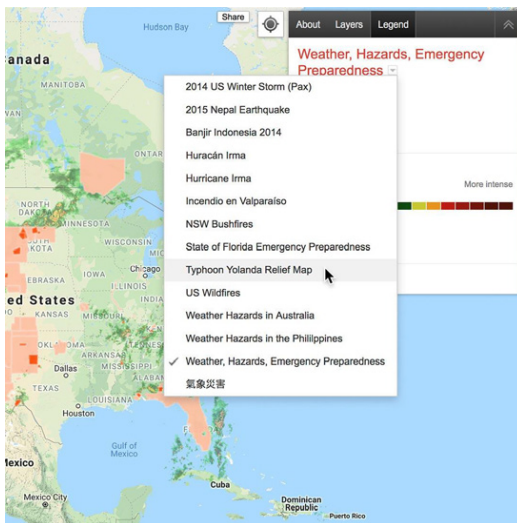
For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

Explore archived Crisis Maps.

SINGLE STEP

To get to know the tool, go to <https://google.org/crisismap>. Then start by exploring a growing collection of archived Crisis Maps. Just click the dropdown arrow next to the title of the current map.

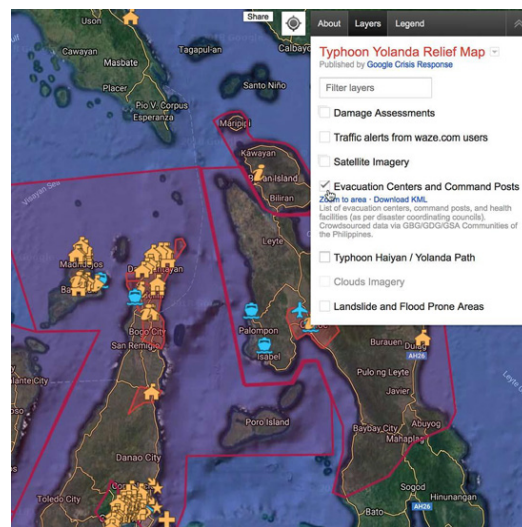


Customizing the Crisis Map.

By default the Crisis Map displays multiple layers of information. But it's easy to customize the map and highlight only specific information.

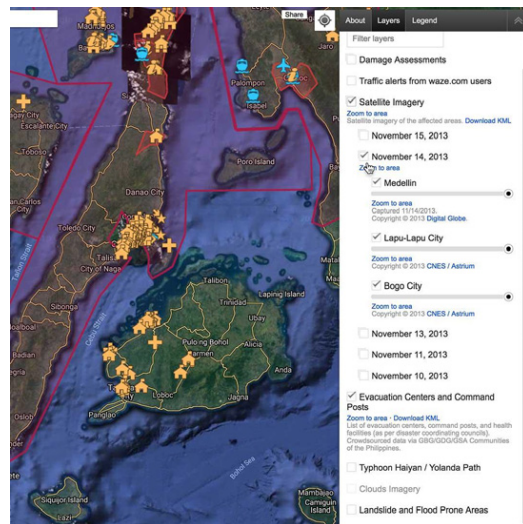
STEP 1 OF 3

Let's say you were writing about Typhoon Yolanda, which hit Southeast Asia in 2013, and wanted to feature a map of just Evacuation Centers in your story. You would just open the **Layers** panel and uncheck boxes to remove information you don't want to appear. Whatever layers you check will be displayed on the map when you copy and share its URL or embed code, which will be explained in an upcoming screen.



STEP 2 OF 3

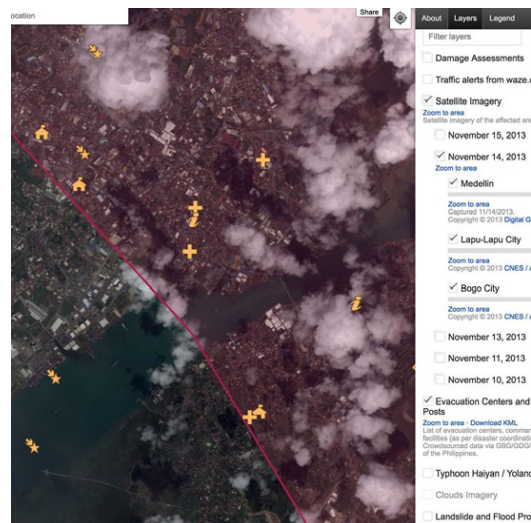
You can also choose a specific area of the map to display, and select satellite imagery based on the date it was collected. On the **Layers** tab click **Satellite Imagery**, then the date.



STEP 3 OF 3

To better feature this imagery, click **Zoom to area** and position your map. Use the Zoom tool to get closer to the details in the satellite imagery.

The final layer and position you choose will be saved and appear in the map when you share it.

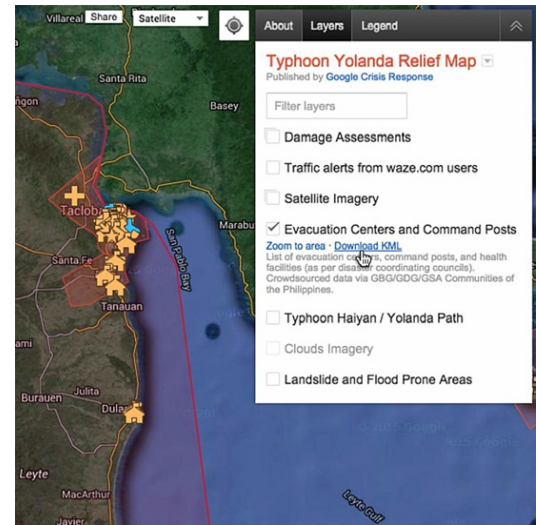


Customization for advanced users.

SINGLE STEP

Whenever possible, Crisis Response provides a download link with individual information layers on the Crisis Map so that it can be downloaded as KML (Keyhole Markup Language) data.

A reporter can, for example, use that KML data in Google Earth Pro to help create a customized video tour of the crisis area. See our [Google Earth](#) lesson for information about creating, customizing and exporting video tours for news reports.

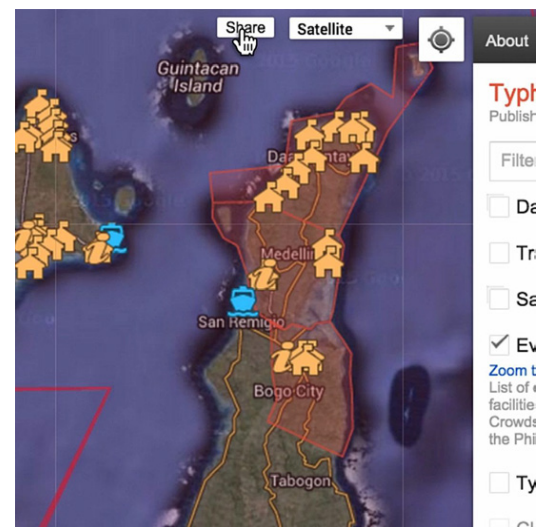


Sharing the Crisis Map.

The Google Crisis Response team makes it easy for trusted news sources to share and embed Crisis Maps as part of their coverage.

STEP 1 OF 2

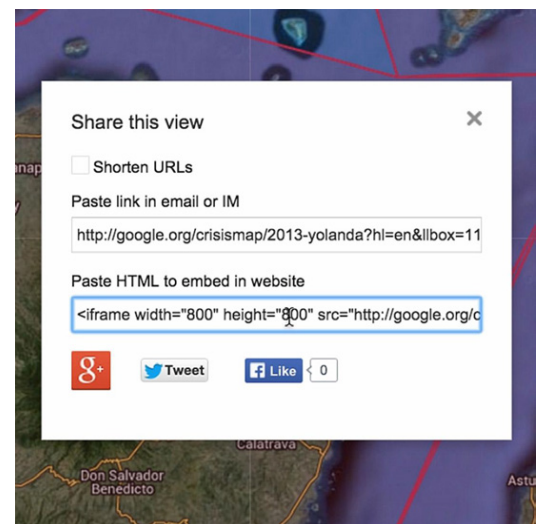
Once you've customized the Crisis Map with the information and area you want to feature, click **Share** at the top of the map.



STEP 2 OF 2

In the pop-up window you can share the map on social media or copy the map's URL.

You can also embed the map on your website using the iframe provided. In that code, you can customize the height and width of the map embed.

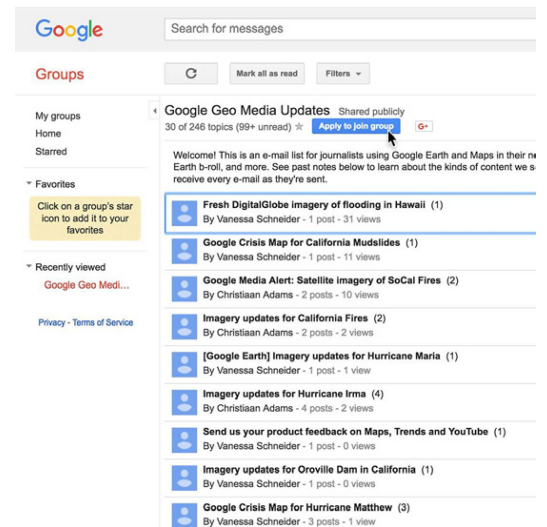


Receive alerts for new Crisis Maps.

To find out when the Google Response Team launches a new Crisis Map, sign up for our Google Geo Media Updates group.

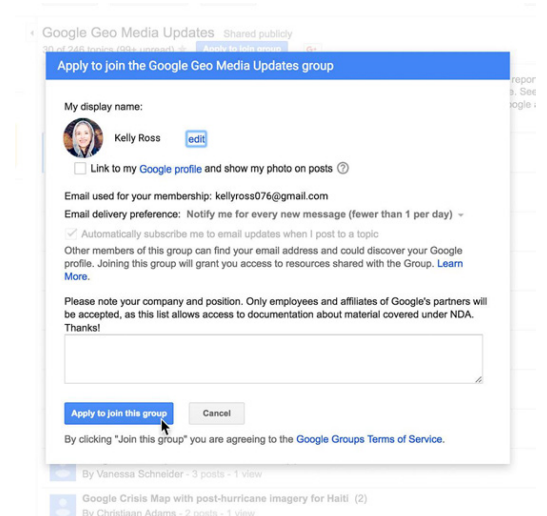
STEP 1 OF 2

To sign up, go to <https://groups.google.com/forum/#!forum/geomedia-updates> and click **Apply to join group**.



STEP 2 OF 2

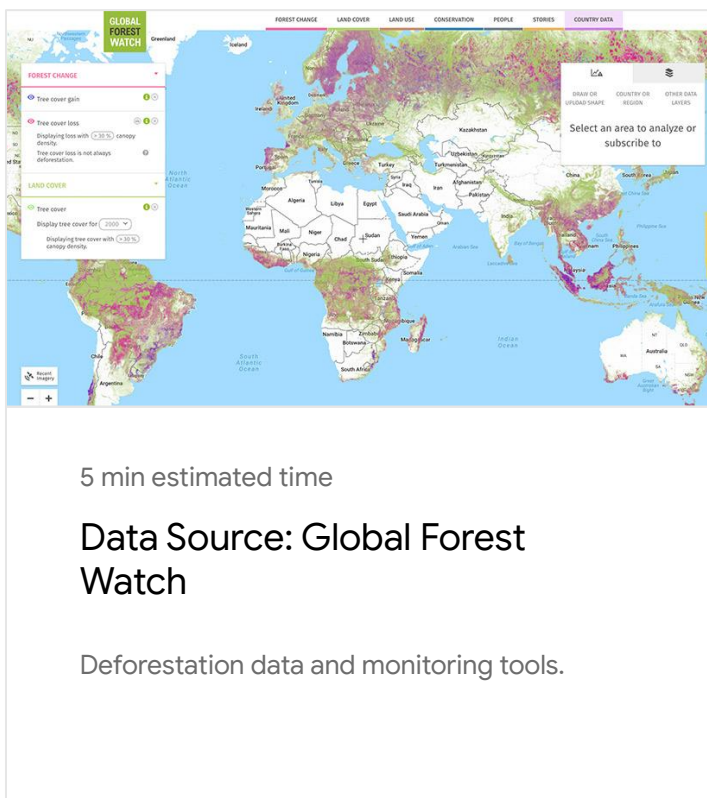
Edit your display information, email preferences, and provide your company info. Then click **Apply to join group**.



Congratulations!

You completed “Google Crisis Map:
Diagramming a disaster and its response.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



5 min estimated time

Data Source: Global Forest Watch

Deforestation data and monitoring tools.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 05

Data Source: Global Forest Watch

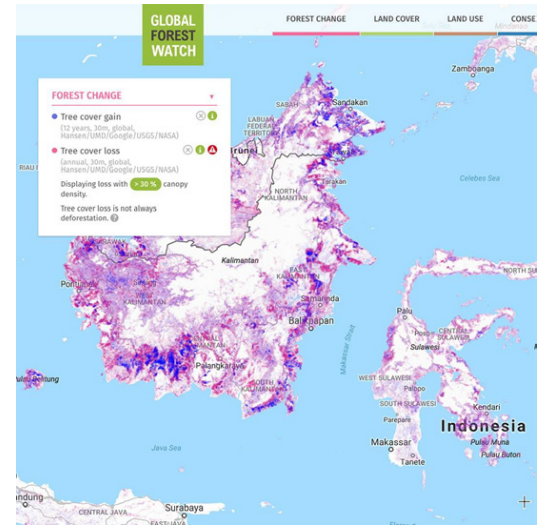
Deforestation data and monitoring tools.

Lesson overview

What is Global Forest Watch?

Global Forest Watch (GFW) is a remarkable collaboration of the World Resources Institute, Google, the Jane Goodall Institute and other partners that provides data and tools to help journalists, governments and researchers understand harmful forest loss and its effect on climate change.

In the past, people have struggled to understand when and where forests are cleared, why it happens, and who is responsible. Using satellite data and cloud computing, GFW monitors the world's forests in near real time—delivering data about deforestation, fires, climate and commodities that would have formerly taken years to gather and process.



- 1 Reporting on climate change.
- 2 Interactive map of forest change.
- 3 Customize your interactive map.
- 4 Country profiles.
- 5 Monitoring fires on GFW.
- 6 Analyze commodity supply chains.
- 7 Learn more about GFW.

For more Data Journalism lessons, visit:

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Reporting on climate change.

SINGLE STEP

The GFW platform will help you report on climate change by providing timely, in-depth information on carbon emissions from tropical deforestation. You can explore landscapes and analyze carbon data on our interactive map, as well as customize reports to show only the data you want to see and share it with your story.

Several tools also help you monitor change over time and compare countries, jurisdictions and areas of interest. You can even monitor deforestation in conjunction with carbon emissions, and look at data on canopy density, carbon stores in trees and carbon stores in soil.

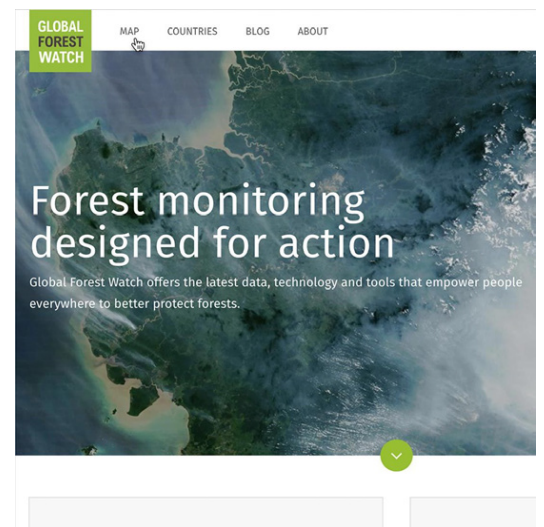


Interactive map of forest change.

The central tool of GFW is an interactive map depicting the world's forest change (tree cover and loss) powered by data sets that stretch from 2000 to 2018.

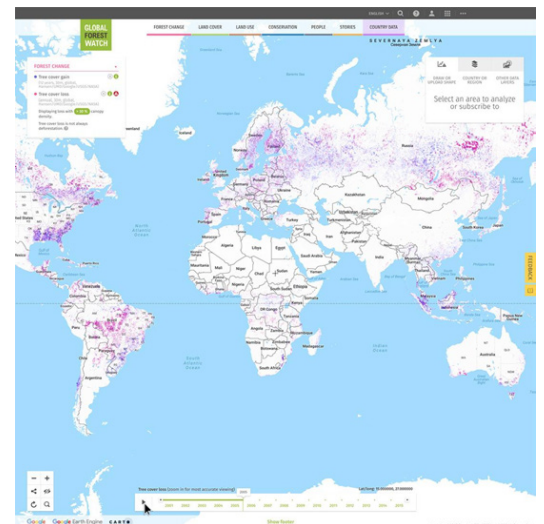
STEP 1 OF 4

To explore the interactive map, first go to globalforestwatch.org, then **Map**.



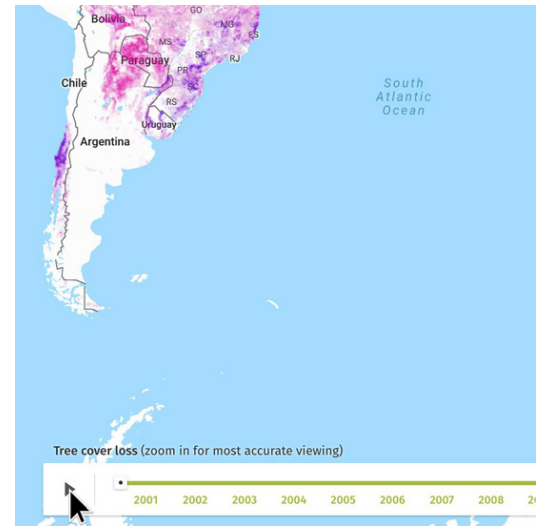
STEP 2 OF 4

Use the map to look at forests around the world.



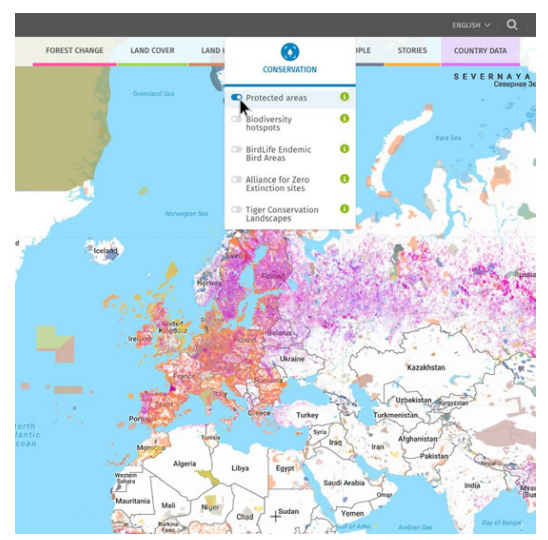
STEP 3 OF 4

To focus on subsets of time, use the slider at the bottom of the map.



STEP 4 OF 4

Turn specialty layers on or off to show factors such as conservation areas, land use, and intact forest landscapes.

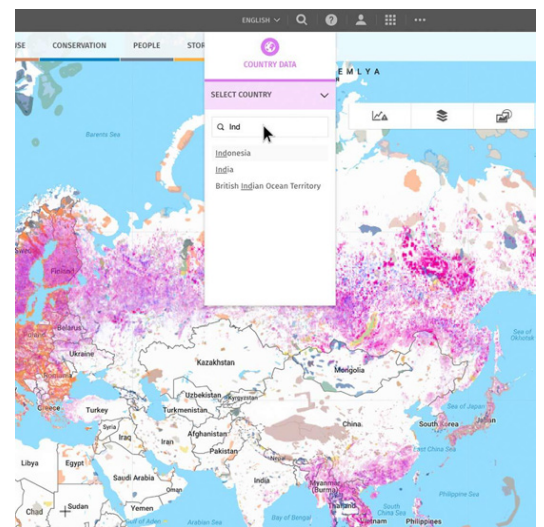


Customize your interactive map.

The interactive map also allows you to get more granular views of impacts in specific regions you may be covering and to modify the look of the map per your needs.

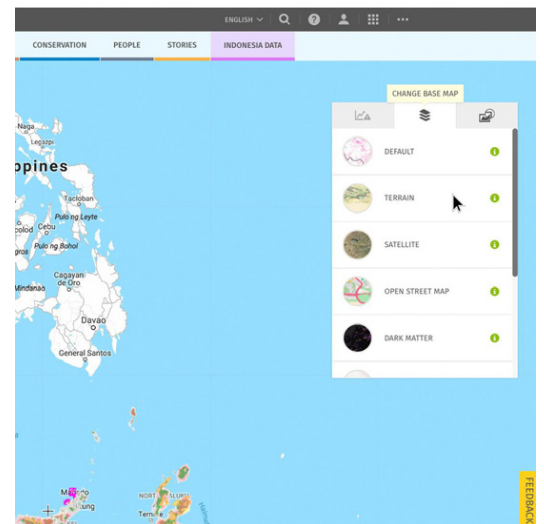
STEP 1 OF 2

Customize your map view by clicking **Country Data** and selecting a country or region or drawing your own area to analyze.



STEP 2 OF 2

Choose from a variety of base map options such as satellite, terrain or road maps.

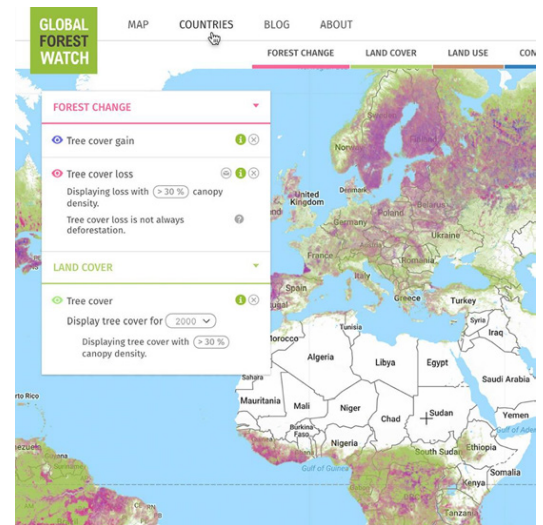


Country profiles.

If you know what country you want to research, you can go straight to its profile.
GFW carries data on 204 countries.

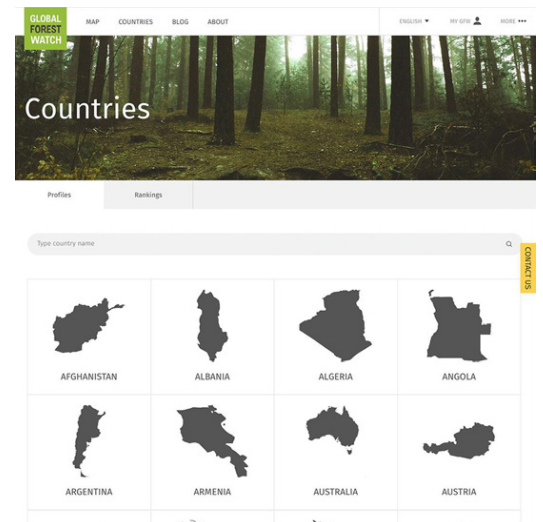
STEP 1 OF 5

Rollover the navigation bar to reveal the top nav. Then click **Countries**.



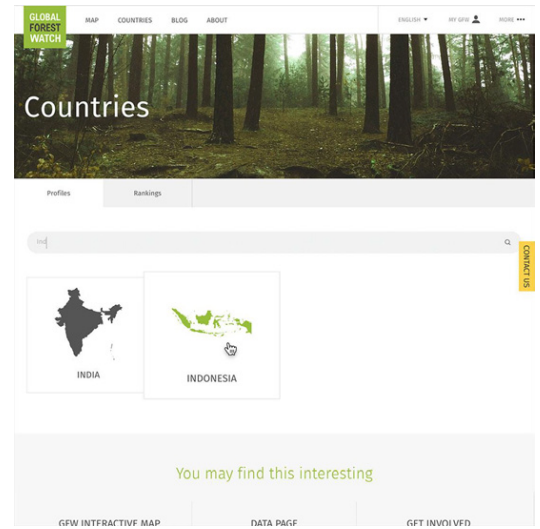
STEP 2 OF 5

Choose from the 204 countries



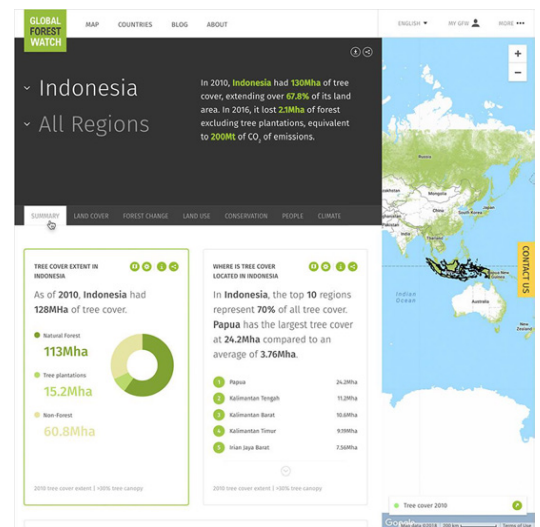
STEP 3 OF 5

Using Indonesia as an example, you can see a remarkable amount of data.



STEP 4 OF 5

Click through the tabs to reveal statistics on land cover, forest loss and management, economic impact and employment related to forests, governmental management, reforestation, CO2 emissions, carbon stocks and international agreements.



STEP 5 OF 5

You can also see a country's forest profile in context with other countries by choosing **Rankings**. This shows the countries with greatest tree cover loss at the top: Russia, Brazil and Canada.



Monitoring fires on GFW.

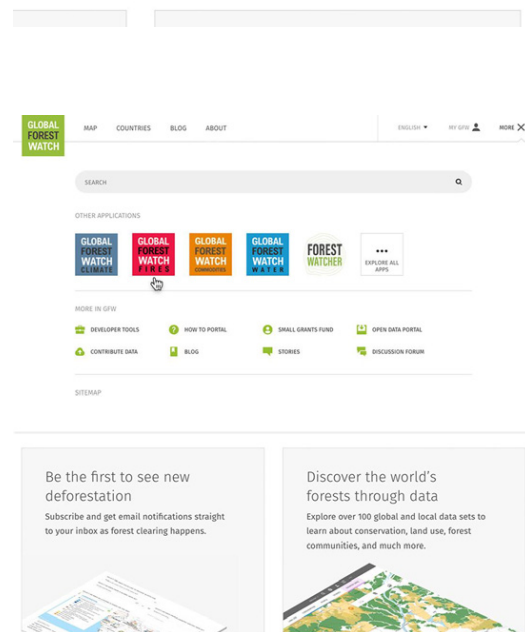
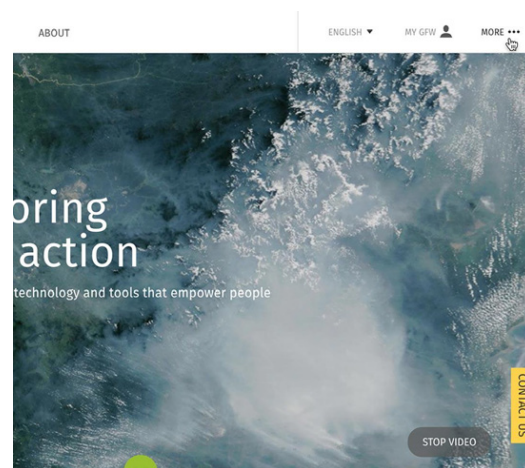
GFW Fires is a tool to monitor emerging fires, identify potential causes, and analyze impacts of fires on forests and people.

STEP 1 OF 5

From any page, you can click **More** to access additional GFW apps.

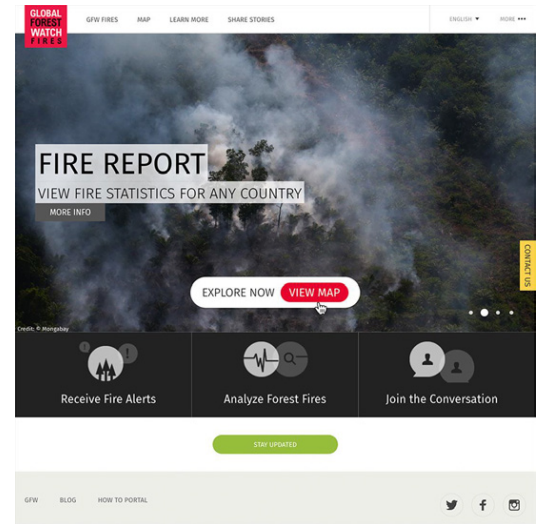
STEP 2 OF 5

Select **Global Forest Watch Fires**.



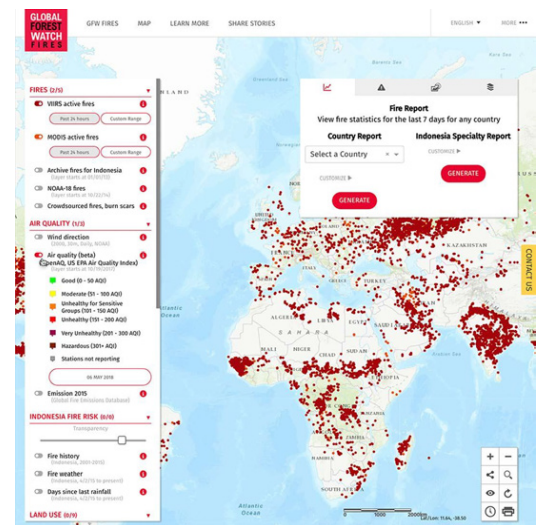
STEP 3 OF 5

Click **View Map**.



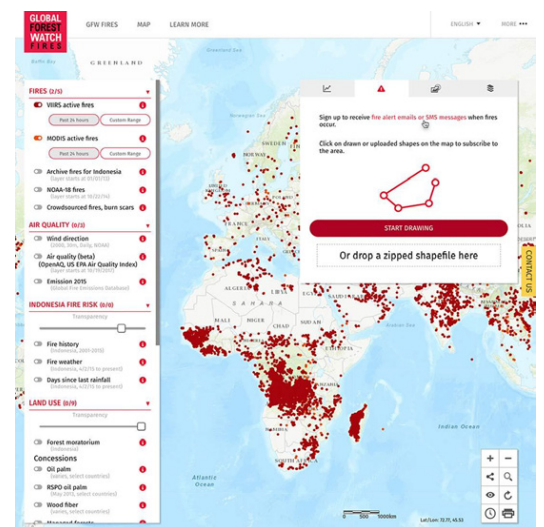
STEP 4 OF 5

Here you can see fires around the world, look at air quality and haze, and quickly access a fire report for any country in the past seven days.



STEP 5 OF 5

You can also sign up to receive fire alerts via SMS or email for any region you need. Just click **Start Drawing** and outline the desired area. Then click the **fire alerts email** or **SMS messages** link.

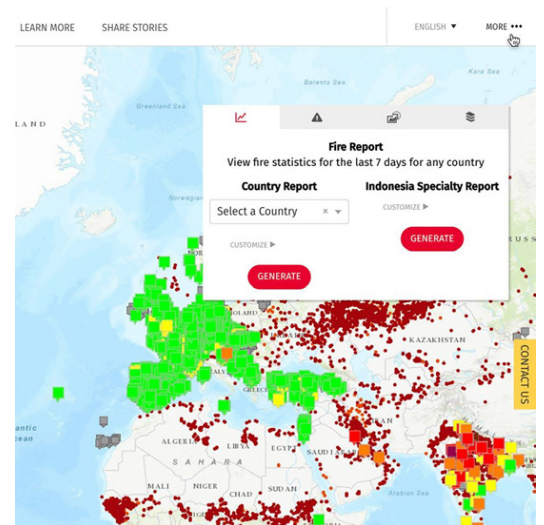


Analyze commodity supply chains.

The GFW Commodities tool illuminates deforestation related to commodity supply chains for palm oil, soy, beef, wood pulp, and other products. For example, you can monitor activity in Indonesia near palm oil mills to see if there is corresponding forest loss in the area. This tool may be extremely useful for journalists covering the intersection of business interests and environmental preservation.

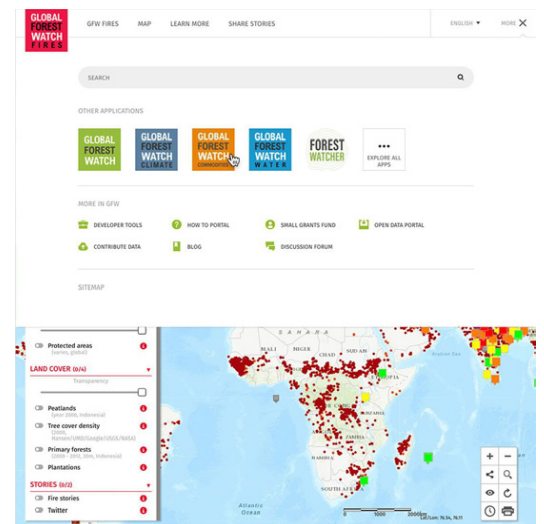
STEP 1 OF 6

From any page, you can click **More** to access additional GFW apps.



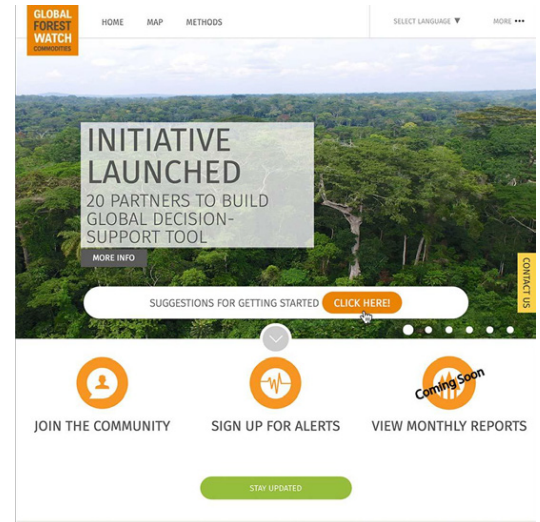
STEP 2 OF 6

Click **Global Forest Watch Commodities**.



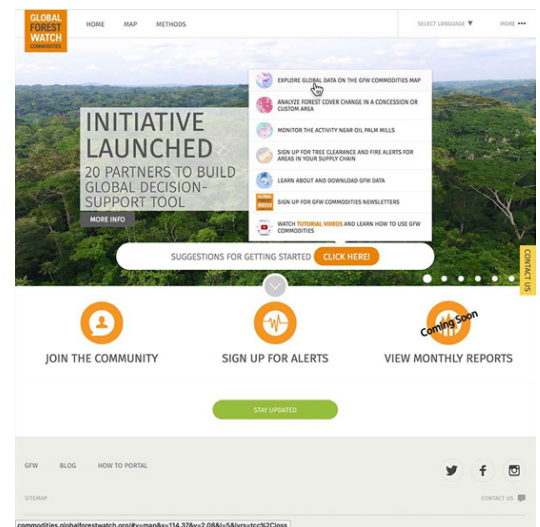
STEP 3 OF 6

Click the **Click Here!** button.



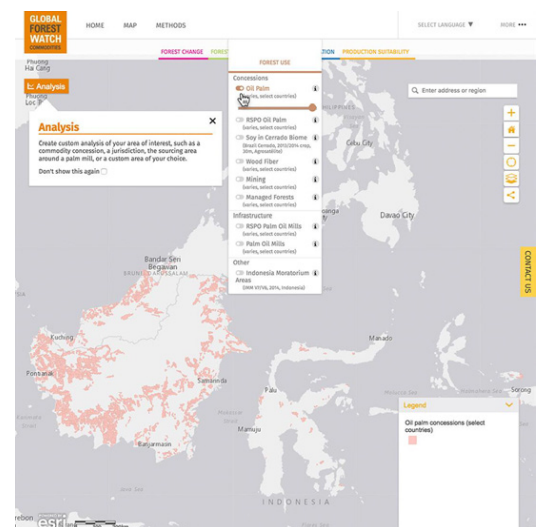
STEP 4 OF 6

Select **Explore Global Data on the GFW Commodities Map**.



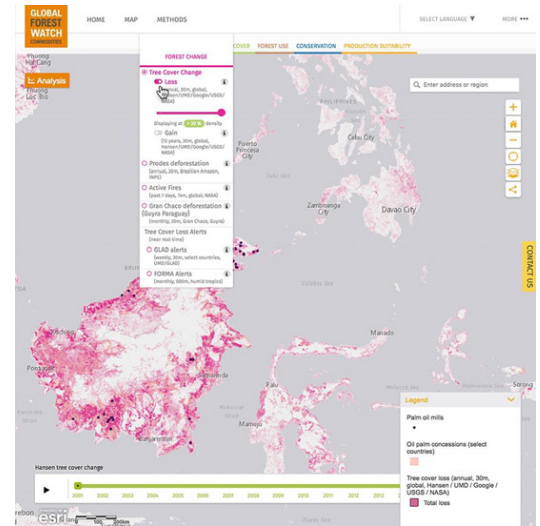
STEP 5 OF 6

Under **Forest Use**, turn on **RSPO Palm Oils Mills** and **Palm Oil Mills**.



STEP 6 OF 6

Under **Forest Change**, turn on **Loss** to see the Tree Cover Change in that area. You can adjust the opacity of the layer with the slider so you can continue seeing the details beneath.

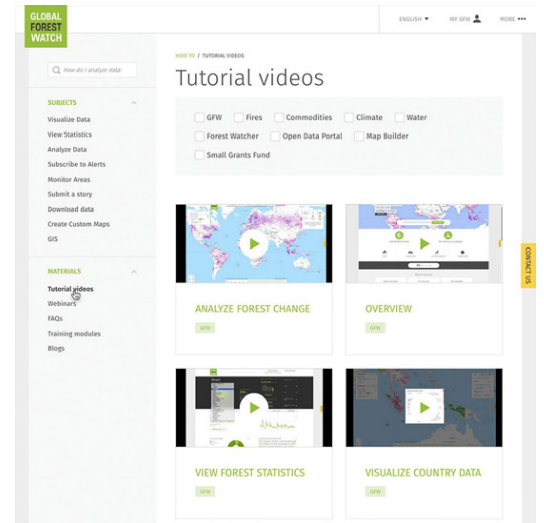


Learn more about GFW.

SINGLE STEP

The GFW platform is an incredibly rich source of information for journalists. While this lesson provides an overview of its tools, there are many video tutorials you can watch to dive deeper.

For videos on analyzing forest change, visualizing country data, comparing countries and much more, watch [Global Forest Watch Tutorial](#) videos.



Congratulations!

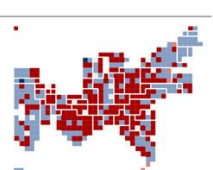
You completed “Data Source: Global Forest Watch.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:

House Vote 208 - On Passage

Bill: H.R.1431 - EPA Science Advisory Board Reform Act of 2017
Description: EPA Science Advisory Board Reform Act of 2017
Result: Passed by a margin of 17 votes (simple majority required to pass)
Date: March 30, 2017 at 10:40 a.m. ([vote source](#))

Yes	229	227
No	193	188
Present	0	
Not Voting	8	



	YES VOTES	NO VOTES	OTHER
Republicans	227	5	5
Democrats	2	188	3
Independents	0	0	0

5 min estimated time

Data Source: Election DataBot

A robust tool to help journalists cover U.S. elections

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 06

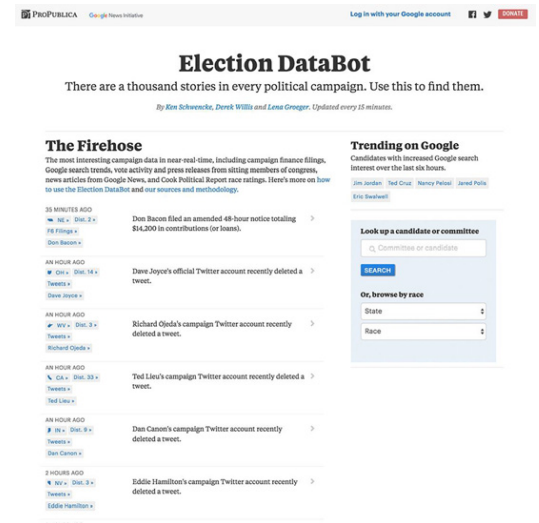
Data Source: Election DataBot

A robust tool to help journalists cover U.S. elections

Lesson overview

An election data hub created by ProPublica and Google News Initiative.

There are countless stories to tell about U.S. political campaigns—and data can help you tell them. In collaboration with the public interest journalism nonprofit [ProPublica](#), we created Election Databot to help you find the most interesting data in near real time about presidential and congressional candidates in the U.S.



- 1 Stay up to date with "The Firehose."
- 2 Analyzing campaign finance data.
- 3 Knowing what organizations are spending money in a race.
- 4 Seeing shifts in campaign donations.
- 5 Tracking data from polls.
- 6 Learn from Google Trends search data.
- 7 Setting alerts for races you care about.
- 8 More ways to learn about Election DataBot.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

Stay up to date with "The Firehose."

SINGLE STEP

The centerpiece of the Databot is the Firehose, a stream of information related to U.S. elections that is updated every 15 minutes and pulled from a variety of sources. Here, you'll find the most interesting data including campaign finance filings, Google search trends, new polls, forecasts from FiveThirtyEight, Cook Political Report race ratings and vote activity from sitting members of Congress. It will tell you when a super PAC spends money in a race you care about, when an incumbent member of Congress is the only person to vote against a piece of legislation, when key polls change, and much more.

The Databot uses information from multiple high-quality, nonpartisan sources, including government and commercial websites. To learn about our methodology, read [this article](#) on our sources.

The screenshot shows the 'Election DataBot' interface. At the top, it says 'PROPUBLICA Google News Initiative' and 'Log in with'. The main heading is 'Election DataBot' with the subtext 'There are a thousand stories in every political campaign. Use'. Below this is a byline: 'By Ken Schwencke, Derek Willis and Lena Groeger, Updated every 15 minutes.' The main content area is titled 'The Firehose' and includes a description: 'The most interesting campaign data in near-real-time, including campaign finance filings, Google search trends, vote activity and press releases from sitting members of congress, news articles from Google News, and Cook Political Report race ratings. Here's more on how to use the Election DataBot and our sources and methodology.' To the right, there is a 'Trends' section with 'Candidates w Interest over' and names like 'Jim Jordan' and 'Eric Swalwell'. Below the main content, there are three entries, each with a state abbreviation and a timestamp: '35 MINUTES AGO' for NE, 'AN HOUR AGO' for CH, and 'AN HOUR AGO' for WV. Each entry includes a title, a brief description, and a link to the full story. For example, the first entry is 'Don Bacon filed an amended 48-hour notice totaling \$14,200 in contributions (or loans)'. On the far right, there is a 'Look up' search bar and a 'SEARCH' button, along with a section for 'Or, browse' with filters for 'State' and 'Race'.

Analyzing campaign finance data.

Our Firehose draws from a companion tool, the Federal Election Commission (FEC) Itemizer, to provide detailed data about campaign finance filings. Learning to differentiate and interpret these filings can help you find stories.

STEP 1 OF 3

Comparing candidates and races. Election Databot ranks House and Senate candidates in terms of money raised and spent, both within their states and nationally.

Denham for Congress | 2016 cycle
CANDIDATE FOR CONGRESS
 Treasurer: Baaser, David
 Other Cycles: 2010 2012 2014 2018

\$3,345,327 Total Receipts
\$4,183,055 Total Spending
\$0 Independent Expenditures

\$326,702 Cash on Hand
\$4,847 Debts Owed

Totals Through: Dec. 31, 2016 | Next Filing Due: July 15

Electronic Filings
BY REPORT TYPE

Report title	Amendment	Form type	Date Filed	End Date	Receipts	Spending
YEAR-END		F3	Jan. 30	Dec. 31, 2016	\$4,201.25	\$52,251.72
MISCELLANEOUS DOCUMENT		F99	Dec. 30, 2016			
POST-GENERAL		F3	Dec. 8, 2016	Nov. 28, 2016	\$188,593.42	\$1,443,582.68
STATEMENT OF CANDIDACY		F2	Nov. 10, 2016			
48 HOUR NOTICE		F6	Nov. 6, 2016		\$0.00	\$0.00
48 HOUR NOTICE		F6	Nov. 5, 2016		\$3,500.00	\$3,500.00
48 HOUR NOTICE		F6	Nov. 5, 2016		\$3,000.00	\$3,000.00
48 HOUR NOTICE		F6	Nov. 5, 2016		\$70,300.00	\$70,300.00
48 HOUR NOTICE		F6	Nov. 3, 2016		\$39,942.73	\$39,942.73
48 HOUR NOTICE		F6	Nov. 1, 2016		\$59,222.00	\$59,222.00
48 HOUR NOTICE		F6	Oct. 30, 2016		\$25,700.00	\$25,700.00
48 HOUR NOTICE		F6	Oct. 28, 2016		\$3,000.00	\$3,000.00

STEP 2 OF 3

Knowing what organizations are spending money in a race. You can track a race or candidate, so you get alerts when super PACs, and/or other committees spend money to influence an election. You also can track individual committees, seeing where and when they spend money in races.

House District 2 »
 Raised \$574,800 Ranked 1st
 Spent \$330,143 Ranked 1st

House District 6 »
 Raised \$405,690 Ranked 2nd
 Spent \$97,406 Ranked 2nd

House District 1 »
 Raised \$67,884 Ranked 3rd
 Spent \$36,803 Ranked 5th

STEP 3 OF 3

Seeing late shifts in campaign donations. In the final weeks before a state or general election, House and Senate candidates are required to file reports to the FEC within 48 hours of receiving a contribution of \$1,000 or more. These “48-Hour” reports can show that a candidate’s campaign is seeking donations from congressional colleagues, family members and out-of-state donors and can be an indication that a campaign believes it has a more difficult race than expected. For example, [the string of 48-Hour reports by then incumbent Kansas Republican Tim Huelskamp](#) included contributions from his mother. Soon after, Huelskamp lost his primary.

The screenshot shows the Election DataBot interface. At the top, it says "PROPUBLICA Google News Lab" and "Log in with your Google account". The main heading is "Election DataBot" with the tagline "There are a thousand stories in every political campaign. Use this to find them." Below this is a byline: "By Ken Schweske, Derek Willis and Lena Groeger, Sept. 8, 2016. Updated every 15 minutes."

The main content area is titled "The Firehose" and contains a list of recent reports:

- 2 HOURS AGO: OUTFRONT MEDIA LLC filed a report about spending \$6,300 in support of Democrat Jimmy Gomez.
- 2 HOURS AGO: Cfg Action Ohio filed a miscellaneous "999" report with the FEC.
- 6 HOURS AGO: National Union of Healthcare Workers Federal Committee On Political Education amended a previous report about spending \$7,797 in support of.
- 7 HOURS AGO: Cdn Owners of America, Inc. filed a report about spending \$18,807 in support of Republican Greg Gianforte.
- 8 HOURS AGO: Paul D. Ryan filed a miscellaneous "999" report with the FEC.
- 10 HOURS AGO: Theolint (Correa), Moshah (Luis) Edwards filed a miscellaneous "999" report with the FEC.
- A DAY AGO: Arizona Republican Party filed a miscellaneous "999"

On the right side, there is a "Trending on Google" section listing candidates: AMY DUGWORTH, WILL HURD, MARTHA MCCALLUM, DANIEL GISSA, and FLOR M. STEFANEK. Below this is a search box "Look up a candidate or committee" with a "SEARCH" button and a "Or, browse by race" section with dropdown menus for "United States" and "Race". At the bottom right is the "Electionland" logo with the text "Are you a reporter interested in covering voting issues this election?"

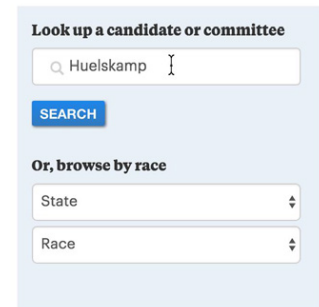
Knowing what organizations are spending money in a race.

You can track a race or candidate, so you get alerts when super PACs, and/or other committees spend money to influence an election. You also can track individual committees, seeing where and when they spend money in races.

Say you're writing a story on fundraising for Kansas Republican Tim Huelskamp.

STEP 1 OF 4

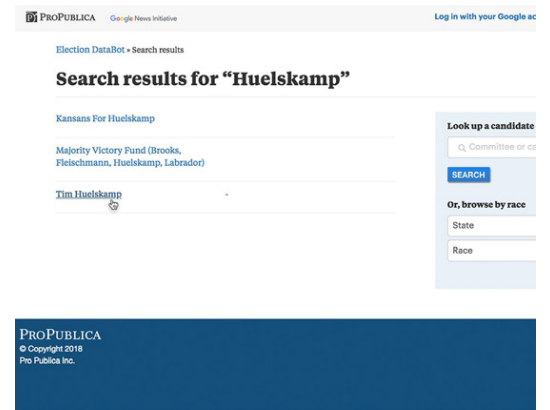
On the homepage, type the candidate's name into the search field.



The screenshot shows a search box with the text "Huelskamp" entered. Below the search box is a blue "SEARCH" button. Underneath, there is a section titled "Or, browse by race" with two dropdown menus labeled "State" and "Race".

STEP 2 OF 4

You'll land on an overview page that features the latest stories in The Firehose as well as links to detailed spending info in the right sidebar.



The screenshot shows the search results page for "Huelskamp". The page header includes "PROPUBLICA" and "Google News Initiative". The main heading is "Search results for 'Huelskamp'". Below this, there are three search results listed: "Kansas For Huelskamp", "Majority Victory Fund (Brooks, Fleischmann, Huelskamp, Labrador)", and "Tim Huelskamp". On the right side, there is a sidebar with a search box and a "SEARCH" button, along with a section titled "Or, browse by race" with "State" and "Race" dropdown menus. The footer of the page includes "PROPUBLICA © Copyright 2016 Pro Publica Inc."

STEP 3 OF 4

Click **See all fundraising** in the right sidebar.

Tim Huelskamp (Rep.)
 Candidate for Kansas House District 1
 Opponent: Roger W. Marshall (Rep.) | See Race >

The Firehose
 Campaign data from Tim Huelskamp, including real-time campaign finance filings, votes, press releases, articles from Google News, Cook Political Report rating changes and Google Trends from the last 60 days. Updated every 15 minutes. See more about our sources and methodology.

- 17 DAYS AGO: Tim Huelskamp filed a regular campaign finance report for Jan. 1, 2018 to Mar. 31, 2018, totaling \$49 raised, \$4,616 spent and \$66,819 cash on hand.
- 1 YEAR AGO: released a press release titled "Huelskamp Recognized as Best Taxpayer Friend in all of Congress".
- 2 YEARS AGO: released a press release titled "Rep. Tim Huelskamp Named Guardian of Small Business".
- 2 YEARS AGO: released a press release titled "Huelskamp Continues His Efforts to Care for our Veterans".
- 3 YEARS AGO: released a press release titled "IRS Commissioner Should Lose His Job".
- 2 YEARS AGO: released a press release titled "Huelskamp Comments on Permaline Victory on Lower Prairie Chickens".
- 2 YEARS AGO: released a press release titled "Huelskamp Honors Lamedo Veteran Gary Hiestand".
- 2 YEARS AGO: released a press release titled "Huelskamp Welcomes House Armed Services Subcommittee Chairwoman Harter to Fort Riley for Readiness Visit".

Fundraising
 The candidate has raised \$3,816, 78.3% of which comes from PACs. This puts them 27th in fundraising among Kan. House candidates and 871st in the country for House candidates.
[See all fundraising >](#)

Spending
 The candidate has spent \$21,286, which puts them 18th in spending among Kan. House candidates and 4306th in the country for House candidates.
[See all spending >](#)

Outside spending
 There has been no outside spending in support of the candidate. There has been no outside spending against the candidate.
[See more independent expenditures >](#)

Look up a candidate or committee

[SEARCH](#)

Or, know by race
 State:
 Race:

STEP 4 OF 4

Here you'll find how much he's received in contributions and how much has been spent campaigning.

Kansans For Huelskamp - 2016 cycle
 CANDIDATE FOR: **HOUSE**
 Treasurer: Schneweis, Ron E
 See Other Cycles: 2006, 2008, 2010, 2012, 2014, 2018

Total Receipts	Total Spending	Independent Expenditures
\$945,521	\$1,347,875	\$0
Cash on Hand	Debts Owed	
\$83,995	\$5,376	

Trails Through Dec. 31, 2016 (Next Filing Due: July 15)

Electronic Filings
[ELECTRONIC FILINGS REPORTS ONLINE](#)

Report title	Date Filed	End Date	Form type	Receipts	Spending	Cash	Amendment
YEAR-END >	Jan. 31, 2017	Dec. 31, 2016	F3	\$8,252.55	\$7,801.48	\$83,994.73	
PRE-GENERAL >	Oct. 22, 2016	Oct. 19, 2016	F3	\$2,345.00	\$3,971.42	\$85,643.64	
STATEMENT OF CANDIDACY >	Oct. 17, 2016		F2				
OCT QUARTERLY >	Oct. 15, 2016	Sept. 30, 2016	F3	\$213,090.35	\$519,484.62	\$87,270.06	
48 HOUR NOTICE >	Aug. 1, 2016		F6		\$3,000.00		
48 HOUR NOTICE >	July 31, 2016		F6		\$6,000.00		
48 HOUR NOTICE >	July 30, 2016		F6		\$1,200.00		
48 HOUR NOTICE >	July 29, 2016		F6		\$3,500.00		

Seeing shifts in campaign donations.

SINGLE STEP

In the final weeks before a state or general election, House and Senate candidates are required to file reports to the FEC within 48 hours of receiving a contribution of \$1,000 or more. These “48-Hour” reports can show that a candidate’s campaign is seeking donations from congressional colleagues, family members and out-of-state donors and can be an indication that a campaign believes it has a more difficult race than expected.

For example, the string of 48-Hour reports by then incumbent Kansas Republican Tim Huelskamp included contributions from his mother. Soon after, Huelskamp lost his primary.

PROPUBLICA | ELECTION DATABASE

Election Databot • FEC Itemizer • Committees • Kansas For Huelskamp - 2016 cycle

Kansans For Huelskamp - 2016 cycle

PROPUBLICA • NEWS
Treasurer: Schneweis, Ron E
See Other Cycles: 2006, 2008, 2010, 2012, 2014, 2018

Total Receipts \$945,521	Total Spending \$1,347,875	Independent Expenditures \$0
Cash on Hand \$83,995	Debts Owed \$5,376	

Tracks Through: Dec. 31, 2016 | Next Filing Due: July 15

Electronic Filings

Reported to: F3, F2, F4, F6, F7, F8

Report title	Date Filed	End Date	Form type	Receipts	Spending	Cash	Amendment
YEAR-END +	Jan. 31, 2017	Dec. 31, 2016	F3	\$6,252.55	\$7,901.46	\$83,994.73	
PRE-GENERAL +	Oct. 27, 2016	Oct. 19, 2016	F3	\$2,345.00	\$3,971.42	\$85,643.64	
STATEMENT OF CANDIDACY +	Oct. 17, 2016		F2				
OCT QUARTERLY +	Oct. 15, 2016	Sept. 30, 2016	F3	\$213,080.25	\$519,484.62	\$87,270.06	
48 HOUR NOTICE +	Aug. 1, 2016		F6	\$3,000.00			
48 HOUR NOTICE +	July 31, 2016		F6	\$6,000.00			
48 HOUR NOTICE +	July 30, 2016		F6	\$1,200.00			
48 HOUR NOTICE +	July 29, 2016		F6	\$3,500.00			

Tracking data from polls.

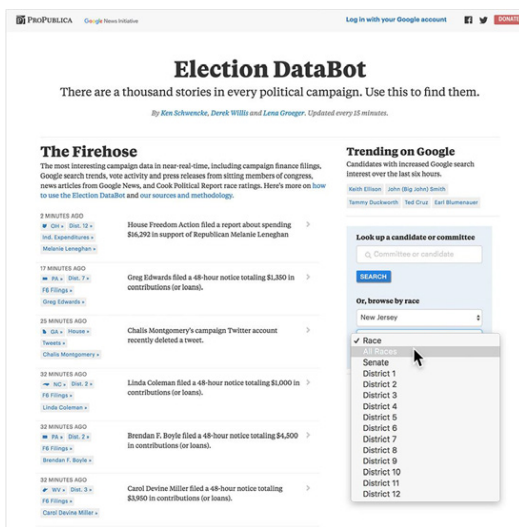
Polling and political analysis are not perfect, but they can both be useful tools for tracking an election. The Databot tracks both, providing alerts on new polls in the presidential and congressional races, election forecasts based on poll analysis, and race ratings.

We use Huffington Post Pollster API for polling data, FiveThirtyEight's Election Forecast to provide win probabilities and the Cook Political Report for independent, nonpartisan analysis that rates each race on a spectrum of "Solid" to "Toss-Up." When a poll or race rating changes, you can use that and other Election Databot information such as campaign finance filings, to try to understand why.

Say you want to see which way New Jersey's senate race is polling.

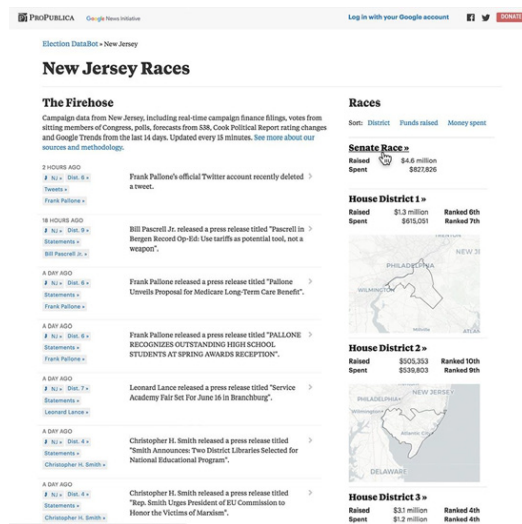
STEP 1 OF 3

Select New Jersey in the search box. Then click **All Races**.



STEP 2 OF 3

Choose the Senate Race.



STEP 3 OF 3

You'll see Cook Political Report rates this as a "Likely Democratic" win.

PHOPUBLICA Google News Initiative Log in with your Google account

Election DataBot • New Jersey • Senate Race

New Jersey Senate Race

Cook rates this race as "Likely Democratic."

Jerry B. Watson » (Rep.)		Muhammad Usman » (Dem.)		Bob Menendez » (Dem.-D)	
CAMPAIGN		CAMPAIGN		CAMPAIGN	
Raised	Spent	Raised	Spent	Raised	Spent
N/A	N/A	N/A	N/A	\$4.5 million	\$802,055
OUTSIDE SPENDING		OUTSIDE SPENDING		OUTSIDE SPENDING	
Supporting	Opposing	Supporting	Opposing	Supporting	Opposing
\$0	\$0	\$0	\$0	\$0	\$0

Rich Pezzullo » (Rep.)		Sean A. Thom » (Dem.)		Jeff Bell » (Rep.)	
CAMPAIGN		CAMPAIGN		CAMPAIGN	
Raised	Spent	Raised	Spent	Raised	Spent
\$114,764	\$13,107	\$11,980	\$2,772	\$4,830	\$4,892
OUTSIDE SPENDING		OUTSIDE SPENDING		OUTSIDE SPENDING	
Supporting	Opposing	Supporting	Opposing	Supporting	Opposing
\$0	\$0	\$0	\$0	\$0	\$0

The Firchosc

Campaign data from New Jersey Senate Race, including real-time campaign finance filings, votes, articles via Google News, Cook Political Report rating changes and Google Trends from the last 60 days. Updated every 15 minutes. See more about our sources and methodology.

3 DAYS AGO
[Robert Menendez](#) released a press release titled "Menendez, Warren, Schata Beyond CFPB Received More than 20,000 Consumer Complaints following Equifax Breach".
[Robert Menendez](#)

3 DAYS AGO
 Robert Menendez was mentioned in an article in the U.S. News & World Report titled "Menendez Seems in Good Shape to Win a Third Term".
[Robert Menendez](#)

Trending on Google

How Google search interest has changed over the last seven days.

Interest over time
 New Jersey, Past 7 days.

- Sean A. Thom
- Muhammad Usman
- Rich Pezzullo
- Jerry B. Watson

Learn from Google Trends search data.

SINGLE STEP

What internet users search for can be a useful indicator. While search interest is not a perfect predictor of electoral performance, it has caught the attention of researchers. In the 2016 Republican presidential primary, Google search interest tracked closely with results in a number of states.

The Databot uses data from Google Trends to show when search interest — represented by a sample of Google searches — increases for a particular candidate within his or her home state. Many candidates see relatively little search interest, so we try not to surface small increases, instead looking for rising interest over a number of hours.

Rhode Island Senate Race [GET ALERTS FOR THIS RACE](#)
Cook rates this race as "Solid Democratic."

Sheldon Whitehouse » (Dem.-D)		Bob Flanders » (Rep.)		Bobby Nardolillo » (Rep.)	
CAMPAIGN		CAMPAIGN		CAMPAIGN	
Raised	Spent	Raised	Spent	Raised	Spent
\$3.4 million	\$1.4 million	\$743,091	\$316,063	\$123,754	\$84,402
OUTSIDE SPENDING		OUTSIDE SPENDING		OUTSIDE SPENDING	
Supporting	Opposing	Supporting	Opposing	Supporting	Opposing
\$0	\$0	\$0	\$0	\$0	\$0

The Firchose
Campaign data from Rhode Island Senate Race, including real-time campaign finance filings, news, articles via Google News, Cook Political Report rating, changes and Google Trends from the last 60 days. Updated every 15 minutes. [See more about our sources and methodology.](#)

- 4 DAYS AGO: Sheldon Whitehouse released a press release titled "Public Service Loan Repayment Program PSA".
- 3 DAYS AGO: Sheldon Whitehouse released a press release titled "Carpet, Whitehouse Issued Alarm about 'Thousands of Pages of Unreleased Communications between Pruitt and Special Interest'".
- 3 DAYS AGO: Sheldon Whitehouse released a press release titled "Friend Planning Pruitt's Morocco Trip".
- 4 DAYS AGO: Sheldon Whitehouse released a press release titled "Senate Declares April 29-May 5 National Senior Corps Week".

Trending on Google
How Google search interest has changed over the last seven days.

Interest over time
Rhode Island: Past 7 days.

Sheldon Whitehouse
Bob Flanders
Bobby Nardolillo

Google Trends

Setting alerts for races you care about.

Following a specific race? You can set alerts to notify you when new filing or data points happen.

STEP 1 OF 2

Navigate to the race you want to follow and sign into your Google account.

[Log in with your Google account](#)

ice [GET ALERTS FOR THIS RACE](#)

nders »

Bobby Nardolillo »

(Rep.)

CAMPAIGN

Spent
\$316,063

Raised \$123,754 **Spent** \$94,402

ING

OUTSIDE SPENDING

Opposing
\$0

Supporting \$0 **Opposing** \$0

Trending on Google

Kelly | [Log out](#) | [Manage Alerts](#)

:1

Alerts for this race are off

ate Race

[GET ALERTS FOR THIS RACE](#)

atic.”

STEP 2 OF 3

Click **Get alerts for this race** to follow.

Trending on Go

t 1, including real-time campaign finance filings, changes and Google Trends from the last 60 days. [our sources and methodology.](#)

How Google search interest the last seven days.

STEP 3 OF 3

You can edit and manage alerts by clicking **Manage alerts** on the top right. This will enable you to customize the elections you follow and frequency of emails you receive.

:1

ate Race

 STOP ALERTS FOR THIS RACE

atic.”

Trending on Go

t 1, including real-time campaign finance filings, changes and Google Trends from the last 60 days. [our sources and methodology.](#)

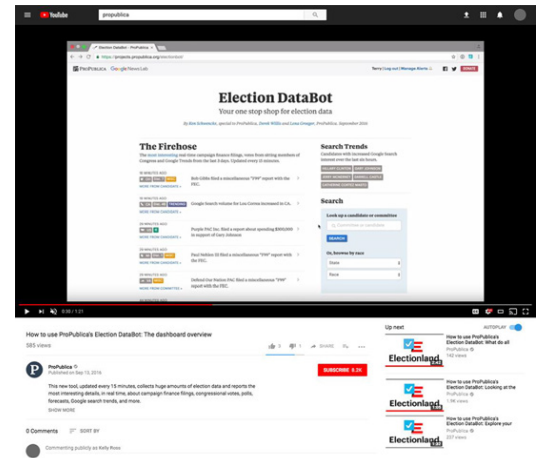
How Google search interest the last seven days.

More ways to learn about Election DataBot.

SINGLE STEP

For additional tutorials on Databot, watch our series of [YouTube videos](#).

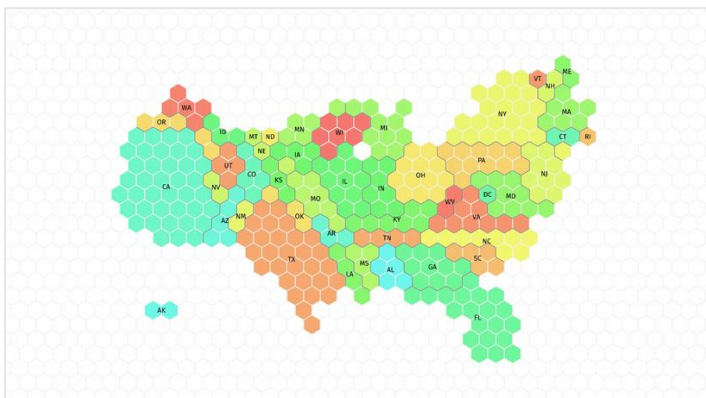
Read our Medium article by [Google News Initiative Data Editor Simon Rogers: Election Databot: Harnessing the power of the matrix.](#)



Congratulations!

You completed “Data Source: Election DataBot.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



5 min estimated time

Visualizing Data: Introduction to Tilegrams

A new way to map data.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 07

Visualizing Data: Introduction to Tilegrams

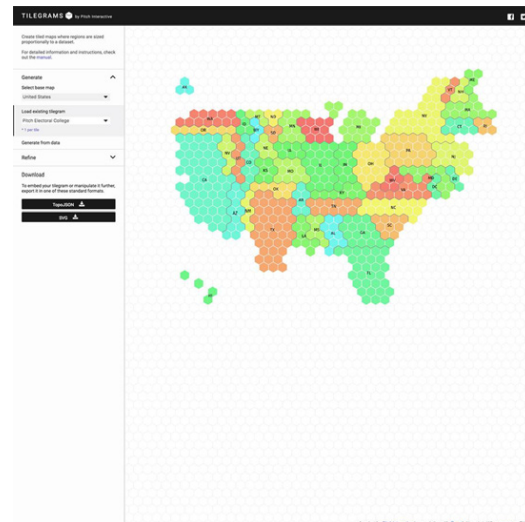
A new way to map data.

Lesson overview

A free data visualization tool.

Short for “tiled cartogram,” a Telegram is a map made of tiles where regions are proportional to a data set. Tilegrams can represent demographic data more accurately than traditional geographic maps, but still retain a familiar shape. For example, this Telegram of the United States shows population and better illustrates how many people inhabit each region—yet the U.S. landform is still recognizable.

Tilegrams is not just for population-related data; you can use it to visualize almost any type of proportional comparison in a geographic region. Check out the tool, here <https://pitchinteractiveinc.github.io/tilegrams/>



- 1 Access our existing Tilegrams.
- 2 Refining an existing Telegram.
- 3 Adding and removing tiles.
- 4 Exporting existing Tilegrams.

For more Data Journalism lessons, visit:

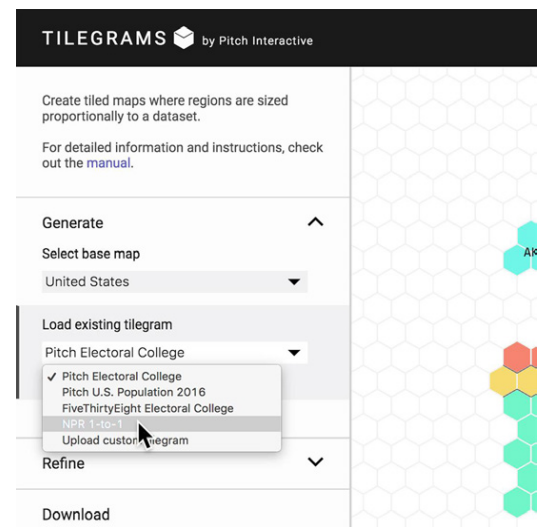
newsinitiative.withgoogle.com/training/course/data-journalism

Access our existing Telegrams.

Developed by Pitch Interactive, Telegrams are free for everyone to use.

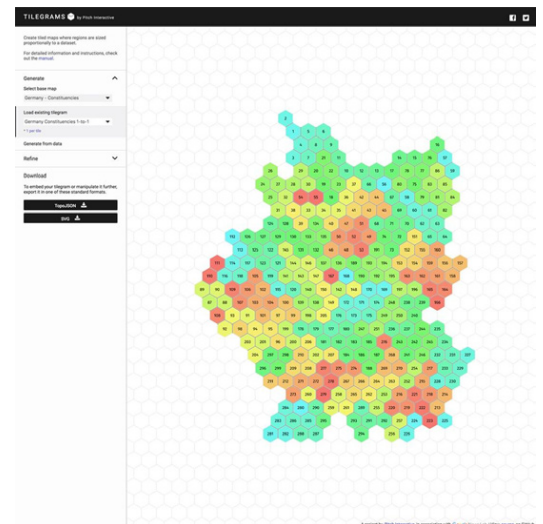
STEP 1 OF 2

You can browse the [existing selection of Telegrams](#), which includes maps of the U.S. from Pitch, NPR and FiveThirtyEight,



STEP 2 OF 2

There are also maps for Germany, France and a growing list of countries.

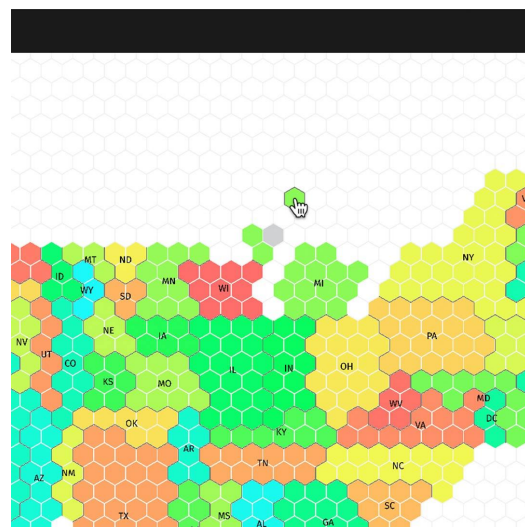


Refining an existing Tilegram.

Tilegrams use algorithms to compile visuals, so it's inevitable that they may display visual inaccuracies. To tell a complete and accurate story, there are many ways you can modify your Tilegram. If you've loaded one, there are many ways you can modify it.

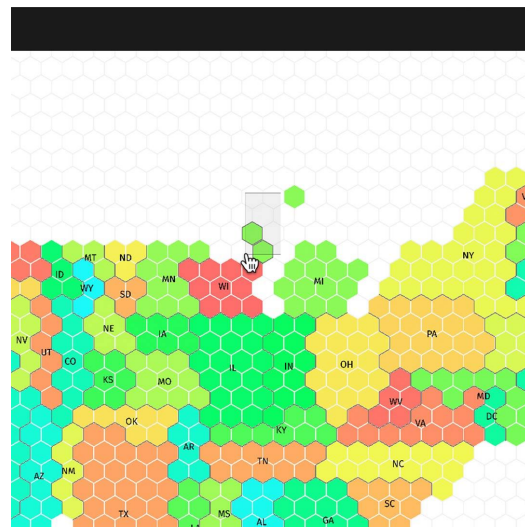
STEP 1 OF 4

Click and drag any tile to move it around.



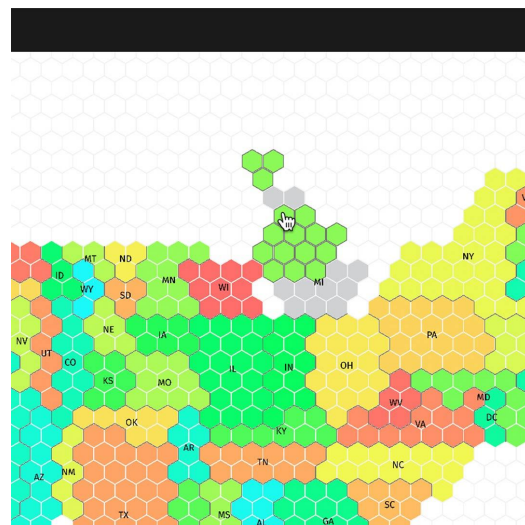
STEP 2 OF 4

To move multiple tiles, click and drag a rectangular marquee around them and then drag them around.



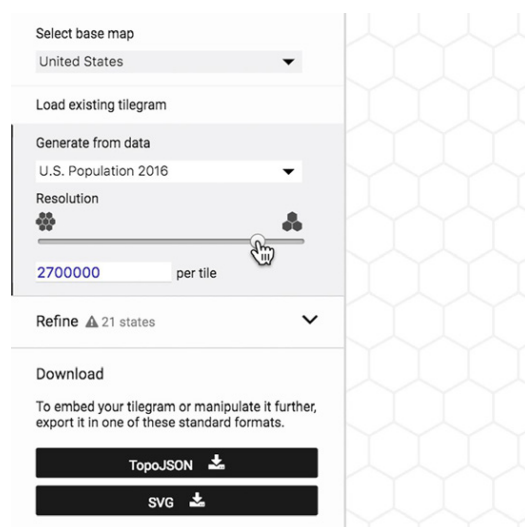
STEP 3 OF 4

To move a specific region, double click any tile in it to select them all and then drag the whole region.



STEP 4 OF 4

To adjust the resolution, click the **Generate from data** button and use the slider.

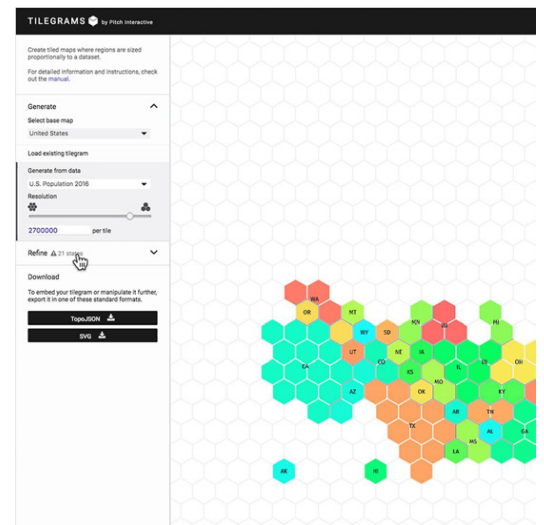


Adding and removing tiles.

As you make refinements to your data, the map will change and may reveal some inaccuracies. This a normal occurrence in Tilegrams because it is difficult to produce both accurate and recognizable results. As you begin to make your own, you'll experience the trade-offs involved.

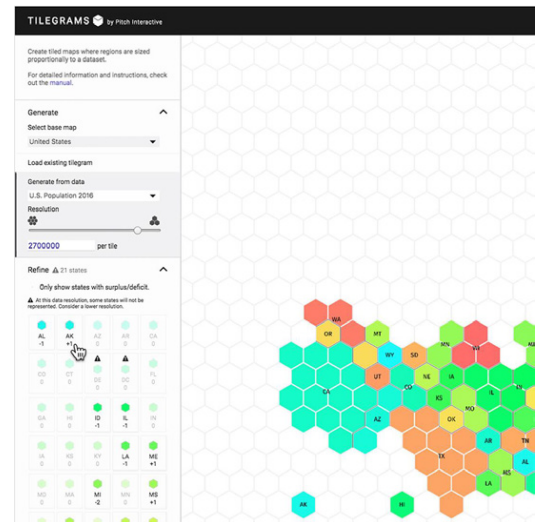
STEP 1 OF 4

Click **Refine**.



STEP 2 OF 4

Under **State Tiles** you'll see a list of each state with a number and a hexagon. The number indicates the difference between the number of tiles that region currently has on the map and how many it should have, based on the dataset. If the number is positive, that region has too many tiles on the map. If it's negative, it doesn't have enough. If there's a warning sign, then the region doesn't have enough data for even a single tile on the map at the chosen resolutions.



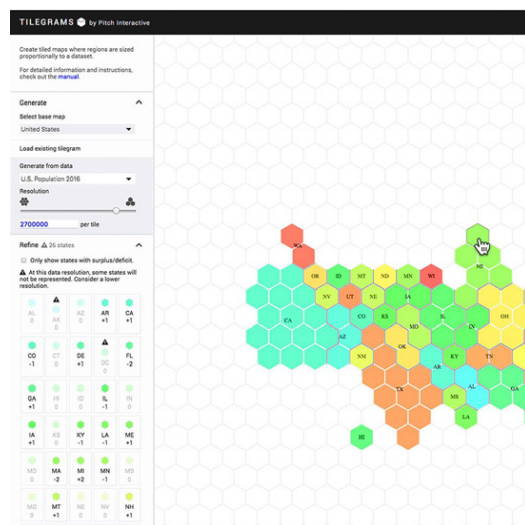
STEP 3 OF 4

To remove a tile from the map, click it and hit “delete” on your keyboard.



STEP 4 OF 4

To add a tile, select **Refine**, click on a hexagon from the left sidebar and drag it onto the map.

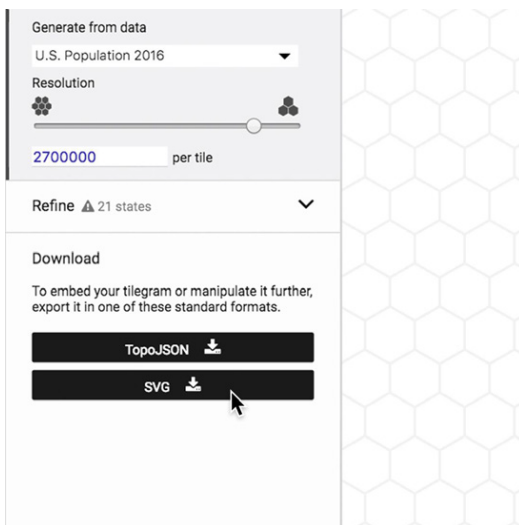


Exporting existing Tilegrams.

SINGLE STEP

When you are happy with your Tilegram, you can export it. For use in design software, choose the file type SVG using the buttons at lower left. Developers should select TopoJSON to export it into their web applications.

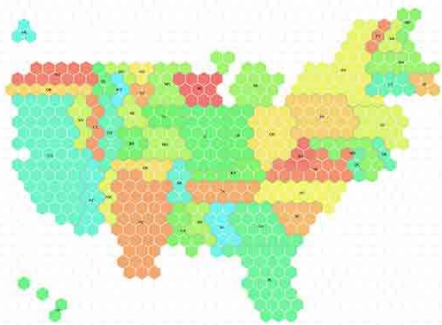
For more on Tilegram basics, see the tool and [read our post on Medium](#).



Congratulations!

You completed “Visualizing Data: Introduction to Tilegrams.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



5 min estimated time

Visualizing Data: Advanced Tilegrams

Generate your own Tilegram from data.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 08

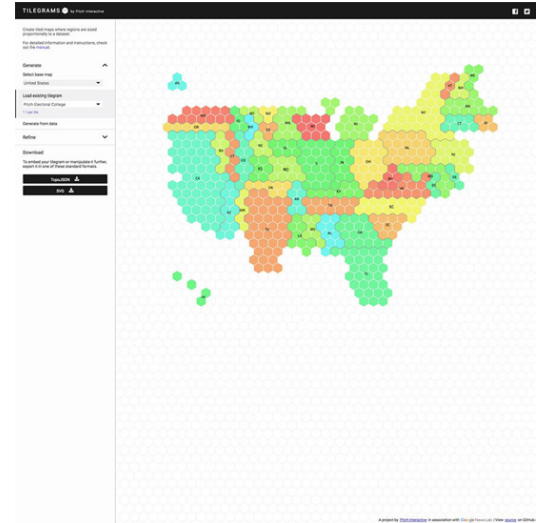
Visualizing Data: Advanced Telegrams

Generate your own Telegram from data.

Lesson overview

Generating new Telegrams.

You can produce a truly custom Telegram by modifying the data in the available base maps or by uploading your own data.



- 1 Starting with data.
- 2 Finding Geo ID codes for different regions.
- 3 Formatting your Custom CSV.
- 4 Making your Telegram.
- 5 Adjusting and downloading.

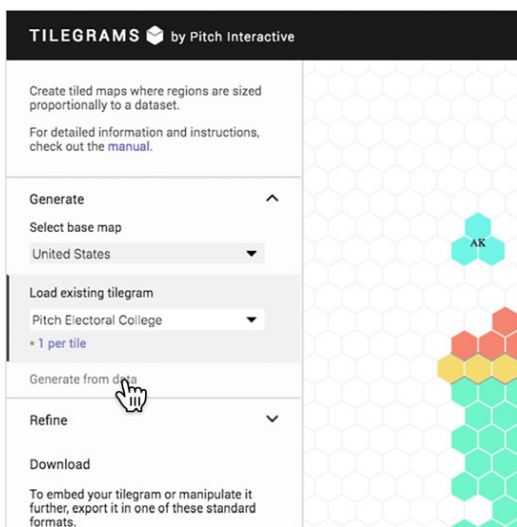
For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

Starting with data.

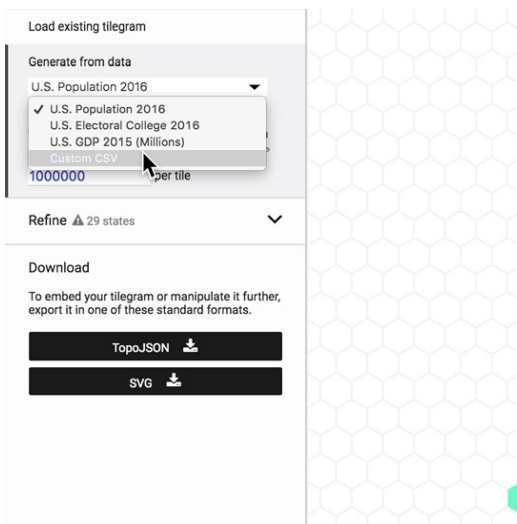
STEP 1 OF 3

Begin by selecting **Generate from data**.



STEP 2 OF 3

Click on the dropdown menu, and you'll see that you can choose from a few data-driven U.S. Telegram base maps.



STEP 3 OF 3

You can also choose **Custom CSV** to upload your own data set.

Load existing tilegram

Generate from data

Custom CSV

Csv should be formatted with no headers and geo id as the first column and value as second. The third column is ignored. Sample CSV:

```
27,1,MINNESOTA
30,1,MONTANA
38,1,NORTH DAKOTA
15,1,HAWAII
16,1,IDAHO
53,1,WASHINGTON
04,1,ARIZONA
```

Paste custom CSV below:

Submit

Resolution

1000000 per tile

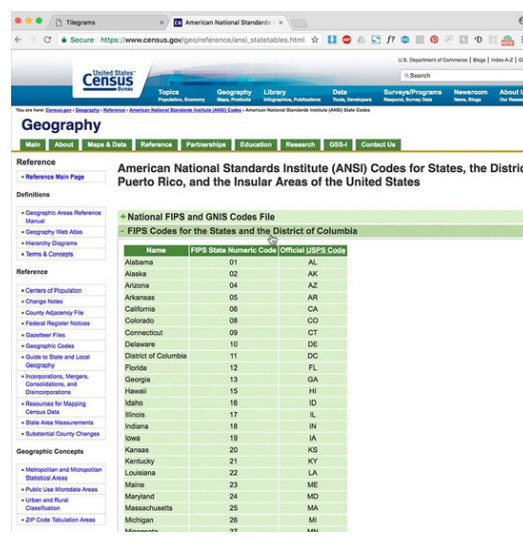
Refine ▲ 29 states ▼

Finding Geo ID codes for different regions.

To generate a new Telegram, you'll need to know its Geo ID coding; these are the inputs that give your Telegram the right geographic shape. For example, the US uses FIPS state codes to identify its 50 states and additional territories. France and Germany use ISO-3166-2 codes.

STEP 1 OF 5

On the homepage, click **FIPS Codes for the States and the District of Columbia**.



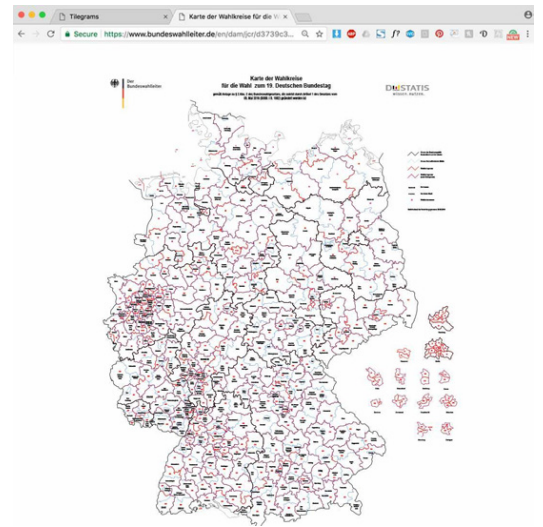
STEP 2 OF 5

You'll find the individual state codes in the center column.

Name	FIPS State Numeric Code	Official USPS Code
Alabama	01	AL
Alaska	02	AK
Arizona	04	AZ
Arkansas	05	AR
California	06	CA
Colorado	08	CO
Connecticut	09	CT
Delaware	10	DE
District of Columbia	11	DC
Florida	12	FL
Georgia	13	GA
Hawaii	15	HI
Idaho	16	ID
Illinois	17	IL
Indiana	18	IN
Iowa	19	IA
Kansas	20	KS
Kentucky	21	KY
Louisiana	22	LA
Maine	23	ME
Maryland	24	MD

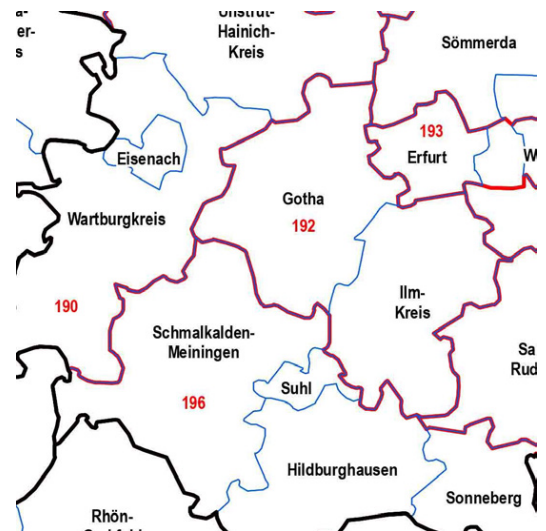
STEP 3 OF 5

Click the Germany Geo ID link above and you'll arrive at a map of German constituencies



STEP 4 OF 5

Zoom in on the map to reveal the code for each constituency



STEP 5 OF 5

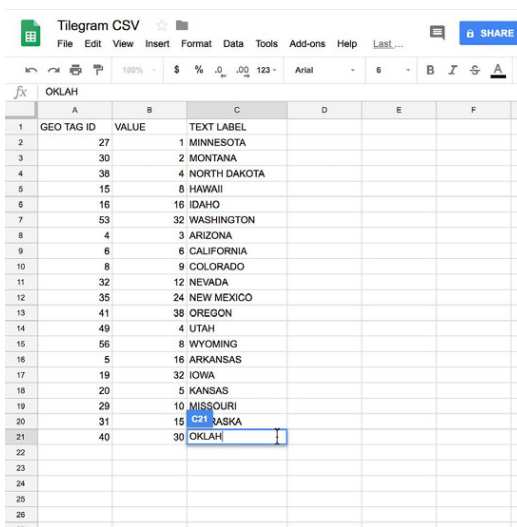
Click the France Geo ID link above and you'll find the region codes under the column labeled GN

	ISO-3166-2	Fips	GN	Name of Subdivision	Type	Capital	Pop
1	ARA	C2	84	Auvergne-Rhône-Alpes	region	Lyon	7
2	BFC	C3	27	Bourgogne-Franche-Comté	region	Dijon	2
3	BRE	A2	53	Bretagne	region	Rennes	3
4	COR	A5	94	Corse	territorial collectivity	Ajaccio	
5	CVL	A3	24	Centre-Val de Loire	region	Orléans	2
6	GES	C4	44	Grand Est	region	Strasbourg	5
7	HDF	C5	32	Hauts-de-France	region	Lille	5
8	IDF	A8	11	Île-de-France	region	Paris	11
9	NAQ	C7	75	Nouvelle-Aquitaine	region	Bordeaux	5
10	NOR	C6	28	Normandie	region	Rouen	3
11	OCC	C8	76	Occitanie	region	Toulouse	5
12	PAC	B8	93	Provence-Alpes-Côte d'Azur	region	Marseille	4
13	PDL	B5	52	Pays de la Loire	region	Nantes	3
no longer exists:							
14	A	C1	C1	Alsace	region	Strasbourg	1
15	B	97	97	Aquitaine	region	Bordeaux	3
16	C	98	98	Auvergne	region	Clermont-Ferrand	1
17	D	A1	A1	Bourgogne	region	Dijon	1
18	G	A4	A4	Champagne-Ardenne	region	Châlons-	

Formatting your Custom CSV.

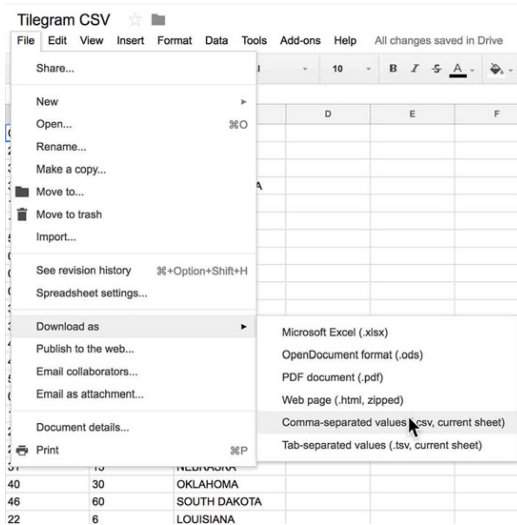
STEP 1 OF 2

Open a spreadsheet editor. To create your Comma Separated Values (CSV) data source, you will use a three-column model. Column 1: The Geo ID tag for the area. This tells our software “where.” Column 2: The value you want to assign. This tells our software “how many.” For example, population, GDP, etc. Column 3: A text label describing the territory such as “California” or “New York”. This does not affect the shape of the Telegram in any way.



STEP 2 OF 2

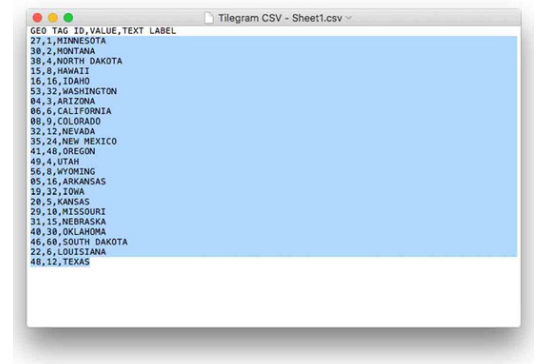
Export as a CSV.



Making your Tilegram.

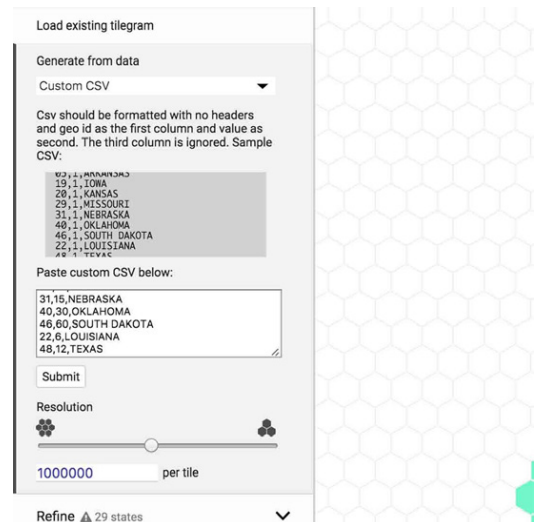
STEP 1 OF 3

Once your data source is properly formatted and ready, select all and copy.



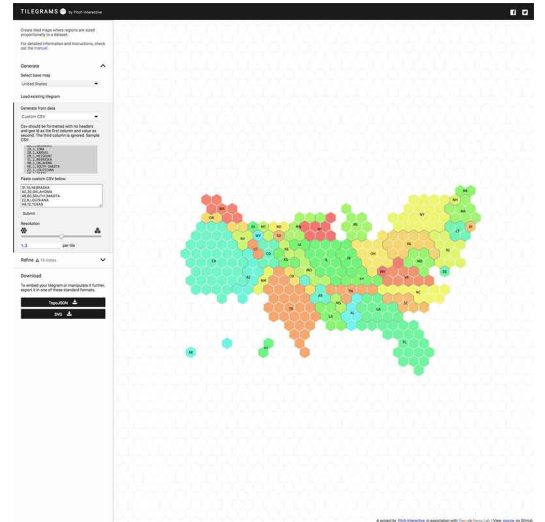
STEP 2 OF 3

Paste the values into the window labeled **Paste Custom CSV below:**



STEP 3 OF 3

Your Telegram should begin automatically generating in the window to the right.



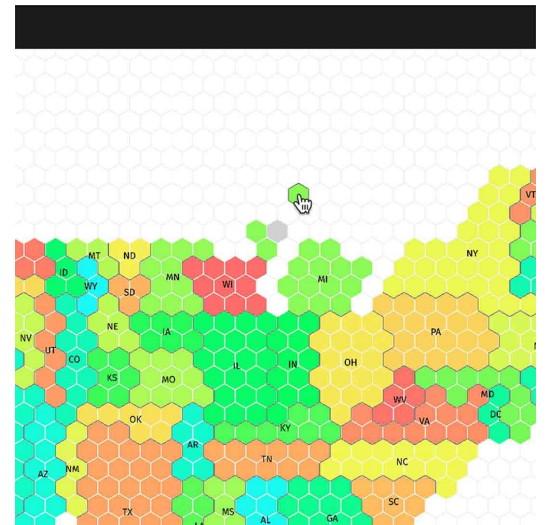
Adjusting and downloading.

Now, you can follow the same steps you would use for an existing Telegram.

For a detailed look at how Telegram was created, [read Pitch Interactive's blog post](#).

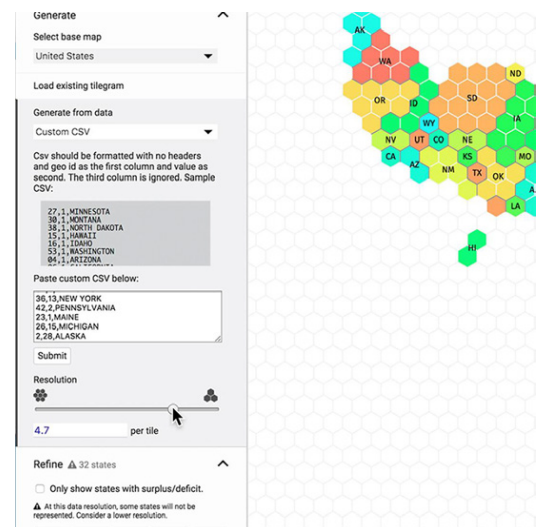
STEP 1 OF 2

Drag tiles around.



STEP 2 OF 2

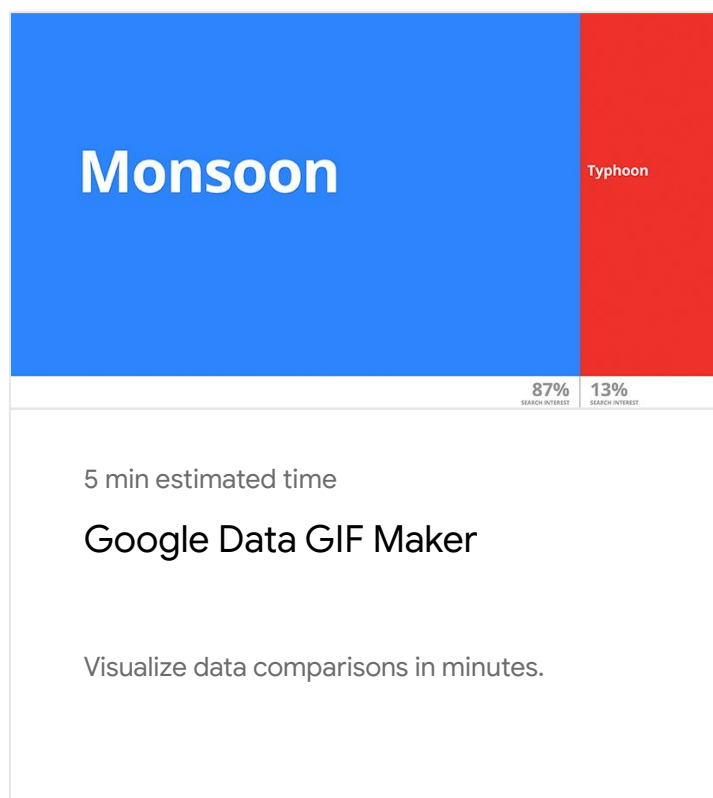
Adjust the resolution to find the right balance to keep your creation statistically accurate and geographically recognizable.



Congratulations!

You completed “Visualizing Data: Advanced Tilegrams.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



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newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 09

Google Data GIF Maker

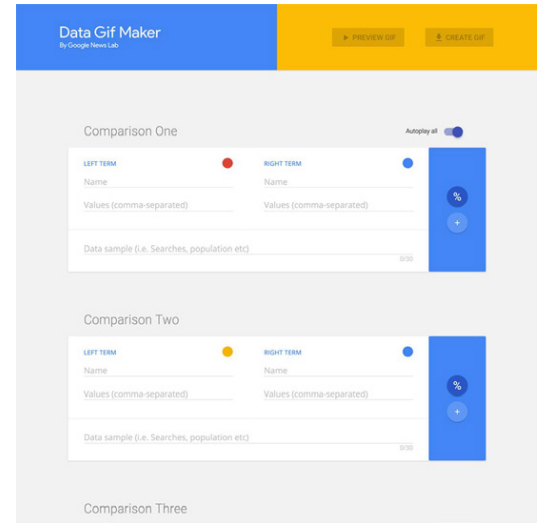
Visualize data comparisons in minutes.

Lesson overview

A simple tool for showing data comparisons.

Data visualizations are an essential storytelling tool in journalism, and though they are often intricate, they don't have to be complex. In fact, with the growth of mobile devices as a primary method of consuming news, data visualizations can be simple images formatted for the device they appear on.

The Google Data Gif Maker helps journalists make visuals that show share of interest for two competing topics. It is designed for desktop use on [Chrome](#) and may not function properly on mobile devices or other browsers. To begin, go to datagifmaker.withgoogle.com, where you can make up to five different GIFs at a time.



- 1 Choose two data points.
- 2 Customize your design.
- 3 To create your GIF, select **Preview GIF**.
- 4 Download your GIF.

For more Data Journalism lessons, visit:

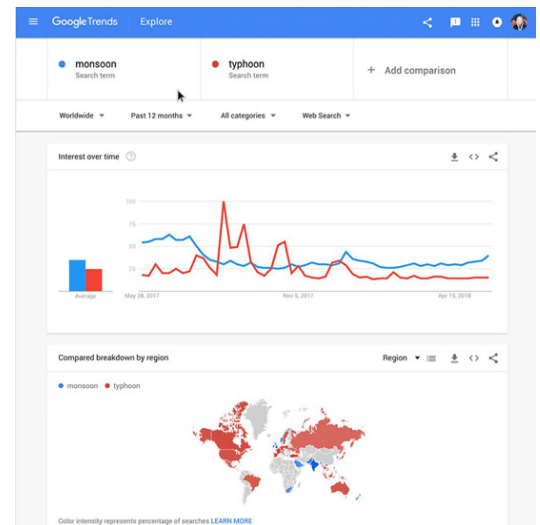
newsinitiative.withgoogle.com/training/course/data-journalism

Choose two data points.

Data GIF Maker is ideal for comparing the relative search interest for two competing terms using the [Google Trends Explore](#) function.

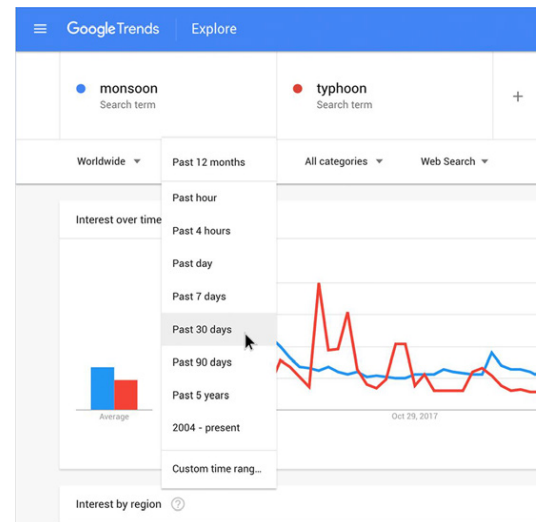
STEP 1 OF 4

In Google Trends, enter two competing terms, such as **Monsoon** and **Typhoon**.



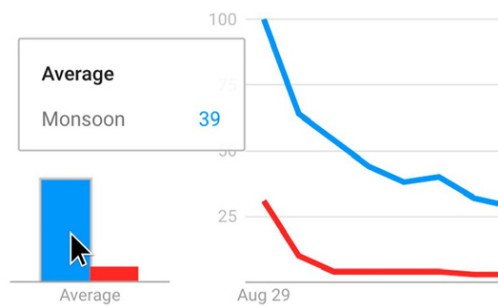
STEP 2 OF 4

Specify the time range and region you want to compare, such as **Past 30 days** and **India**.



STEP 3 OF 4

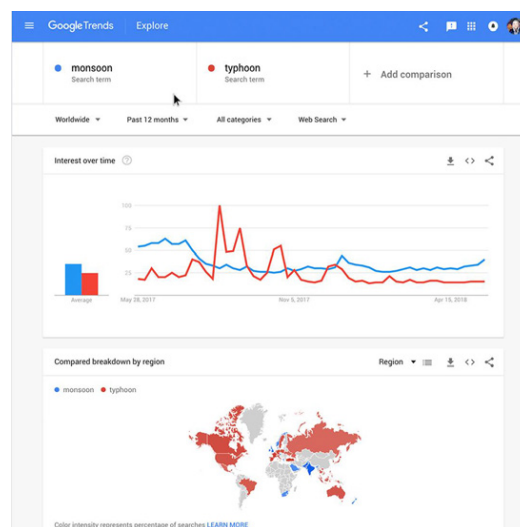
You'll see the average relative search interest based on your inputs.



Interest by subregion ?

STEP 4 OF 4

You can also use Data GIF Maker to compare any two data points of your choosing such as polling numbers, sales figures, movie ratings, etc. simply by entering the two numbers.



Customize your design.

Now that you've chosen your data points, go to datagifmaker.withgoogle.com to begin creating your GIF.

STEP 1 OF 3

Add the name of each of your two data points, the numbers representing your data, and explanatory text at the bottom such as “search interest.” Do not use commas within numbers: for example, 1,000,000 would be entered as 1000000. However, you can use comma-separated values to create a toggle effect in the animation.

The screenshot shows two configuration panels. The top panel, 'Comparison One', has a blue dot indicator. It contains fields for 'LEFT TERM' (Monsoon), 'RIGHT TERM' (Typhoon), and 'Values (comma-separated)' (10, 39). Below these is a 'Data sample (i.e. Searches, population etc)' field. The bottom panel, 'Comparison Two', has a yellow dot indicator and contains fields for 'LEFT TERM' (Name), 'RIGHT TERM' (Name), and 'Values (comma-separated)'.

STEP 2 OF 3



Choose whether you want to show terms as numbers or percentages by clicking either the + or % icon. For percentages, just enter your values and the app automatically calculates the % ratio for you.

This screenshot shows the app interface with the 'Comparison One' panel. The 'LEFT TERM' is 'Monsoon' and the 'RIGHT TERM' is 'Typhoon'. The 'Values (comma-separated)' field contains '10, 39' and '100, 8'. A blue sidebar on the right contains a '%' icon (selected) and a '+' icon. Below the terms and values is a 'search interest' field with a value of '15/30'. The 'Comparison Two' panel is also visible, with 'Name' as the left and right terms and '0/30' as the data sample. A 'Comparison Three' panel is partially visible at the bottom.



STEP 3 OF 3

Next, select colors by clicking on the colored dots.

Comparison One Autoplay all

LEFT TERM		RIGHT TERM	
Monsoon		Typhoon	
10, 39		100, 8	
search interest			15/30

Comparison Two

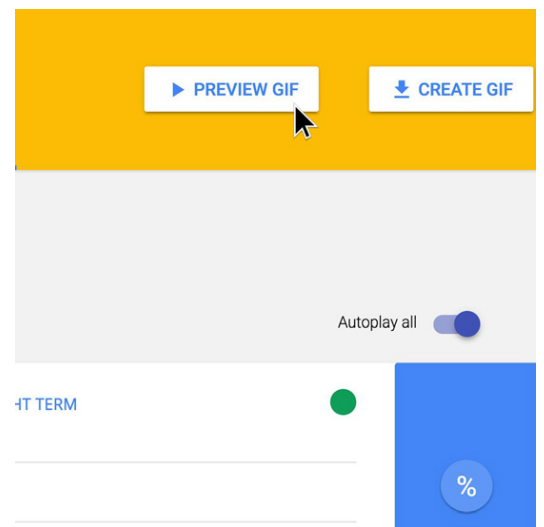
LEFT TERM		RIGHT TERM	
Name		Name	
Values (comma-separated)		Values (comma-separated)	
Data sample (i.e. Searches, population etc)			0/30

Comparison Three

To create your GIF, select **Preview GIF**.

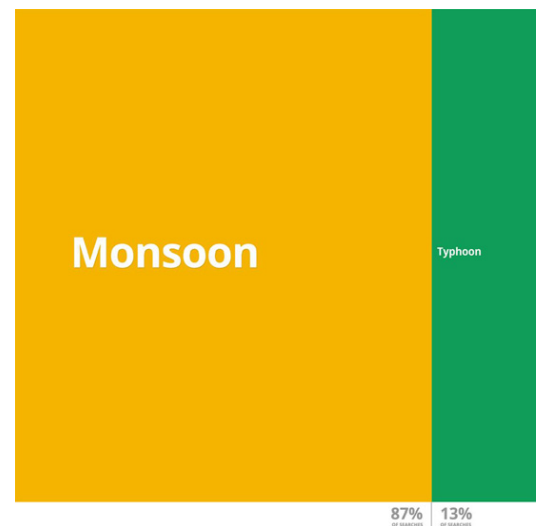
STEP 1 OF 3

To preview single or multiple GIFs, click on **Preview GIF**.



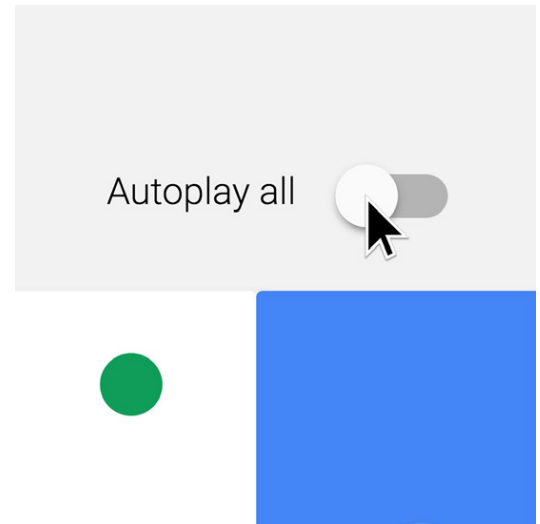
STEP 2 OF 3

The tool will automatically open a new browser window and show you up to five GIFs you've created.



STEP 3 OF 3

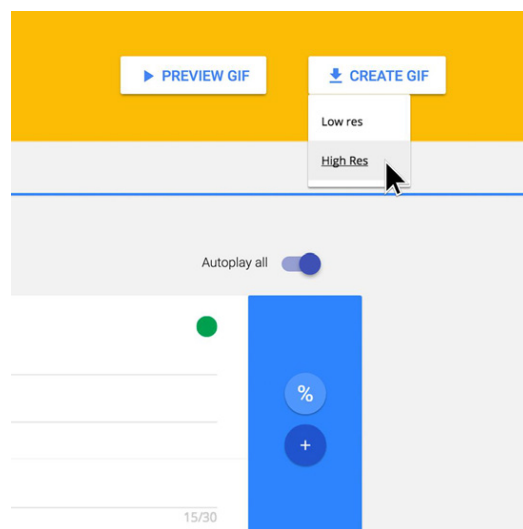
If you'd like to preview each segment or GIF separately, just click **Preview GIF** with **Autoplay All** turned off and then hit the **spacebar** to advance through each visual, step by step.



Download your GIF.

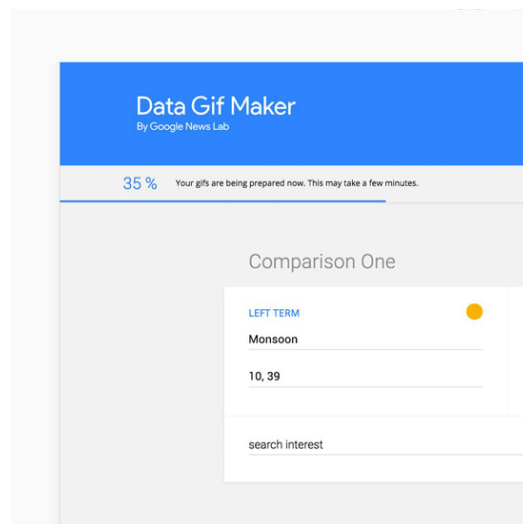
STEP 1 OF 3

When you're satisfied with your creation, click **Create GIF**.



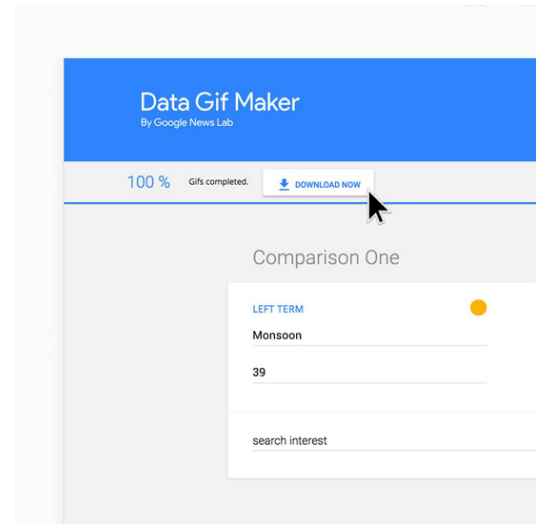
STEP 2 OF 3

The high-resolution download may take a few minutes, but it provides better quality for social sharing. To speed up the process, we recommend that you leave your browser window open on your desktop while it's creating the GIFs.



STEP 3 OF 3

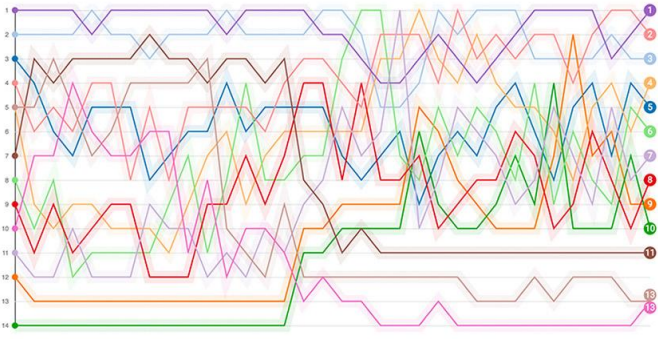
Once it's 100%, click **Download Now**.



Congratulations!

You completed “Google Data GIF Maker.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



7 min estimated time

Flourish: Data Visualization Templates

A simple tool to help newsrooms create beautiful graphics.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 10

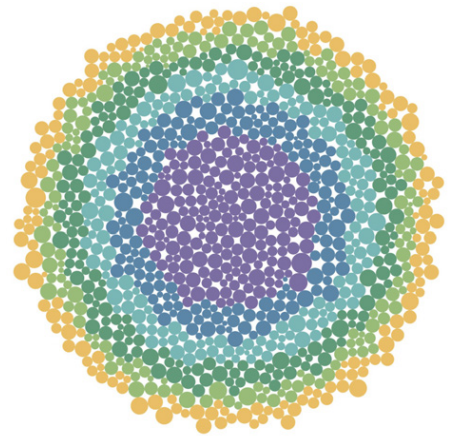
Flourish: Data Visualization Templates

A simple tool to help newsrooms create beautiful graphics.

Lesson overview

Free data visualization templates for newsrooms.

With its journalism roots, Flourish is designed to help newsrooms increase the quality and quantity of their data stories. Built by London data studio Kiln, Flourish offers beautifully designed data visualization templates. Google News Initiative partners with Flourish to offer the tool for free editorial use in newsrooms. You can customize many aspects of the templates with no coding experience. Or, your developers can use Flourish tools to create and share templates with other publications.



- 1 Sign up for a free account.
- 2 Get acquainted with Flourish.
- 3 Prepare your data set.
- 4 Starting your project.
- 5 Customize your visualization.
- 6 Preview your project on multiple screens.
- 7 Publish your visualization.

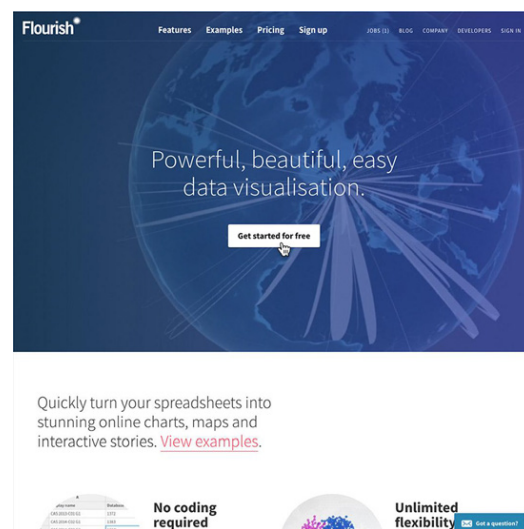
For more Data Journalism lessons, visit:

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Sign up for a free account.

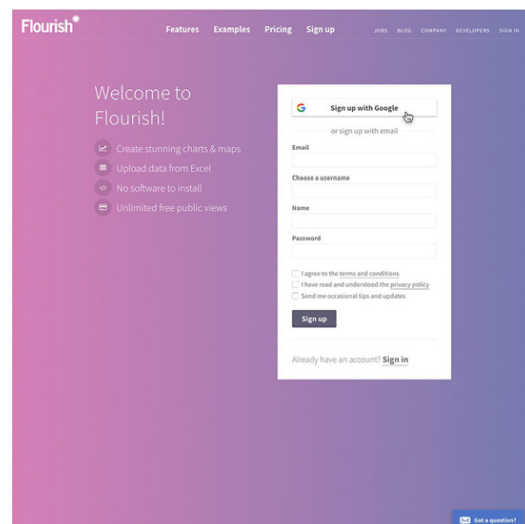
STEP 1 OF 3

To begin, click **Get started for free**.



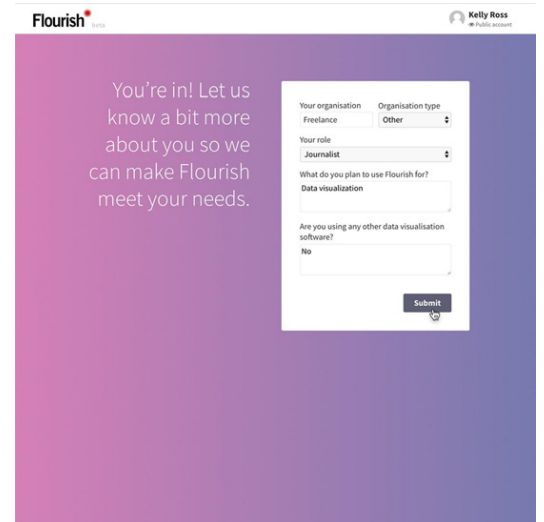
STEP 2 OF 3

Sign in with Google or enter your name and email to create an account.



STEP 3 OF 3

Answer a few simple questions and click **Submit**.



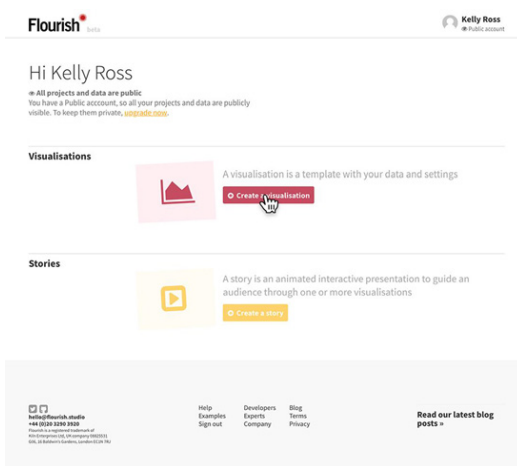
The screenshot shows the Flourish onboarding interface. At the top left is the 'Flourish' logo, and at the top right is the user's name 'Kelly Ross' with a profile icon. The main content area has a purple-to-pink gradient background. On the left, a text message reads: 'You're in! Let us know a bit more about you so we can make Flourish meet your needs.' On the right, there is a white form with the following fields: 'Your organisation' (with 'Freelance' selected), 'Organisation type' (with 'Other' selected), 'Your role' (with 'Journalist' selected), 'What do you plan to use Flourish for?' (with 'Data visualization' selected), and 'Are you using any other data visualisation software?' (with 'No' selected). A 'Submit' button is located at the bottom right of the form.

Get acquainted with Flourish.

There are several different types of templates currently available, with more being added all the time. From “horse race” visuals that compare multiple data points over time to renderings of the globe that show relational data, you can choose the right type of visual to tell your story.

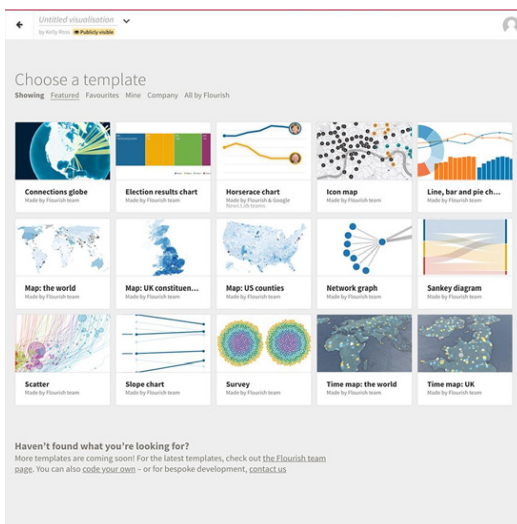
STEP 1 OF 2

To get started, click **Create a visualization**.



STEP 2 OF 2

Find the best template for your story in a growing collection.

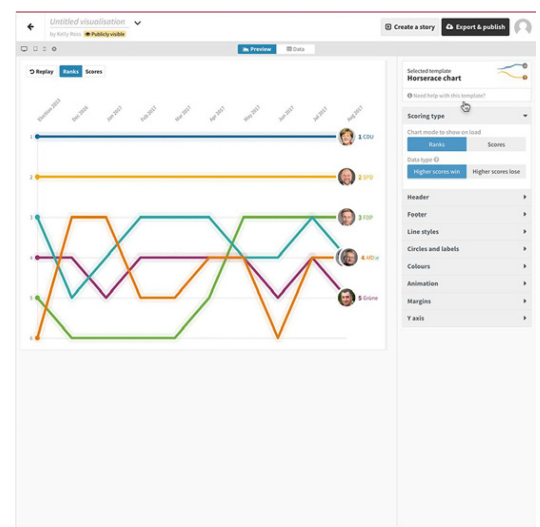


Prepare your data set.

Flourish works with Excel spreadsheets and Comma Separated Value (CSV) files. To save time in the long-term, make sure your data set is organized and free of errors.

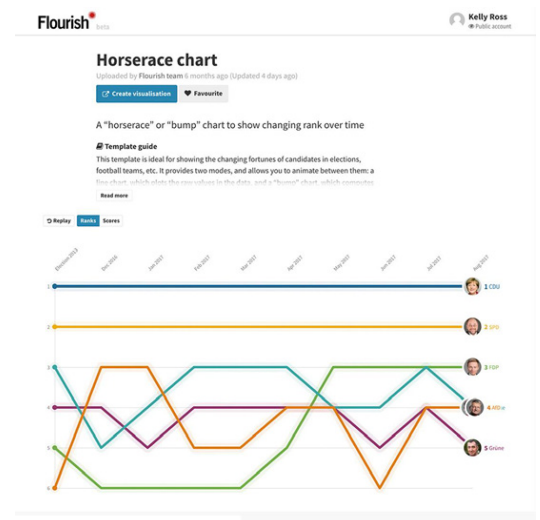
STEP 1 OF 4

To learn more about a template and whether it's right for the type of data you want to visualize, click **Need help with this template?**



STEP 2 OF 4

The Template Guide is filled with details about best uses, data requirements, and tips.



STEP 3 OF 4

Once you choose a template, click on **Create Visualization**.

Horserace chart

Uploaded by Flourish team 6 months ago (Updated 4 days ago)

[Create visualisation](#) [Favourite](#)

Start a project with this template
A horserace or "bump" chart to show changing rank c

Template guide
This template is ideal for showing the changing fortunes of candidates in football teams, etc. It provides two modes, and allows you to animate between a line chart, which plots the raw values in the data, and a "bump" chart, which shows the relative rank of each candidate over time.
[Read more](#)



STEP 4 OF 4

Click **Data** to see how to format your CSV properly.

Top Five Girl Names in the U.S. Public [Export & publish](#)

[Previous](#) [Data](#)

	A	B	
1	name	pic	elec
2	CDU/CSU	https://tempfiles201706.flourish.studio/merkel_head.150454203939.1512670033165.jpeg	25.7
3	SPD	https://tempfiles201706.flourish.studio/schulz_head.150454203939.1512670033165.jpeg	25.7
4	FDP	https://tempfiles201706.flourish.studio/lindeher_head.150454203939.1512670033165.jpeg	4.8
5	Grüne	https://tempfiles201706.flourish.studio/verm_head.150454203939.1512670033165.jpeg	4.4
6	Linke	https://tempfiles201706.flourish.studio/kopping_head.150454203939.1512670033165.jpeg	4.6
7	AfD	https://tempfiles201706.flourish.studio/meuthen_head.150454203939.1512670033165.jpeg	4.7
8			
9			
10			

Select columns to visualise
Fill in the columns of you want to visualise. Add multiple columns with a comma or hyphen (eg. A,B or A-C)

Data Data ↓

Name column The name of each entrant **A**

Image column The URL of the image to use **B**

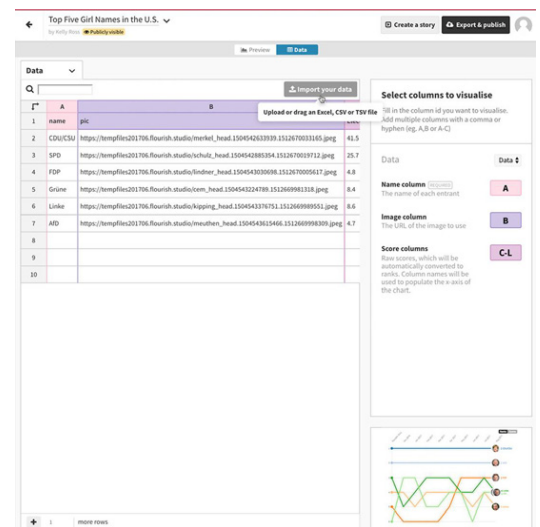
Score column Raw scores, which will be automatically converted to ranks. Column names will be used to position the tracks of the chart. **C**

Starting your project.

Let's say you're writing a trend piece analyzing U.S. baby girls' names over time and you want to use a "horse race" template.

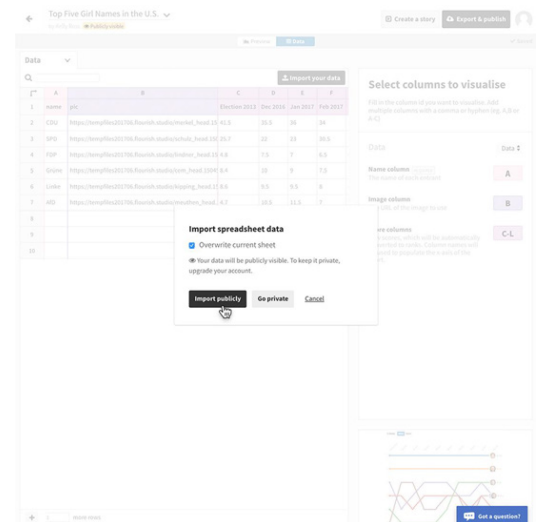
STEP 1 OF 5

Select **Import your data** and be sure to name your data sheet.



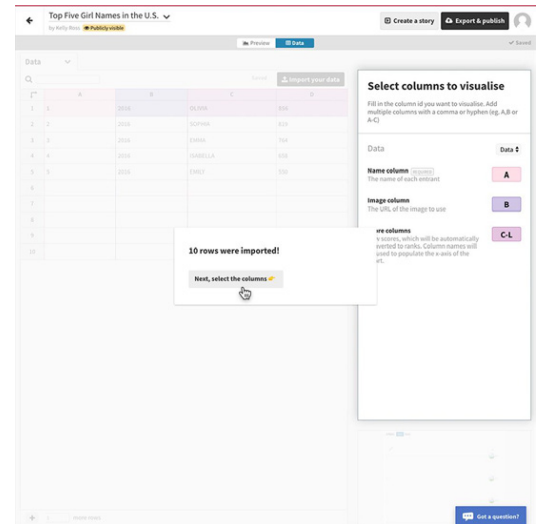
STEP 2 OF 5

Make sure that **Overwrite current sheet** is selected, then click **Import**.



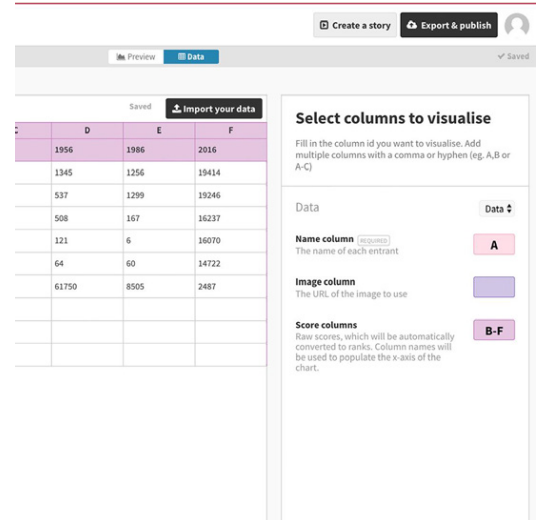
STEP 3 OF 5

Click **Next**, select the columns.



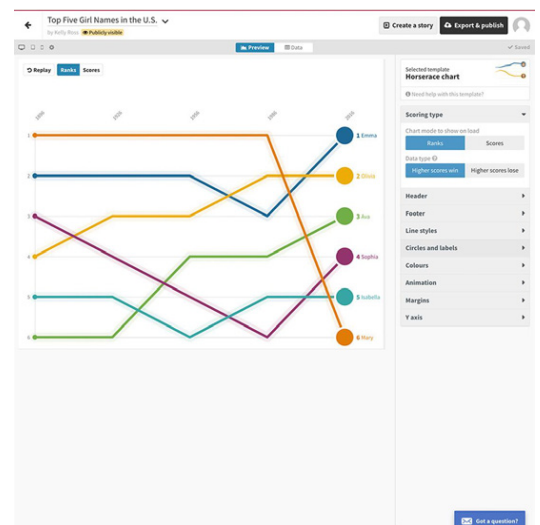
STEP 4 OF 5

Then label the columns you want to visualize. If there is an image you want to associate with the data and the template you chose allows it, click on the **Image column** field and enter the header letter of the column that contains your image URLs. If there's no image, leave the Image column field blank.



STEP 5 OF 5

Click **Preview** to see your data visualized.

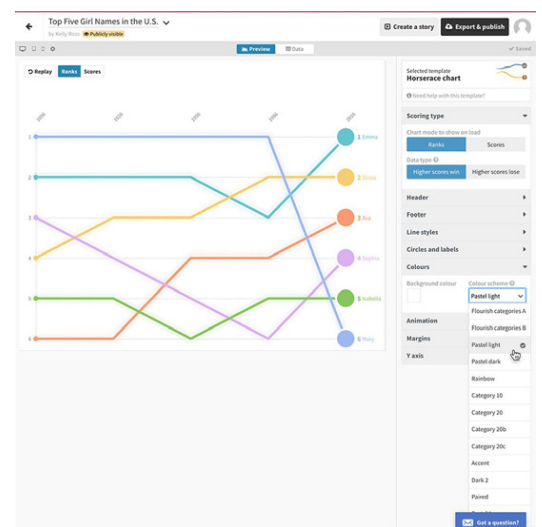


Customize your visualization.

Each Flourish template has multiple design elements you can customize to make your project unique. From colors and shading to font sizes and curve shapes, there are dozens of choices, all created by skilled designers, so no matter what you choose, your visualization will look attractive and professional.

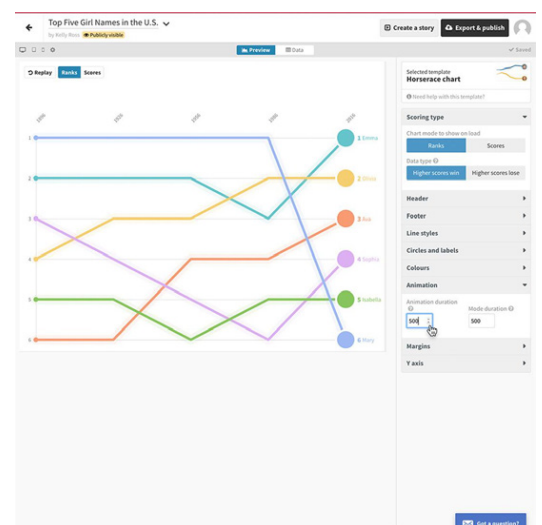
STEP 1 OF 3

Let's say you like the shape of your graphic but you want to change the colors. Click **Colours** to see a designer selection of color palettes. We'll select **Pastel light**.



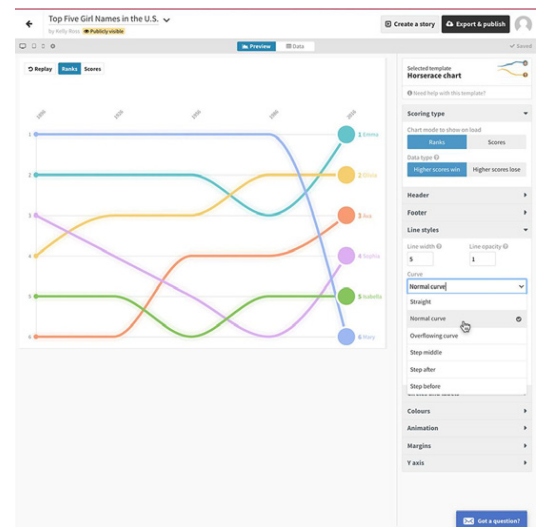
STEP 2 OF 3

To change the speed that the graphic populates, click **Animation**. Then click **Replay** to preview the motion.



STEP 3 OF 3

Altering the shape of the lines is also easy. Simply click on **Curve** under the **Line Styles** menu item and scroll through until you see one you like.

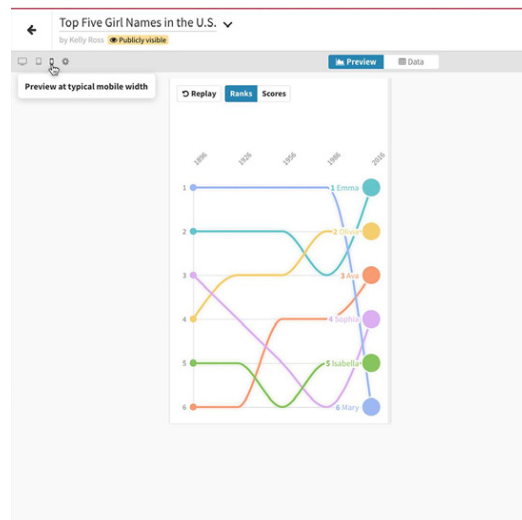


Preview your project on multiple screens.

SINGLE STEP

With more and more readers using mobile devices today, it's very important to preview your data visualization on different screen sizes. A font size that looks great on a desktop may be unreadable on a mobile phone. A graphic that looks beautiful on a phone may look sparse on a full-size screen. Flourish makes it easy to see just how your visualization will appear.

To preview your project on each screen size, click the icons in the upper left corner.



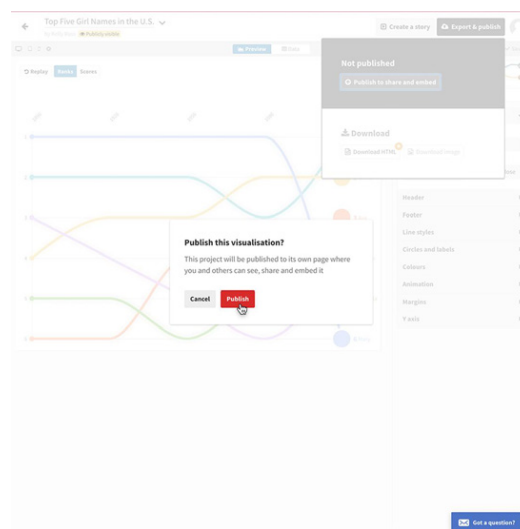
Publish your visualization.

When you're satisfied with your creation, click **Publish** to save it and embed it to your site. Flourish outputs can be published from your own server and will work forever.

If you're using the free version of this program, your visualization will appear with Flourish branding. Publishers using the full, paid version can download the HTML file and embed it without Flourish branding.

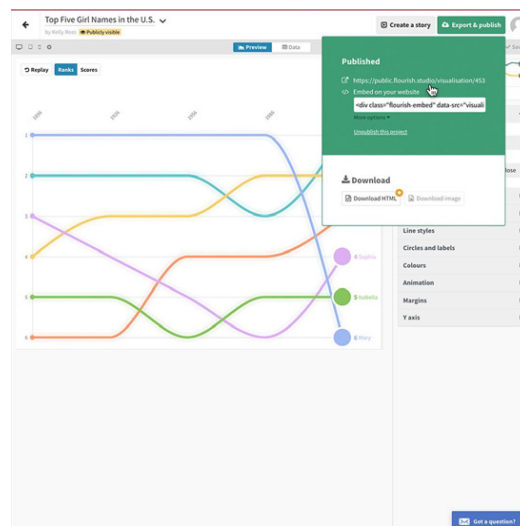
STEP 1 OF 2

Click **Export & publish > Publish to share and embed** and then confirm by selecting **Publish**.



STEP 2 OF 2

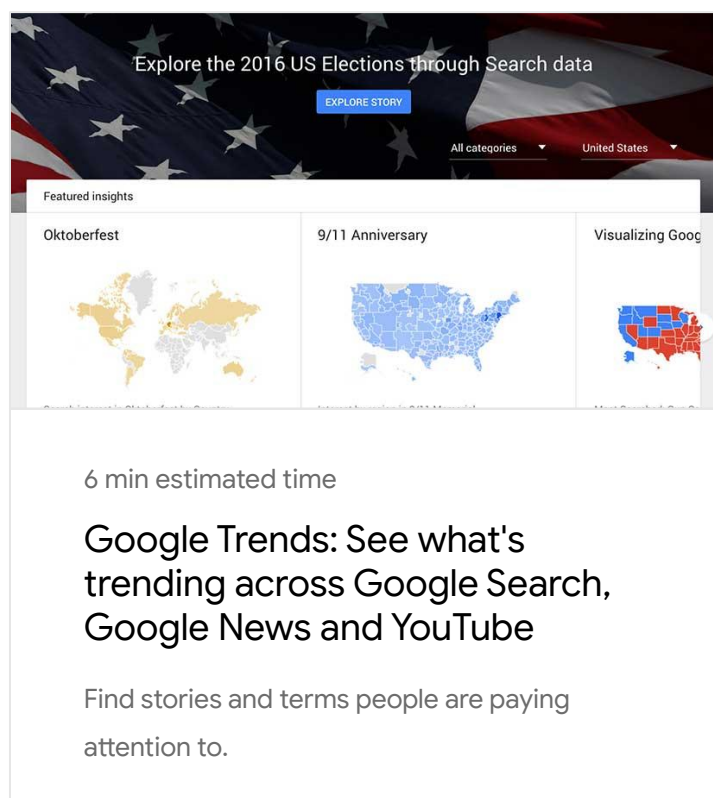
Click on the URL to view your published animation.



Congratulations!

You completed “Flourish: Data Visualization Templates.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



Explore the 2016 US Elections through Search data

EXPLORE STORY

All categories United States

Featured insights

Oktoberfest

9/11 Anniversary

Visualizing Goog

6 min estimated time

Google Trends: See what's trending across Google Search, Google News and YouTube

Find stories and terms people are paying attention to.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 11

Google Trends: See what's trending across Google Search, Google News and YouTube

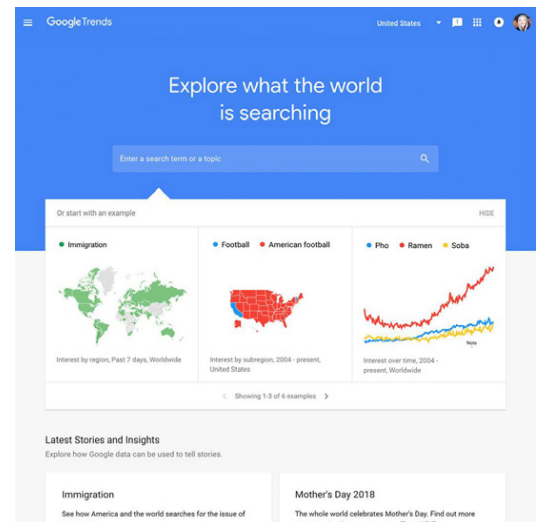
Find stories and terms people are paying attention to.

Lesson overview

How Trends works.

Google Trends allows you to see the topics people are—or aren't—following, almost in real time. Journalists can use this information to explore potential story ideas, and can also feature Trends data within news stories to illustrate a general level of interest in, say, a political candidate, social issue or event.

The [Google Trends homepage](#) features clustered topics that Google detects are related and trending together on either Search, Google News, or YouTube. Trending Stories are collected based on Google's Knowledge Graph technology, which gathers search information from those three Google platforms to detect when stories are trending based on the relative spike in volume and the absolute volume of searches.



- 1 On the homepage.
- 2 Exploring your topics.
- 3 Comparing groups of terms.
- 4 Explore by language.
- 5 Narrowing or expanding your search by geography and time.
- 6 One final Geo Search check: reverse image search.


For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

On the homepage.

SINGLE STEP

The Trends homepage indicates what topics are trending right now, which can be helpful when choosing a story to write about. To explore how Google data can be used to tell stories, click one of the examples under **Latest Stories and Insights**.



The screenshot shows the Google Trends homepage for "Mother's Day 2018" (May 2, 2018). The page features a header with the Google Trends logo and a search bar. Below the header is a large image of pink and yellow flowers. The main content area includes a text block explaining that Mother's Day is celebrated worldwide but at different times, and a visualization titled "A Year of Mother's Days" showing a world map with pink dots indicating when different countries search for terms like "mums, moms, mutters, 母 and 媽媽". A blue button labeled "CLICK HERE TO INTERACT" is visible at the bottom of the map. Below the map, there is a text block starting with "In the United States Mother's Day, a special day honoring mothers and motherhood, is celebrated each year on the second".

Google Trends

Google Trends

Mother's Day 2018
May 2, 2018 - Now

The whole world celebrates Mother's Day, but not all at the same time. Click the visualization below to see when different countries around the world search for the day that recognizes mums, moms, mutters, 母 and 媽媽.

A Year of Mother's Days

Click right to see when different countries around the world search for the day that celebrates mums, moms, mutters, 母 and 媽媽.
Created by the Google News Lab using Flourish

CLICK HERE TO INTERACT

In the United States Mother's Day, a special day honoring mothers and motherhood, is celebrated each year on the second

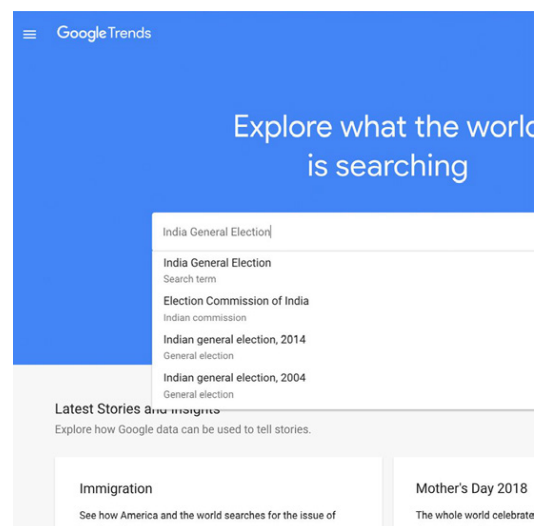
Exploring your topics.

In addition to what you see on the homepage, you can explore and gauge interest in virtually any topic, which can be useful for developing story ideas.

Let's say you're doing a story on the US presidential election, and want to compare the election process with that of India's General elections happening in the same year. Just use the Trends search bar:

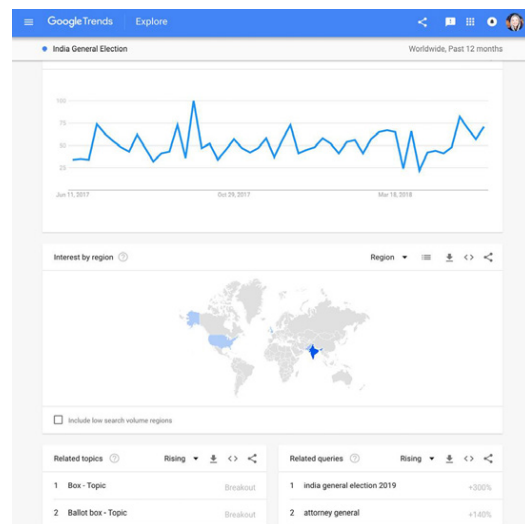
STEP 1 OF 5

Enter the India General Election in the Google Trends search bar at the top of the homepage.



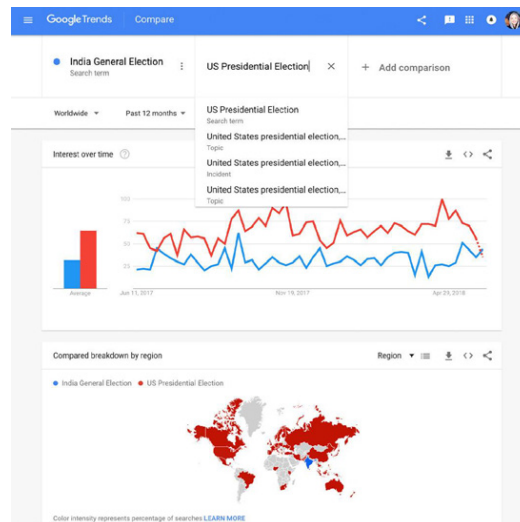
STEP 2 OF 5

Press **Return** to see your results.



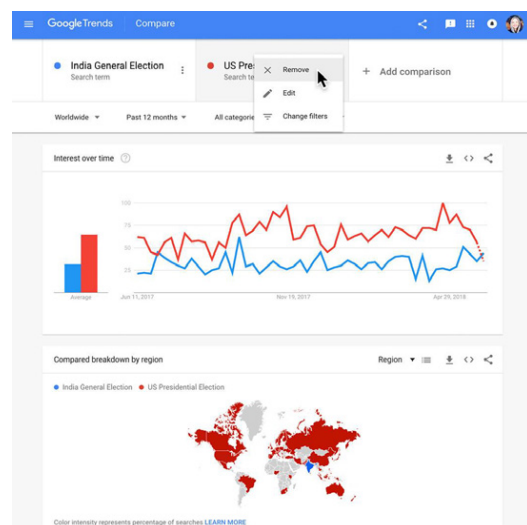
STEP 3 OF 5

Your results page will feature data visualizations for **Interest over time**, **Interest by subregion** and lists of **Related topics** and **Related queries**.



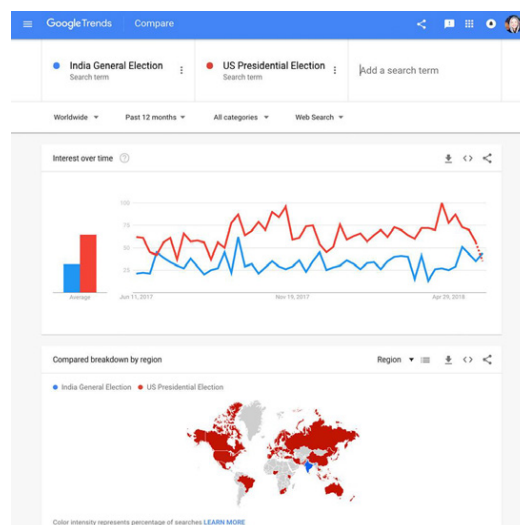
STEP 4 OF 5

You can add topics for simultaneous comparison by clicking **+ Compare** and typing in your search term.



STEP 5 OF 5

To remove or edit a topic, hover over its box and click the three dots that appear. Then click **Remove**.

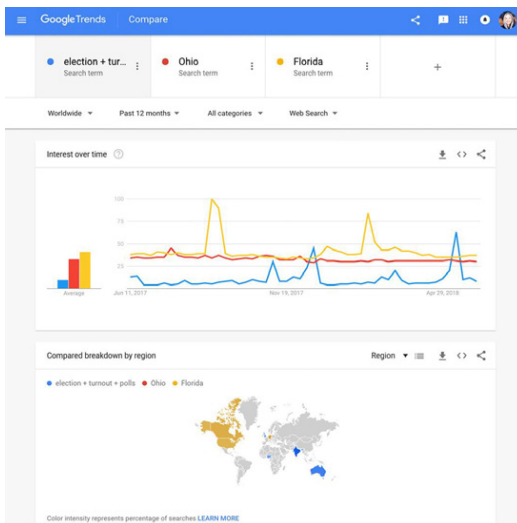


Comparing groups of terms.

SINGLE STEP

You can compare up to five groups of terms at one time and up to 25 terms in each group. Group terms together by using a + symbol.

This could be useful to compare election candidates, or to look at nominees in an awards show.

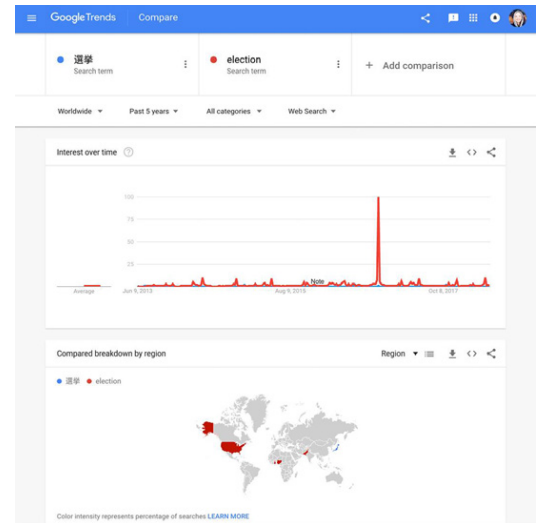


Explore by language.

SINGLE STEP

If you enter a search term using non-Latin characters, you'll see data from all countries or regions that use those characters. For example, if you enter 選挙, the Japanese characters for election, your results will not include much data from the United States.

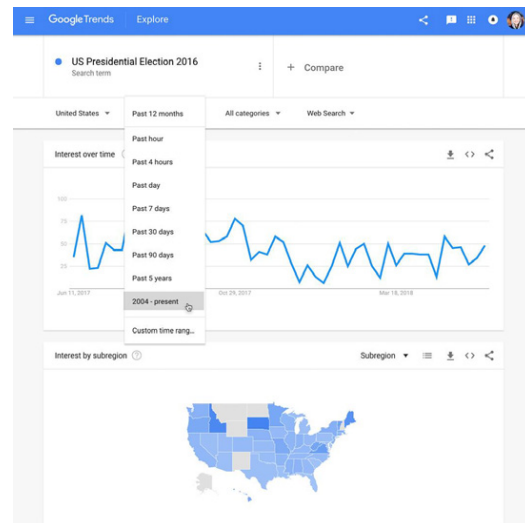
You can easily compare searches of the same term in different languages. Using the election example, just enter search term 選挙 in the first search box, then enter election in the **+ Compare** box.



Narrowing or expanding your search by geography and time.

SINGLE STEP

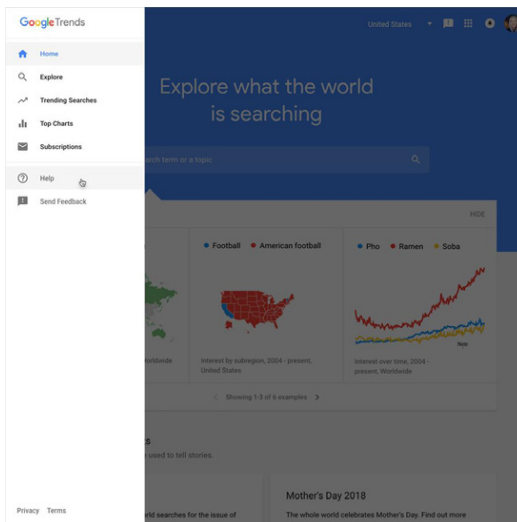
On the results page under the search bar, use the **Worldwide** and **Past 12 months** dropdowns to refine your exploration further by region and/or time period.



More about Trends.

SINGLE STEP

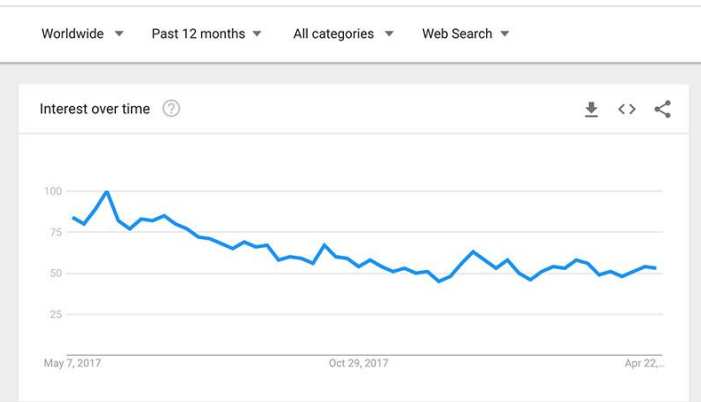
Information on how to better understand Google Trends data and read its charts can be found in our [Google Trends: Interpreting the Data](#) tutorial, and also in the [Trends Help Center](#) accessible from the menu in the upper left of the homepage.



Congratulations!

You completed “Google Trends: See what's trending across Google Search, Google News and YouTube.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



Worldwide ▾ Past 12 months ▾ All categories ▾ Web Search ▾

Interest over time ⓘ

100
75
50
25

May 7, 2017 Oct 29, 2017 Apr 22, 2017

4 min estimated time

Google Trends: Understanding the data

How to interpret Trends results.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 12

Google Trends: Understanding the data

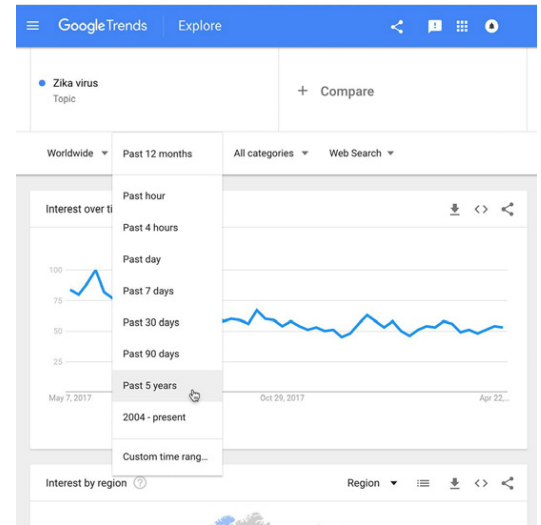
How to interpret Trends results.

Lesson overview

How Trends works.

Google Trends analyzes a sample of Google web searches to determine how many searches were done over a certain period of time.

For example, if you're doing a story about the zika virus and you want to see if there was a recent uptick in searches on the topic, select **Past 5 years**. Trends analyzes a sample of all searches for “zika virus” within those parameters.



- 1 Reading the Interest Over Time graph.
- 2 Finding the most searched topic in every region or country.
- 3 Rising data.
- 4 Reading the Related searches chart.
- 5 Data that is excluded.

For more Data Journalism lessons, visit:

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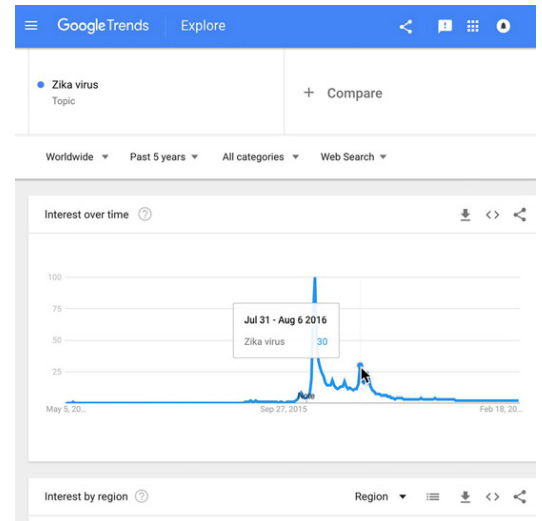
Reading the Interest Over Time graph.

SINGLE STEP

When you search for a term on Trends, you'll see a graph showing the term's popularity over time in (nearly) real time. Hovering your mouse over the graph reveals a number, which reflects how many searches have been done for the particular term relative to the total number of searches done on Google.

Numbers on the graph don't represent absolute search volume numbers, because the data is normalized and presented on a scale from 0-100, where each point on the graph is divided by the highest point, or 100. The numbers next to the search terms at the top of the graph are sums, or totals.

A line trending downward means that a search term's relative popularity is decreasing—not necessarily that the total number of searches for that term is decreasing, but that its popularity compared to other searches is shrinking.

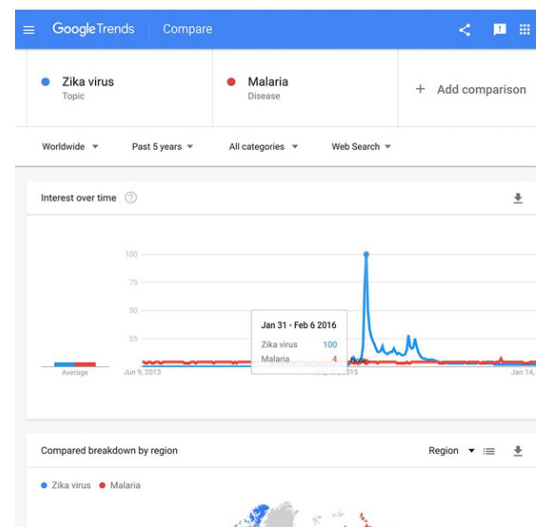


Finding the most searched topic in every region or country.

When you search for multiple terms on Trends, you'll see a comparative map showing which term or topic is most searched in each region.

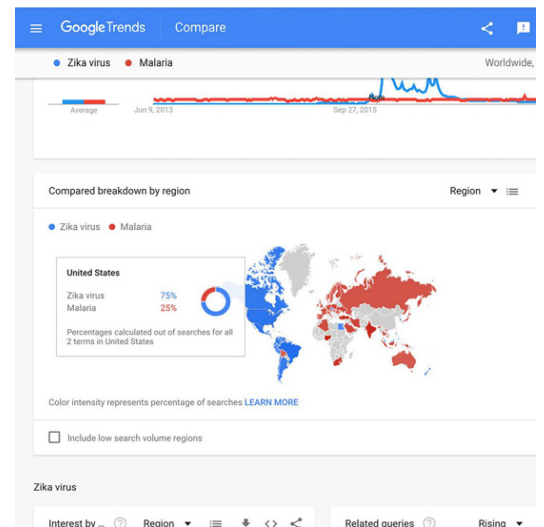
STEP 1 OF 2

Interest over time comparison: Let's compare the search terms Zika virus and malaria. You'll find that over time, malaria experiences a steady query rate while zika was barely searched for until a huge spike in January 2016.



STEP 2 OF 2

Compared breakdown by subregion: The color intensity of each region represents the percentage of searches of the leading search term in that region. This example shows that Zika virus was a more popular search term in the Americas while malaria was relatively more popular in Asia.



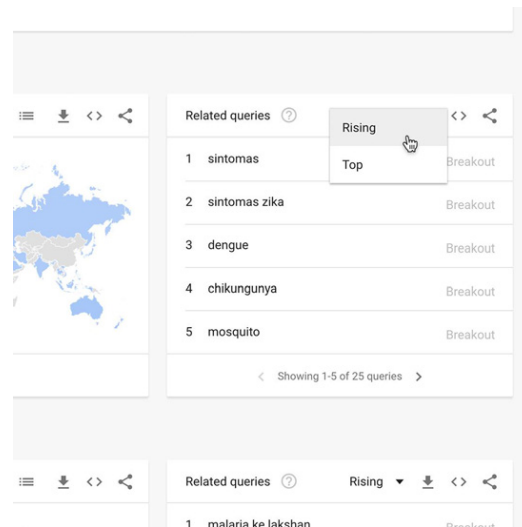
Rising data.

SINGLE STEP

At the bottom of your results page, the Related queries chart can show you the **Top** and **Rising** terms associated with any topic or trending story.

The **Rising** tab represents terms that were searched for with the term you entered and had the most significant growth in volume over the selected time period. You'll see a percentage of the Rising term's growth compared to the previous time period. If you see **Breakout** instead of a percentage, it means that the search term grew by more than 5000%.

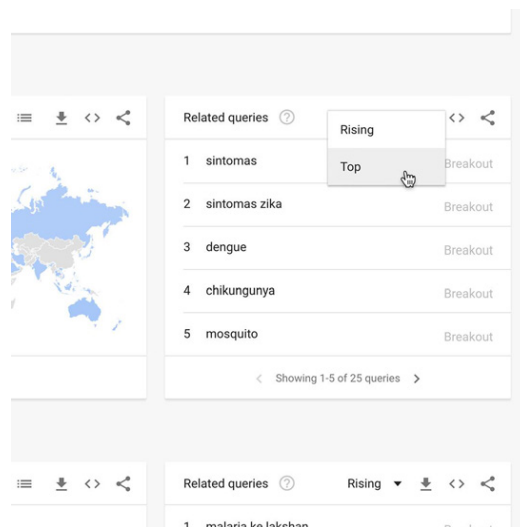
The percentages are based on the percent increase in search interest for the selected time frame. If you're looking at the last 7 days, the benchmark for the rise in searches would be 7 days prior; if it was the last 30 days, the benchmark would be for the 30 days prior. The only exception is when viewing the full history (2004-Present), when the percentages are benchmarked at 2004.



Reading the Related searches chart.

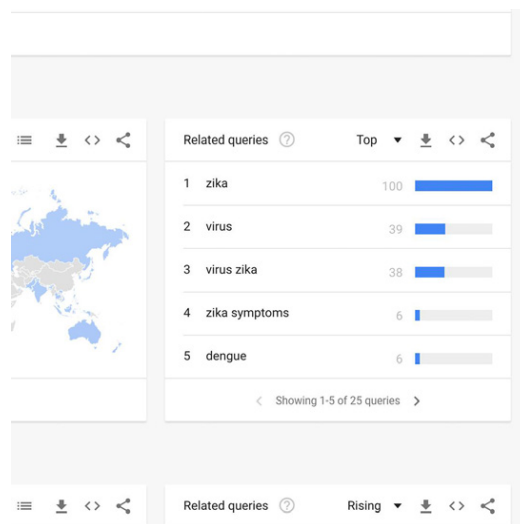
STEP 1 OF 2

Click the dropdown to see **Top** terms.



STEP 2 OF 2

This table shows terms that are most frequently searched with the term you entered, in the same search session, with the same chosen category, country or region. If you didn't choose a search term (and just chose a category or region), overall searches are displayed.



Data that is excluded.

SINGLE STEP

Trends excludes certain data from your searches:

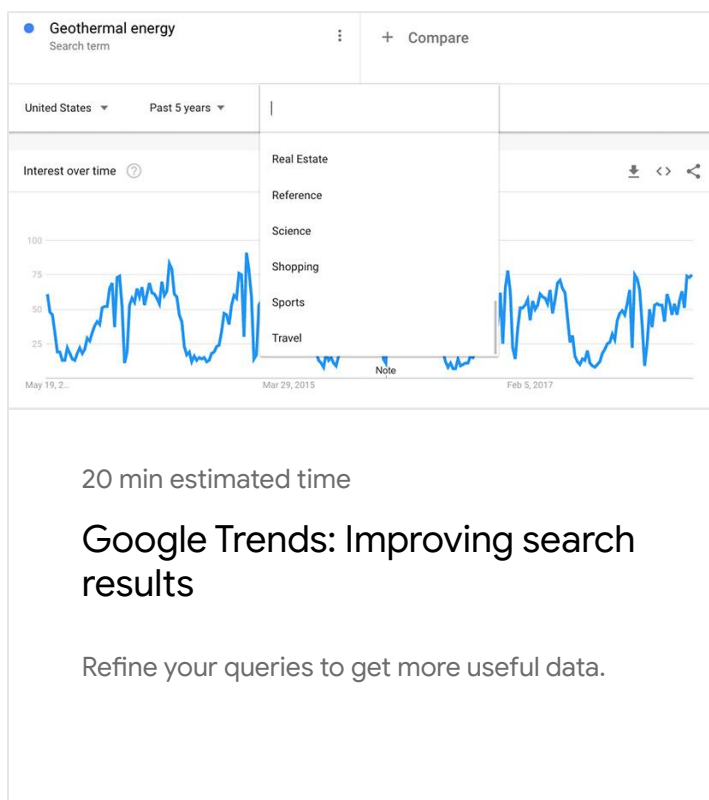
- **Searches made by very few people:** Trends only analyzes data for popular terms, so search terms with low volume appear as 0 for a given time period.
- **Duplicate searches:** Trends eliminates repeated searches from the same user over a short period of time for better overall accuracy.
- **Special characters:** Trends filters out queries with apostrophes and other special characters.



Congratulations!

You completed “Google Trends: Understanding the data.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 13

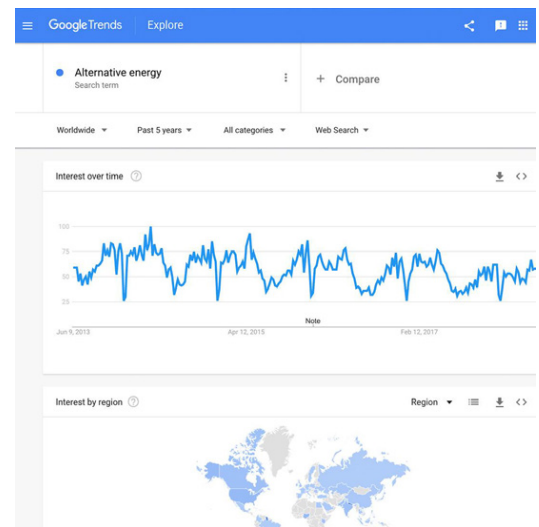
Google Trends: Improving search results

Refine your queries to get more useful data.

Lesson overview

Moving beyond the basics.

Google Trends allows you to easily see the stories and subjects that are drawing attention. Exploring topics is a relatively simple process, and Trends includes some features and options to help refine your results. There are several ways to get the precise data you need to help prompt a story idea or support a point.



- 1 Refining your search using punctuation.
- 2 Interpreting YouTube Geo Search results.
- 3 Refining your search by region.
- 4 Narrowing or expanding each search topic by geography and time.
- 5 Exploring US metropolitan areas.
- 6 Refining your results using categories.
- 7 Using rising data.
- 8 Finding related queries.

For more Data Journalism lessons, visit:

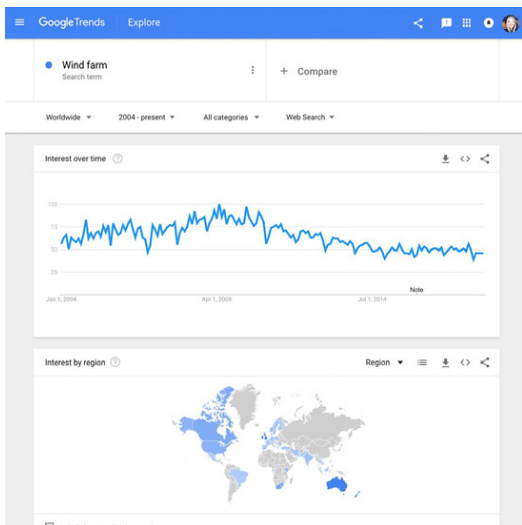
newsinitiative.withgoogle.com/training/course/data-journalism

Refining your search using punctuation.

SINGLE STEP

You can use punctuation to filter your Trends search results.

For example, if you're writing a story about alternative energy and search the term wind farm, with no punctuation, your results will contain both words in any order, along with other words (offshore wind farm, new methods to farm wind, wind saves the farm, etc.). No misspellings, spelling variations, synonyms, plural or singular versions of your terms will be included.

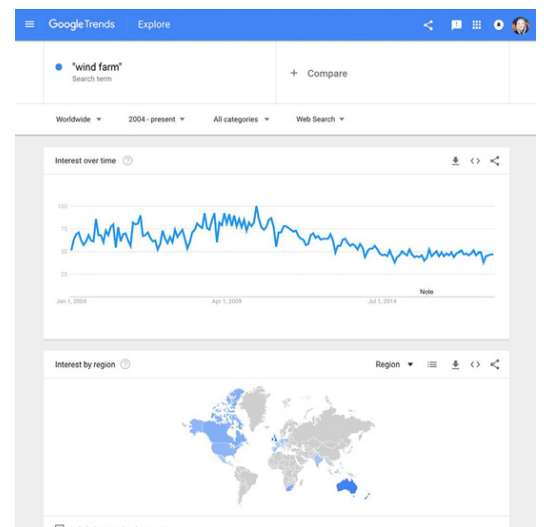


Punctuation guide.

Here's how various punctuation can affect this search:

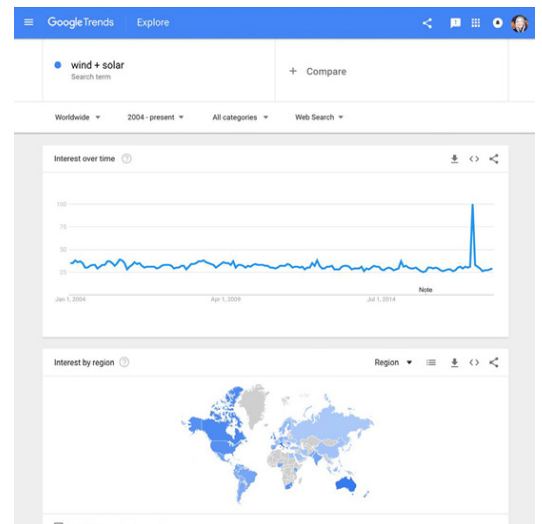
STEP 1 OF 4

“wind farm” – Double quotation marks around your term give results that include that exact term, possibly with words before and after (offshore wind farm, for example).



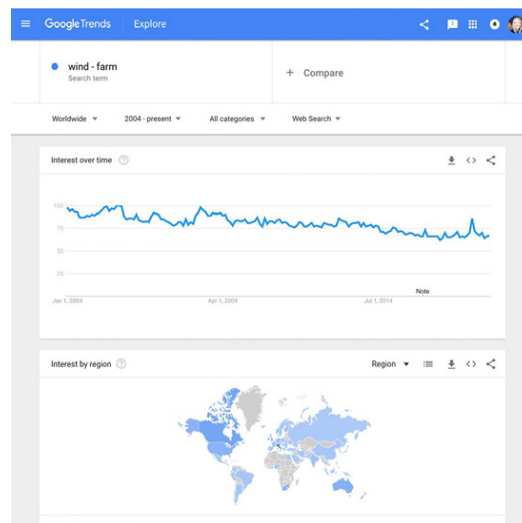
STEP 2 OF 4

wind + solar – Results can include the words wind OR solar.



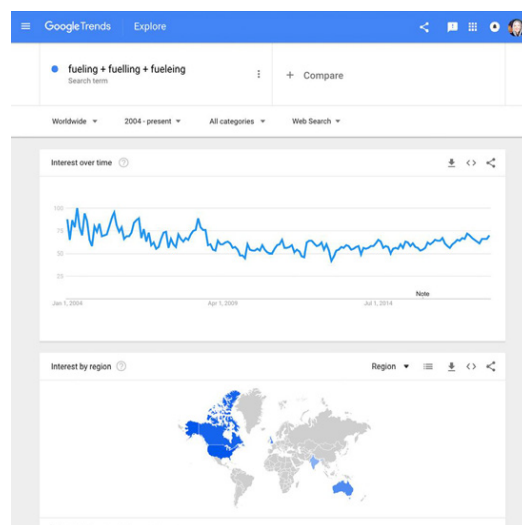
STEP 3 OF 4

wind - farm – Results will include the word wind, but exclude the word farm. This is useful when searching a term that’s part of a popular phrase you want to keep from dominating your results.



STEP 4 OF 4

fueling + fuelling + fueleing – Results will include alternative spellings (fueling or fuelling) plus common misspellings (fueleing).

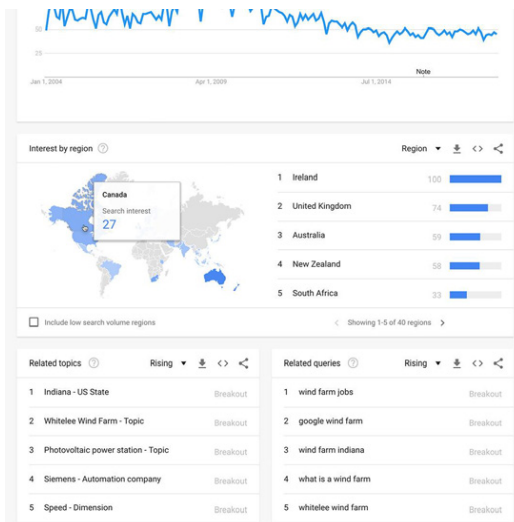


Refining your search by region.

SINGLE STEP

When you search for a term in Google Trends, your results will include a map of the world showing areas where your term is popular. Darker shades indicate where your term has a higher probability of being searched.

Simply hovering over a region will activate a pop-up window that reveals its search volume index. On the right of the map is a list view icon that displays the ranking of top regions or cities based on your term's popularity.

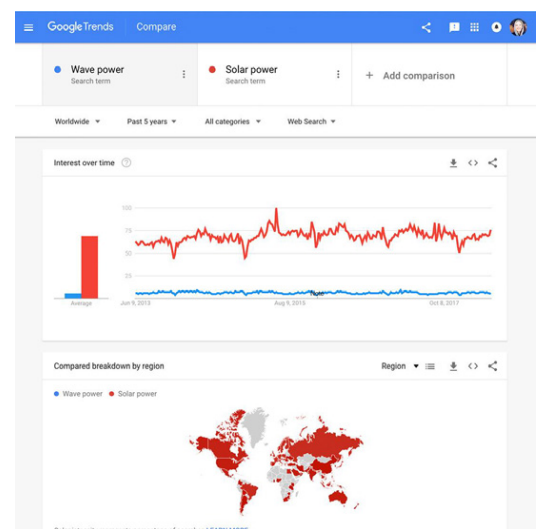


Narrowing or expanding each search topic by geography and time.

On the results page, you can refine your exploration by region and/or time period for each individual search topic.

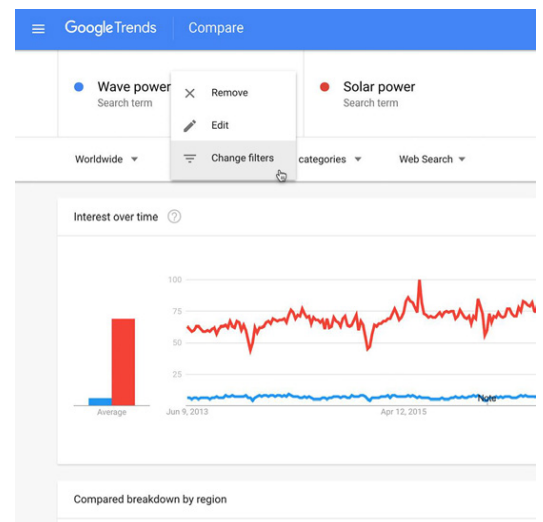
STEP 1 OF 4

For example, if you compare search interest in Wave power and Solar power, you'll find that Solar power typically outpaces the Wave power for worldwide search interest.



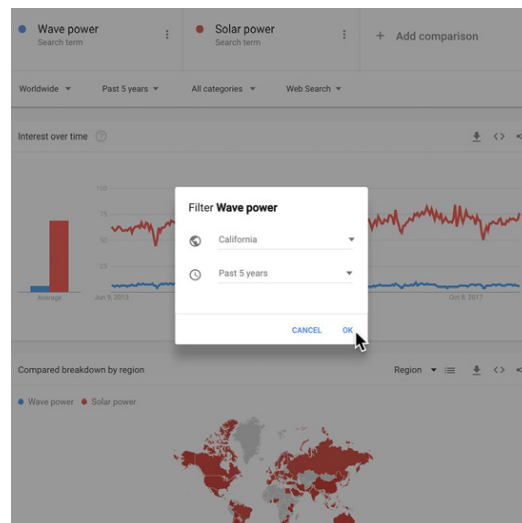
STEP 2 OF 4

If you want to examine local interest in different regions, hover over your search term and click the three dots. Then select **Change filters** from the menu.



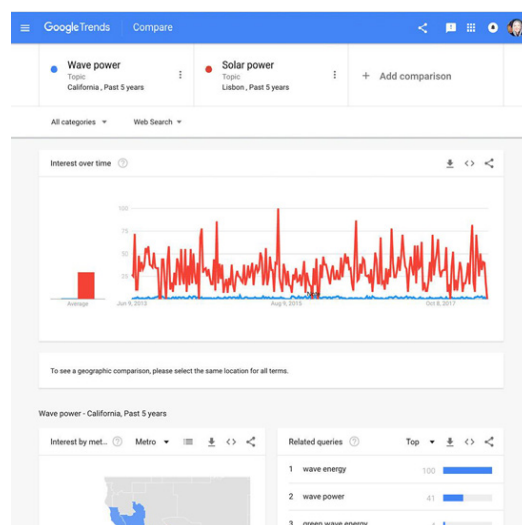
STEP 3 OF 4

Specify the region and time period you want to review.



STEP 4 OF 4

The results may reveal a different relationship between the two search terms than what was shown in the worldwide comparison.

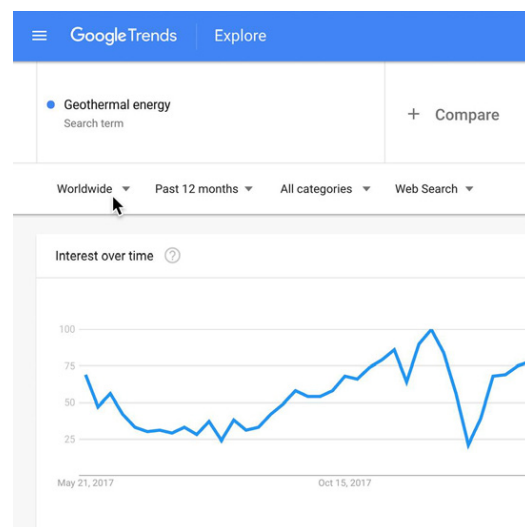


Exploring US metropolitan areas.

Trends even allows you to refine your geographical breakdown to the city level. Metros are geographical areas that generally correspond to U.S. metropolitan areas. Currently, Google Trends only provides metros for the United States. Let's say you are continuing to research a story about energy and you want to look at geothermal energy search trends. You can get information for a specific metro area one of two ways:

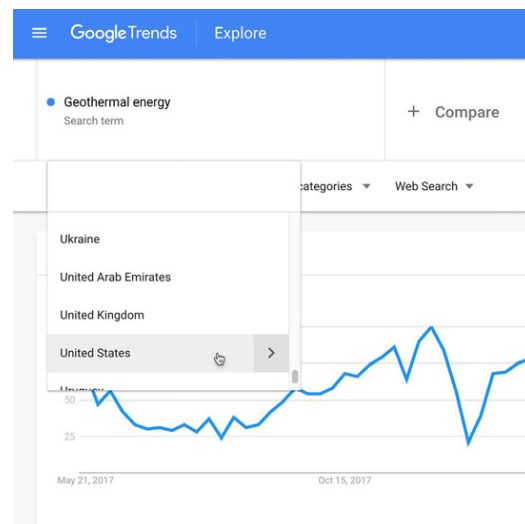
STEP 1 OF 4

Click **Worldwide** at the top of your results page.



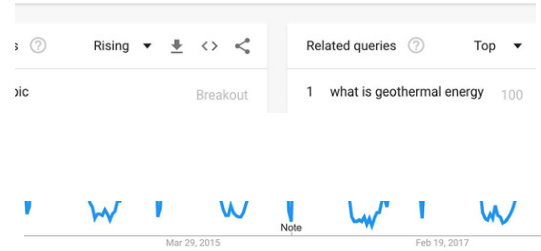
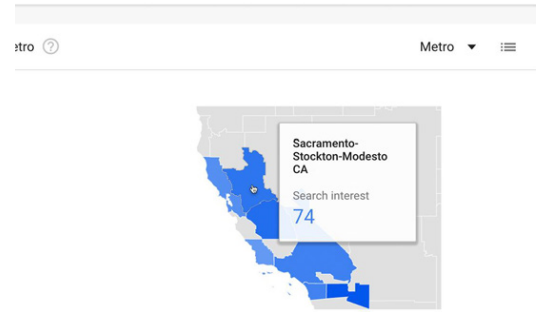
STEP 2 OF 4

Choose **United States**.



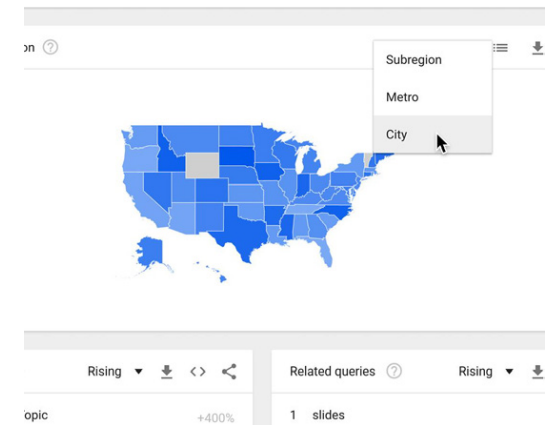
STEP 3 OF 4

To examine the data for each metro area, click a specific state.



STEP 4 OF 4

To view the map by city or metro area, use the **Subregion** menu above the map.

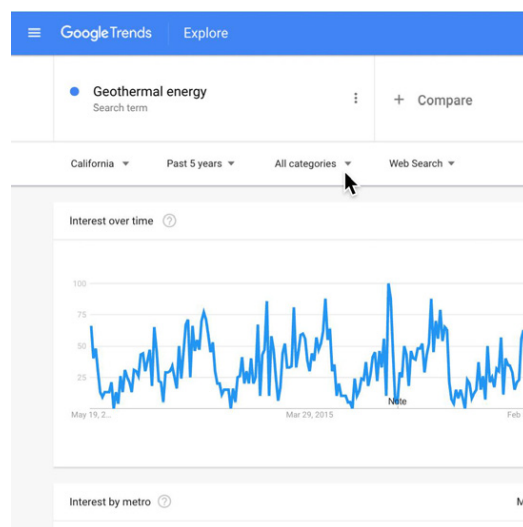


Refining your results using categories.

If you're using Trends to search for a word with multiple meanings, you can filter your results by category to get data for the version you're looking for.

STEP 1 OF 2

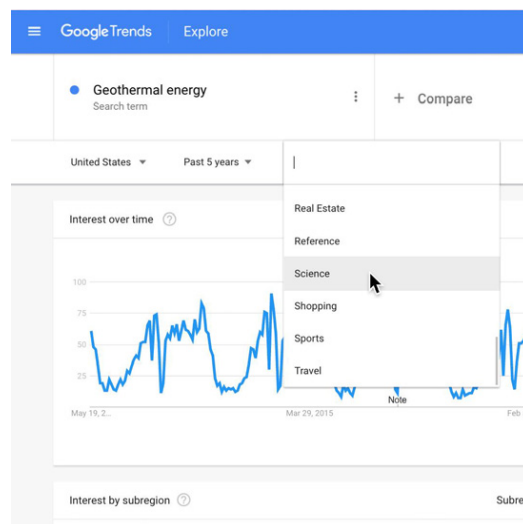
Search for your term, and on the results page, click **All categories** under the search box to reveal your category choices.



STEP 2 OF 2

Choose a category most closely related to the meaning you prefer.

The results will reflect the number of searches for that term in that context.



Using rising data.

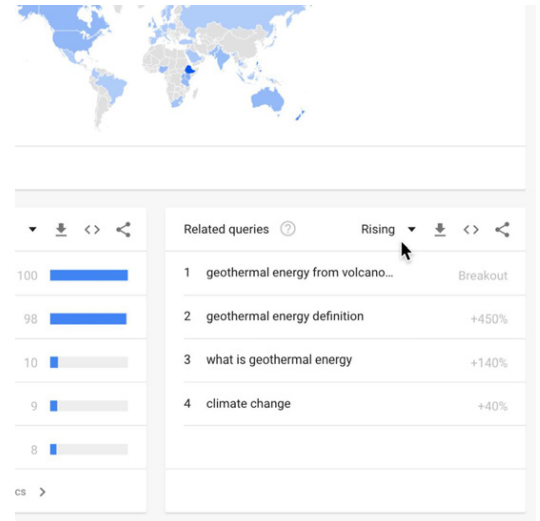
SINGLE STEP

Rising shows terms that were searched for with the term you entered (or overall, if no search term was entered) which had the most significant growth in volume in the requested time period. For each rising search term, you'll see a percentage of the term's growth compared to the previous time period. If you see the term **Breakout**, it means that the search term did not exist in the previous time period, and we have no baseline.

The percentages are based on the percent increase in search interest for the selected time frame.

Using geothermal energy as an example, if we're looking at the last 7 days, the benchmark for the rise in searches for the term geothermal energy would be 7 days prior; if it was the last 30 days, the benchmark would be for the 30 days prior.

The only exception is when viewing the full history (2004-Present), when the percentages are benchmarked at 2004.

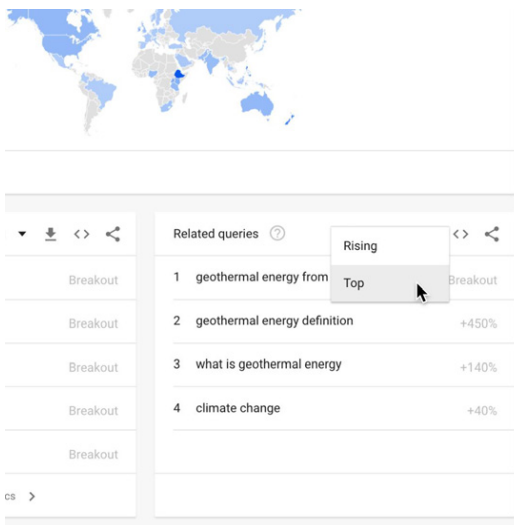


Finding related queries.

When you search for a term, the **Related queries** chart will appear at the bottom of your results page. **Related queries** can be used to determine the top and rising terms associated to any topic or trending story. This can be useful for finding unique angles on a story, for example.

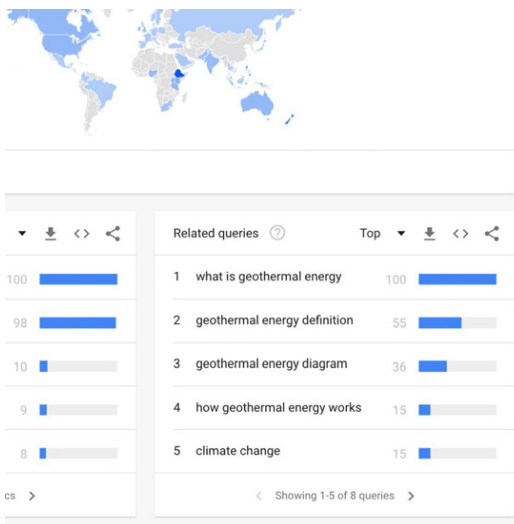
STEP 1 OF 2

On the chart, click the **Rising** tab and select **Top**.



STEP 2 OF 2

Top displays terms that are most frequently searched with the term you entered, in the same search session, with the same chosen category, country or region.



Congratulations!

You completed “Google Trends: Improving search results.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



10 min estimated time

Google Fusion Tables: Creating intensity maps

Make demographic data easier to understand.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 14

Google Fusion Tables: Creating intensity maps

Make demographic data easier to understand.

Lesson overview

About Google Fusion Tables

Google Fusion Tables has many helpful features, but the most popular by far is its ability to create free choropleth maps (intensity maps) with just a few simple steps. This makes it easy for journalists to visualize and publish demographic data, such as election or population numbers, so that readers can more easily understand the story.



- 1 Adding Google Fusion Tables to Drive.
- 2 Importing your data.
- 3 Review your Fusion Table and basic map.
- 4 Sourcing boundary data to create customized maps.
- 5 Arranging your merge (fusion).
- 6 Aligning your data.
- 7 View your shaded map.
- 8 Customizing your shaded map.
- 9 Sharing and embedding your map.

For more Data Journalism lessons, visit:

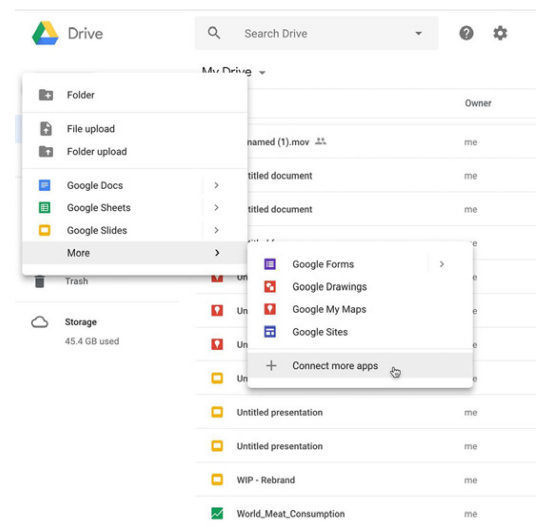
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Adding Google Fusion Tables to Drive.

If you've never used Google Fusion Tables before, you'll need to add the app to your Google Drive menu:

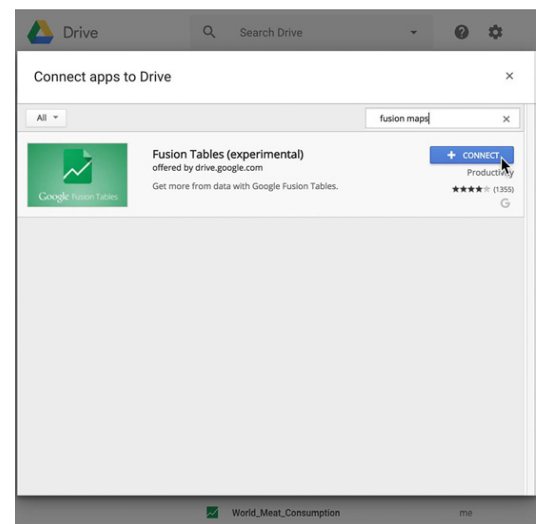
STEP 1 OF 3

Click **New**, then **Connect More Apps**



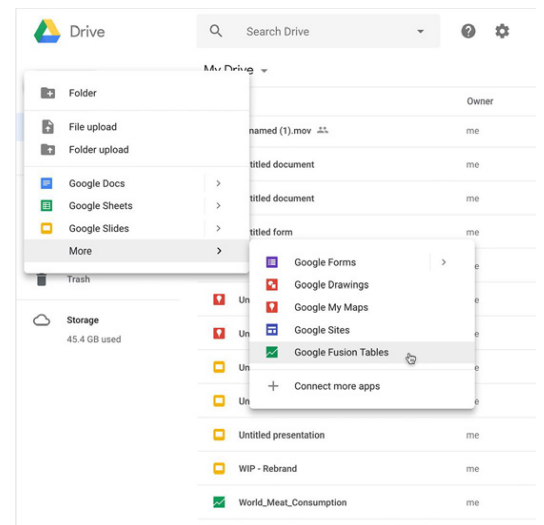
STEP 2 OF 3

Search for Fusion Tables.



STEP 3 OF 3

Once you add the app to your Drive, you'll always see it as an option in the menu.



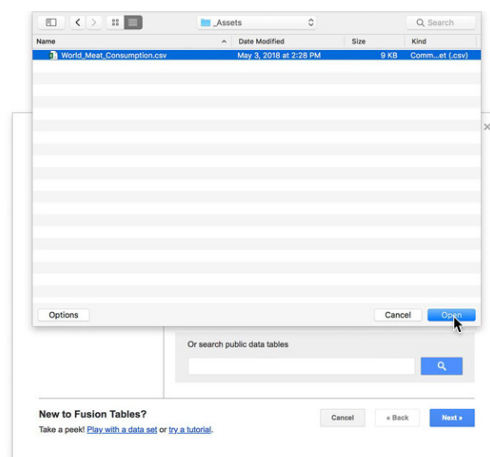
Importing your data.

Fusion Tables can import data in formats including .csv, .tsv, .txt and .kml; or directly from a Google Sheet.

Let's say you're doing a story on the environmental effects of cattle ranching, and want to create a map that represents meat consumption throughout the world. If you'd like to use the same sample .csv file of data that we're using for this exercise — global meat consumption numbers — [click here](#) to download it.

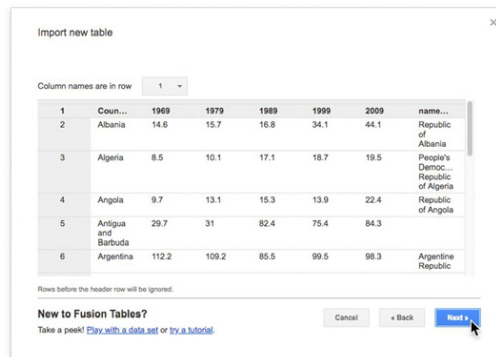
STEP 1 OF 3

Click **Choose File** and select a data file from your computer that you want to import, or **search public data tables**. Then click **Next**.



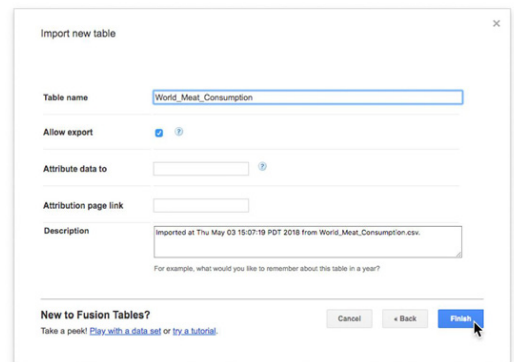
STEP 2 OF 3

Preview your Fusion Table data, then click **Next**.



STEP 3 OF 3

Here you'll have the opportunity to add metadata to your table, including a table name, data attribution details and a description. The Export option, when checked, allows other users to export this data as a file. Click **Finish**.



The screenshot shows a dialog box titled "Import new table" with a close button (X) in the top right corner. The form contains the following fields and options:

- Table name:** A text input field containing "World_Meat_Consumption".
- Allow export:** A checked checkbox with a help icon (i).
- Attribute data to:** An empty text input field with a help icon (i).
- Attribution page link:** An empty text input field.
- Description:** A text area containing "Imported at Thu May 03 15:07:19 PDT 2018 from World_Meat_Consumption.csv". Below the text area is a prompt: "For example, what would you like to remember about this table in a year?".

At the bottom of the dialog, there is a section titled "New to Fusion Tables?" with the text "Take a peek! [Play with a data set](#) or [try a tutorial](#)." To the right of this section are three buttons: "Cancel", "Back", and "Finish". A mouse cursor is pointing at the "Finish" button.

Review your Fusion Table and basic map.

It's critical to wait until the geocoding from the previous step is complete before continuing with the following steps.

STEP 1 OF 2

Now you'll see your finished Fusion Table. You can edit the information and settings in this window at any time.

World_Meat_Consumption
Imported at Thu May 17 13:22:37 PDT 2018 from World_Meat_Consumption.csv
Edited at 13:26

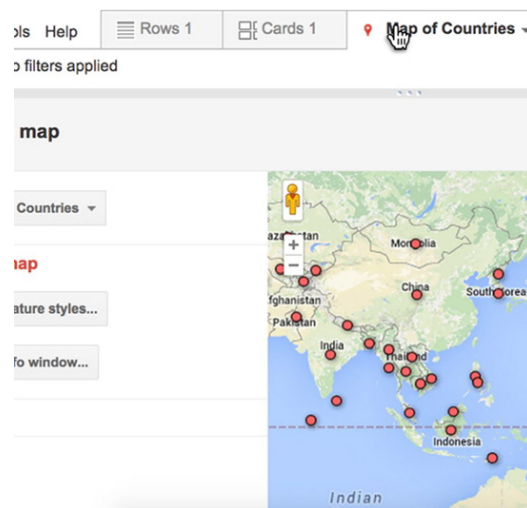
File Edit Tools Help Rows 1 Cards 1 Map of Countries

Filter No filters applied
1-100 of 182

Countries	1969	1979	1989	1999	2009	name_forma
Kiribati	21.1	25.4	21.7	26.2	38.5	Republic of Kiribati
Kuwait	38.1	58	64.5	70.8	119.2	State of Kuwait
Morocco	13.2	12.3	18.7	21.3	30.1	Kingdom of Morocco
Mozambi...	5.9	5.7	5.6	10.9	7.8	Republic of Mozambique
Myanmar	7	7.4	7	8.9	32.1	Union of Burma
Namibia	42.5	42.4	23.3	33.3	28.3	Republic of Namibia
Nepal	6.7	8.1	9.8	9.8	9.9	Kingdom of Nepal
Netherlands	56.9	72.8	74.8	85.8	85.5	Kingdom of the Netherlands
Netherlands Antilles			80	102.9	91	
Kyrgyzstan				39.6	36.9	Kyrgyz Republic
New Caledonia	61.8	57.6	52.1	67.6	72.6	

STEP 2 OF 2

Click the **Map of Countries** tab and you'll see that the map visualization has already been created for you, using the location information listed in the column. This will drop a red placemark in each of the locations listed.



Sourcing boundary data to create customized maps.

Let's say that instead of using placemarks, you'd like to shade whole countries to more accurately represent your data.

To do this, you need boundary data--information that helps place your data within accurate borders on a map. Unfortunately, there isn't one location on the web to find all the boundary data you might need, so here are a couple of resources to help you get started.

STEP 1 OF 2

Try searching [Google Tables](#) for available boundary data sets.

The screenshot shows a Google search for "world boundaries". The search results include a link to "The World Factbook" with a table of land boundaries. The table lists countries and their total land boundaries in kilometers.

Country	LAND BOUNDARIES(KM)
Afghanistan	total: 5,987 km;
Akrotiri	total: 48 km; border
Western Sahara	total: 2,549 km;
World	the land boundaries
Yemen	total: 1,501 km;

STEP 2 OF 2

Also, many boundary datasets have been uploaded by users and are free to the public, like [this one](#) that we'll use during this exercise, which covers country boundaries worldwide.

The screenshot shows a Google Tables spreadsheet titled "World Boundaries (Public)". The spreadsheet contains a table with columns for description, name, ex_name, CENTRYNAME, FIPSCNTRY, and geometry. The table lists various countries and their corresponding FIPS codes and geometry data.

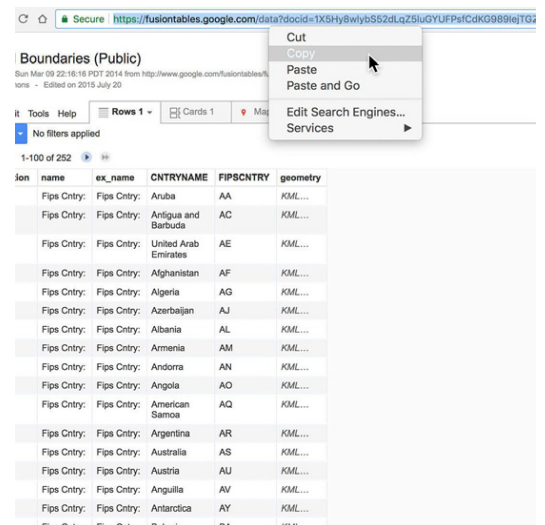
description	name	ex_name	CENTRYNAME	FIPSCNTRY	geometry
Fips Cntry	Fips Cntry	Anaba	AA	KM...	
Fips Cntry	Fips Cntry	Antigua and Barbuda	AC	KM...	
Fips Cntry	Fips Cntry	United Arab Emirates	AE	KM...	
Fips Cntry	Fips Cntry	Afghanistan	AF	KM...	
Fips Cntry	Fips Cntry	Algeria	AG	KM...	
Fips Cntry	Fips Cntry	Azerbaijan	AJ	KM...	
Fips Cntry	Fips Cntry	Albania	AL	KM...	
Fips Cntry	Fips Cntry	Armenia	AM	KM...	
Fips Cntry	Fips Cntry	Andorra	AN	KM...	
Fips Cntry	Fips Cntry	Angola	AO	KM...	
Fips Cntry	Fips Cntry	American Samoa	AQ	KM...	
Fips Cntry	Fips Cntry	Argentina	AR	KM...	
Fips Cntry	Fips Cntry	Australia	AS	KM...	
Fips Cntry	Fips Cntry	Austria	AU	KM...	
Fips Cntry	Fips Cntry	Anguilla	AV	KM...	
Fips Cntry	Fips Cntry	Antarctica	AY	KM...	
Fips Cntry	Fips Cntry	Bahrain	BA	KM...	
Fips Cntry	Fips Cntry	Barbados	BB	KM...	
Fips Cntry	Fips Cntry	Botswana	BC	KM...	
Fips Cntry	Fips Cntry	Bermuda	BD	KM...	
Fips Cntry	Fips Cntry	Belgium	BE	KM...	

Arranging your merge (fusion).

To create your customized intensity map, you need to merge the table you just created in Google Fusion Tables with the boundary data, so that you can shade each country based on the meat consumption data. This is where the “fusion” in “Fusion Tables” comes from.

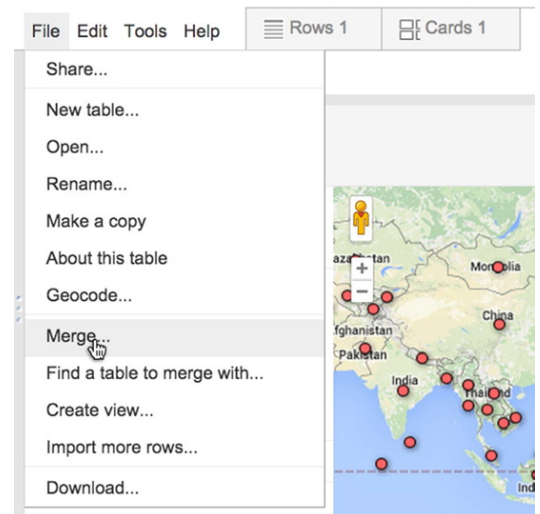
STEP 1 OF 3

First, copy the URL for the boundary data provided (in the previous step).



STEP 2 OF 3

Now go to your meat consumption table and click **File**, then **Merge**.



STEP 3 OF 3

Paste the boundary data URL into the field at the bottom of the menu. Click **Next**.

Merge: Select a table ×

Tables

Name	Owner	Last modified ↓
------	-------	-----------------

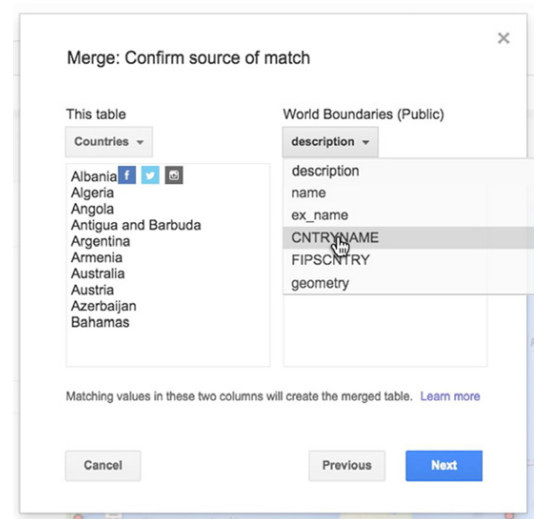
Or paste a web address here:
<https://www.google.com/fusiontables/data?docid=1X5Hy8wybS52dLqZ5luGYUFPsfCdKG9891eJTGZL#rows:1>

Aligning your data.

In order for Fusion Tables to properly merge two tables, each table needs to contain a column of similar, matchable data.

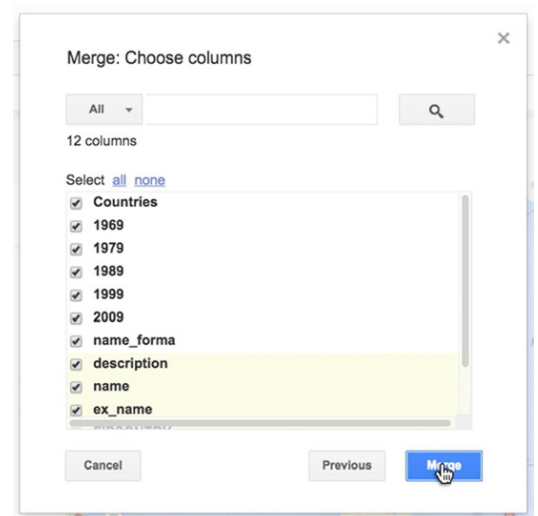
STEP 1 OF 3

Now, choose which columns you'd like to merge—the information that will be included in each country's description when the map is complete. For this exercise, we'll include all the columns from both tables. Then click **Merge**.



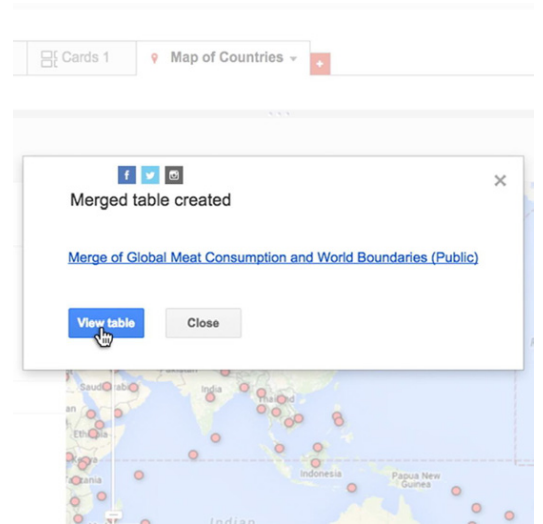
STEP 2 OF 3

In this case, the column found in both tables is the Country Name column. Make sure both are selected in the two pulldowns. Click **Next**.



STEP 3 OF 3

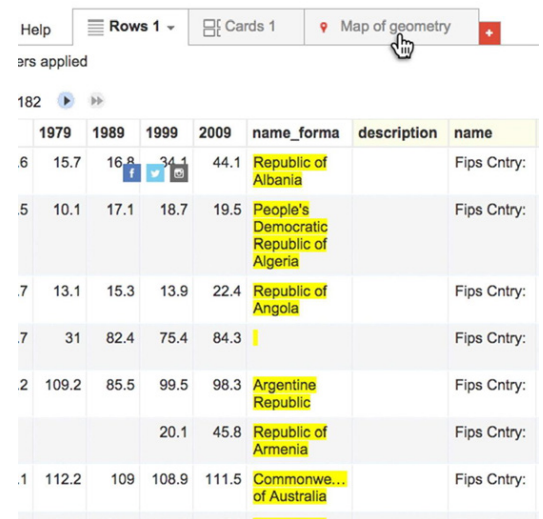
To return to your Fusion Table, go to the next window and click **View table**.



View your shaded map.

STEP 1 OF 2

Now click the **Map of Geometry** tab to see the intensity map.



Help Rows 1 Cards 1 Map of geometry

ers applied

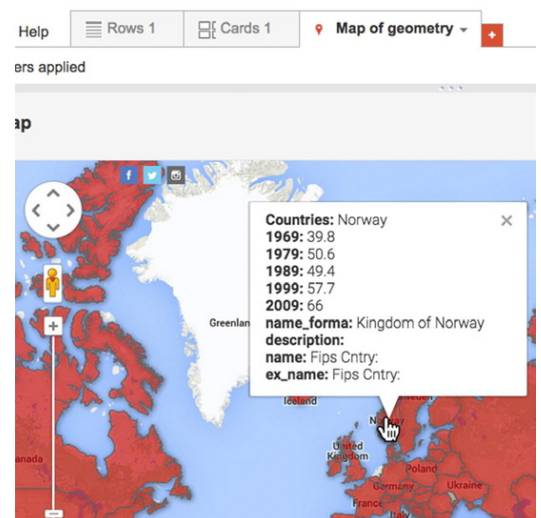
182

	1979	1989	1999	2009	name_forma	description	name
6	15.7	16.8	34.1	44.1	Republic of Albania		Fips Cntry:
5	10.1	17.1	18.7	19.5	People's Democratic Republic of Algeria		Fips Cntry:
7	13.1	15.3	13.9	22.4	Republic of Angola		Fips Cntry:
7	31	82.4	75.4	84.3			Fips Cntry:
2	109.2	85.5	99.5	98.3	Argentine Republic		Fips Cntry:
			20.1	45.8	Republic of Armenia		Fips Cntry:
1	112.2	109	108.9	111.5	Commonwe... of Australia		Fips Cntry:

STEP 2 OF 2

If your map is not already centered in the window, pull it down to view it, and use the controls to move in closer to reveal your boundary graphics.

When you click on a country, the corresponding meat consumption info should show up in the window.

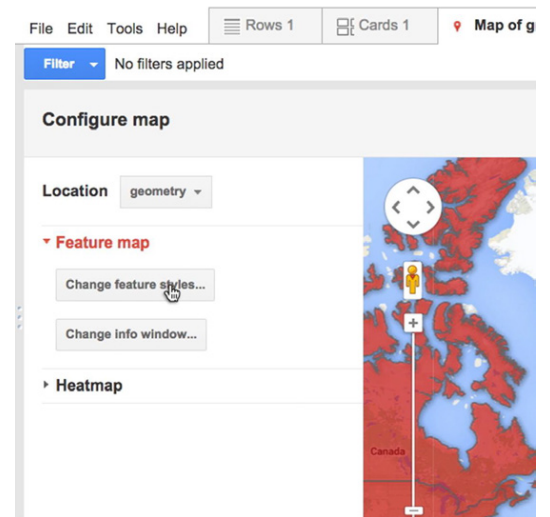


Customizing your shaded map.

Now let's add a gradient to the map to make it a true intensity map and more visually effective for the story. For this exercise, we'll shade the countries based on the 2009 data.

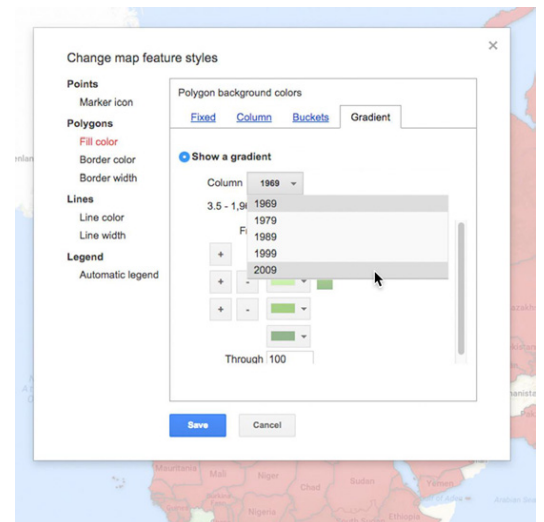
STEP 1 OF 4

Click **Change feature styles** along the left (or, if you don't see that menu, go to **Tools**, then **Change map** to get the button to appear).



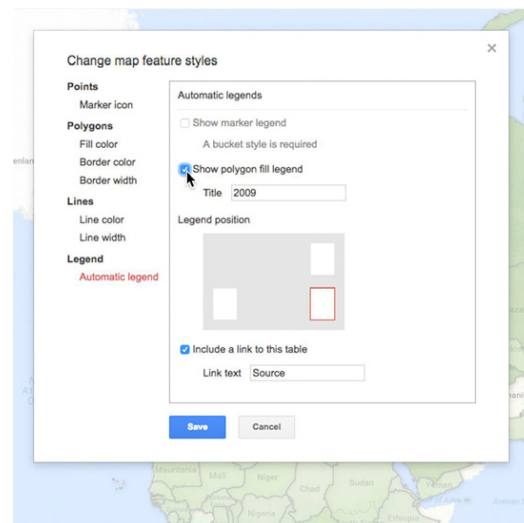
STEP 2 OF 4

Under Polygons, select **Fill color**. Click the **Gradient** tab and then click **Show a gradient**. In the **Column** pulldown, you can customize the range, or use the suggested range. Make sure the 2009 column is selected, as we'll be shading the polygons (country shapes, in this case), based on this column of information. Here we can also tweak the colors.



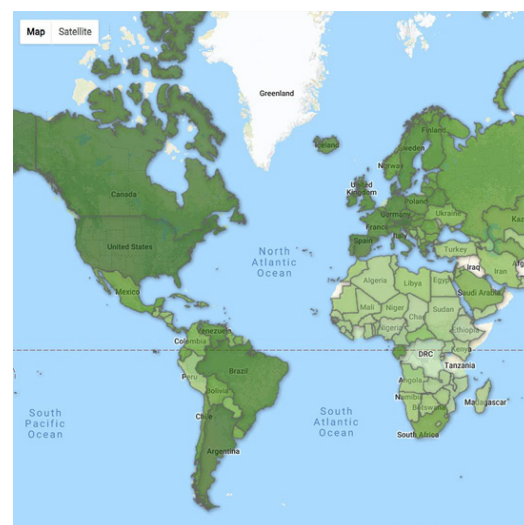
STEP 3 OF 4

In this window we can also add a legend to our map. Just select the **Automatic legend** option in the menu on the left, then select a position for your legend. Click **Save**.



STEP 4 OF 4

Now we can more clearly see which countries consumed more meat in 2009.

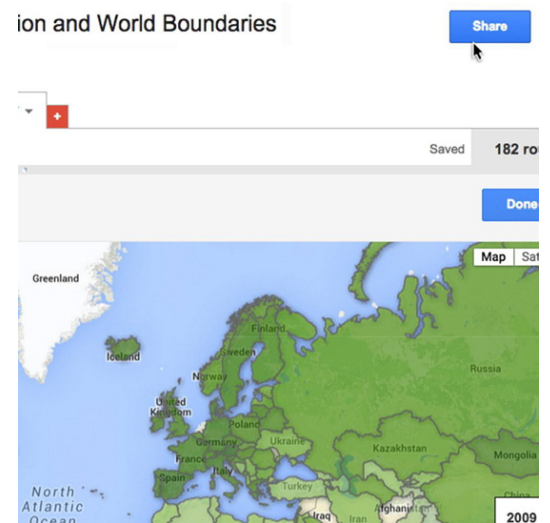


Sharing and embedding your map.

The map is complete!

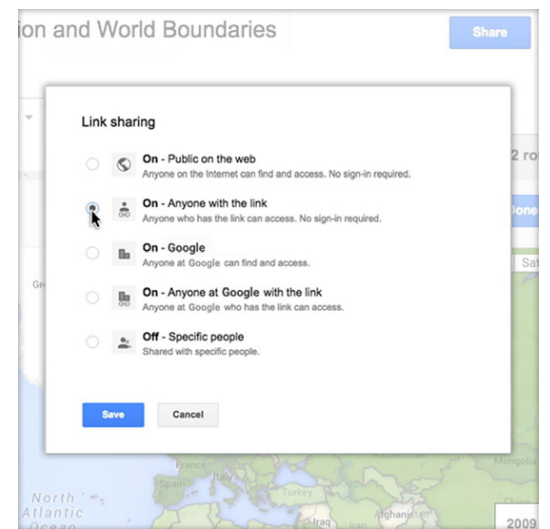
STEP 1 OF 4

To share and embed this map on your website, first click **Share**.



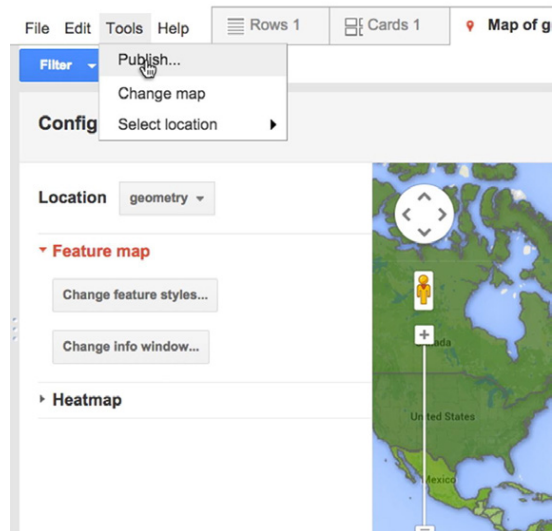
STEP 2 OF 4

Change your settings to either **Public** or **Anyone with the link**.



STEP 3 OF 4

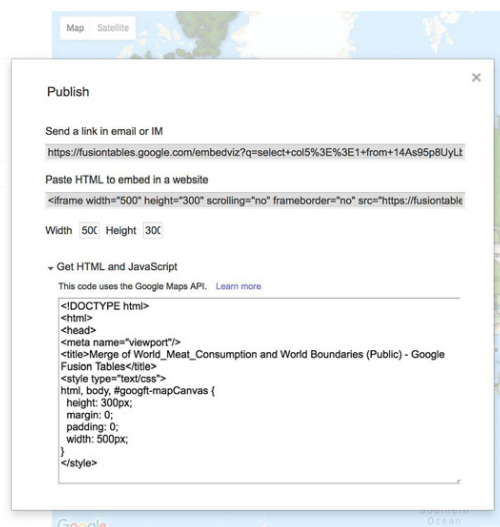
Now go to **Tools**, then **Publish**.



STEP 4 OF 4

You can copy the URL for the table or copy and paste the iframe to embed the interactive map on your website. You can also change the height and width of your map directly in the iframe.

Use the HTML and JavaScript provided to further customize the look and style of your Fusion Tables map. You can also get inspired and grab code samples on the Google Maps API site.



Congratulations!

You completed “Google Fusion Tables: Creating intensity maps.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson.

```
fx =importHTML("https://en.wikipedia.org/wiki/List_of_highest-grossing_films", "table", 1)
```

	A	B	C	D	E	F	G
1	Rank	Peak	Title	Worldwide gross	Year	Reference(s)	
2	1	1	*Avatar*	\$2,787,965,087	2009	[# 1][# 2]	
3	2	1	*Titanic*	\$2,187,463,944	1997	[# 3][# 4]	
4	3	3	*Star Wars: The	\$2,068,223,624	2015	[# 5][# 6]	
5	4	4	*Avengers: Infini	\$2,048,359,754	2018	[# 7][# 8]	
6	5	3	*Jurassic World*	\$1,671,713,208	2015	[# 9][# 10]	
7	6	3	*The Avengers*	\$1,518,812,988	2012	[# 11][# 12]	
8	7	4	*Furious 7*	\$1,516,045,911	2015	[# 13][# 14]	
9	8	5	*Avengers: Age	\$1,405,403,694	2015	[# 15][# 14]	
10	9	9	*Black Panther*	\$1,346,913,161	2018	[# 16][# 17]	
11	10	3	*Harry Potter anc	\$1,341,511,219	2011	[# 18][# 19]	
12	11	9	*Star Wars: The	\$1,332,539,889	2017	[# 20][# 21]	
13	12	12	*Jurassic World:	\$1,309,484,461	2018	[# 22][# 8]	
14	13F	5	*Frozen*	\$1,290,000,000	2013	[# 23][# 24]	
15	14	10	*Beauty and the	\$1,263,521,126	2017	[# 25][# 26]	
16	15	15	*Incredibles 2*	\$1,242,786,014	2018	[# 27][# 8]	
17	16	11	*The Fate of the	F8\$1,238,764,76	2017	[# 28][# 26]	

Google Sheets: Scraping data from the internet

Build your own data sets using Google Sheets.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 15 : Part 01 of 04 in the Visualizing Data module

Google Sheets: Scraping data from the internet

Build your own data sets using Google Sheets.

Lesson overview

Learn to build your own data sets using Google Sheets.

There is a massive amount of data available on the internet that you can use to research and visualize stories. Finding the data, and getting it into a format you can work with is the first step.

	A	B	C	D	E	F	G
1	Rank	Peak	Title	Worldwide gross	Year	Reference(s)	
2		1	*Avatar*	\$2,787,965,087	2009	[# 1][# 2]	
3		2	1 *Titanic*	\$2,187,463,944	1997	[# 3][# 4]	
4		3	*Star Wars: The	\$2,068,223,624	2015	[# 5][# 6]	
5		4	*Avengers: Infini	\$2,048,359,754	2018	[# 7][# 8]	
6		5	*Jurassic World*	\$1,671,713,208	2015	[# 9][# 10]	
7		6	3 *The Avengers*	\$1,518,812,988	2012	[# 11][# 12]	
8		7	4 *Furious 7*	\$1,518,046,911	2015	[# 13][# 14]	
9		8	5 *Avengers: Age	\$1,405,403,684	2015	[# 15][# 16]	
10		9	9 *Black Panther*	\$1,349,613,161	2018	[# 17][# 18]	
11		10	3 *Harry Potter and	\$1,341,511,219	2011	[# 19][# 20]	
12		11	9 *Star Wars: The	\$1,332,539,689	2017	[# 21][# 22]	
13		12	*Jurassic World*	\$1,309,484,461	2018	[# 23][# 24]	
14	13F		5 *Frozen*	\$1,290,000,000	2013	[# 25][# 26]	
15		14	10 *Beauty and the	\$1,283,521,126	2017	[# 27][# 28]	
16		15	15 *Incredibles 2*	\$1,242,786,014	2018	[# 29][# 30]	
17		16	11 *The Fate of the	\$851,238,764,76	2017	[# 31][# 32]	
18		17	5 *Iron Man 3*	\$1,214,811,252	2013	[# 33][# 34]	
19		18	10 *Minions*	\$1,159,398,397	2015	[# 35][# 36]	
20		19	12 *Captain Americ	\$1,153,304,495	2016	[# 37][# 38]	
21		20	4 *Transformers: C	\$1,123,794,079	2011	[# 39][# 40]	
22		21	2 *The Lord of the	\$1,120,237,002	2003	[# 41][# 42]	
23		22	7 *Skyfall*	\$1,108,561,013	2012	[# 43][# 44]	
24		23	10 *Transformers: A	\$1,104,054,072	2014	[# 45][# 46]	
25		24	7 *The Dark Knight	\$1,084,939,099	2012	[# 47][# 48]	
26		25	25 *Aquaman*	\$1,074,516,462	2018	[# 49][# 50]	
27		26	4 TCS3	\$1,066,969,703	2010	[# 51][# 52]	
28		27	3 *Pirates of the C	\$1,066,179,725	2006	[# 53][# 54]	
29		28	20 *Rogue One: A S	\$1,056,057,273	2016	[# 55][# 56]	
30		29	6 *Pirates of the C	\$1,045,713,802	2011	[# 57][# 58]	

- 1 Starting a new spreadsheet.
- 2 Finding reliable data.
- 3 Importing data to Google Sheets.
- 4 Troubleshooting and error messages.
- 5 Displaying your data.

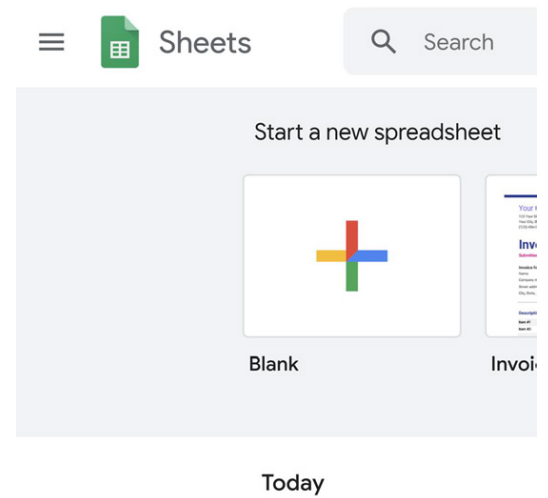
For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

Starting a new spreadsheet.

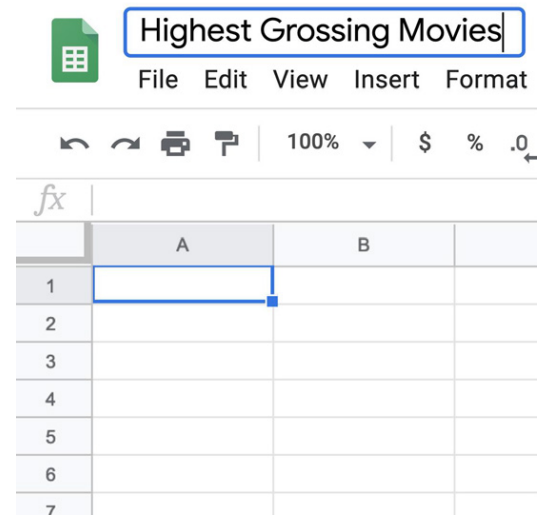
STEP 1 OF 2

First, you need to create a blank spreadsheet. Go to sheets.google.com. Under **Start a new spreadsheet**, click the + icon.



STEP 2 OF 2

To name your spreadsheet, click the text in the top left corner. Let's name this one "Highest Grossing Movies."



Finding reliable data.

By sourcing data from government sites, scientific publications, Wikipedia, Google Public Data Explorer and more, you can tell data stories on almost any topic. In this lesson, we'll practice with data about movies.

STEP 1 OF 2

Go to **google.com** and **search highest grossing films**. One of the first links should be a Wikipedia entry with multiple tables. One list, called “the top 50 highest-grossing films of all time” cites multiple references, so we will use that one. Always check to make sure you’re scraping data from reliable sources.



STEP 2 OF 2

To import this table to Google Sheets, copy the address of the Wikipedia page by highlighting the URL, right clicking on it, and selecting **copy**.



Importing data to Google Sheets.

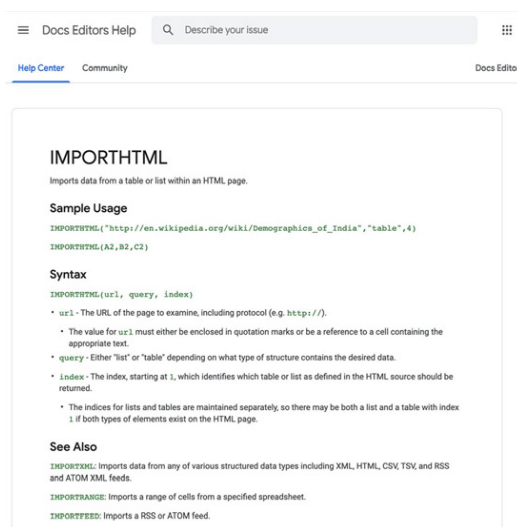
We'll use `importHTML` to import the table from Wikipedia to our spreadsheet. This powerful formula is built into Google Sheets to help you import tables or lists from web pages. To learn more about how `importHTML` works and see examples, read the [Google Sheets documentation pages](#).

STEP 1 OF 3

The **importHTML** tool needs three parameters to work:

- 1) a URL
- 2) the type of data we're collecting, either a table or list
- 3) the number representing the position of the table or list in the HTML code.

In this example, the first instance of a table would be numbered as one, as the table we want is the first one that shows up in the HTML. You can use trial and error to find what the position of the table is (1, 2, 3, etc.) or right click the webpage, select **Inspect > Find** to locate the table in the code.



The screenshot shows the Google Docs Editors Help page for the `IMPORTHTML` function. The page title is "IMPORTHTML" and it describes the function as "Imports data from a table or list within an HTML page." It includes a "Sample Usage" section with the following code:

```
IMPORTHTML("https://en.wikipedia.org/wiki/Demographics_of_India","table",4)
IMPORTHTML(A2,B2,C2)
```

 It also includes a "Syntax" section with the following code:

```
IMPORTHTML(url, query, index)
```

 and a list of parameters:

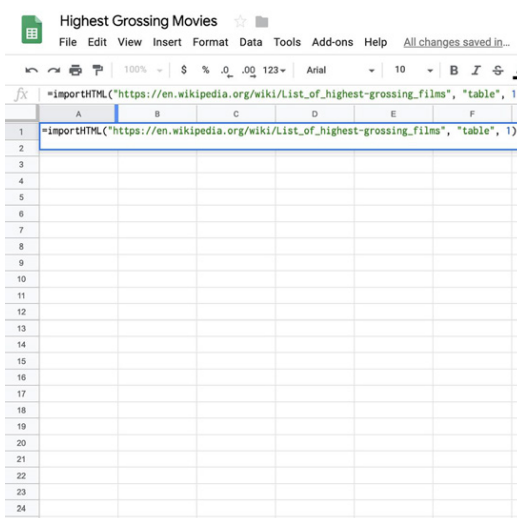
- `url` - The URL of the page to examine, including protocol (e.g. `http://`).
- `query` - The value for `url` must either be enclosed in quotation marks or be a reference to a cell containing the appropriate text.
- `index` - Either "list" or "table" depending on what type of structure contains the desired data.
- `index` - The index, starting at 1, which identifies which table or list as defined in the HTML source should be returned.

 It also includes a "See Also" section with links to `IMPORTXML`, `IMPORTRANGE`, and `IMPORTFEED`.

STEP 2 OF 3

Go to the blank sheet you created and navigate to cell A1. Type:

```
=importHTML("https://en.wikipedia.org/wiki/List_of_highest-grossing_films", "table", 1)
```



The screenshot shows a Google Sheet titled "Highest Grossing Movies". The formula bar shows the formula `=importHTML("https://en.wikipedia.org/wiki/List_of_highest-grossing_films", "table", 1)` entered in cell A1. The spreadsheet grid shows columns A through F and rows 1 through 24. The formula is visible in the formula bar and the first row of the spreadsheet.

STEP 3 OF 3

Notice that the URL and the element type (in our case, table) go between quotes — this will make the parameters green. The last parameter is a number not within quotes and it will be colored blue.

```
g_films", "table", 1)
```

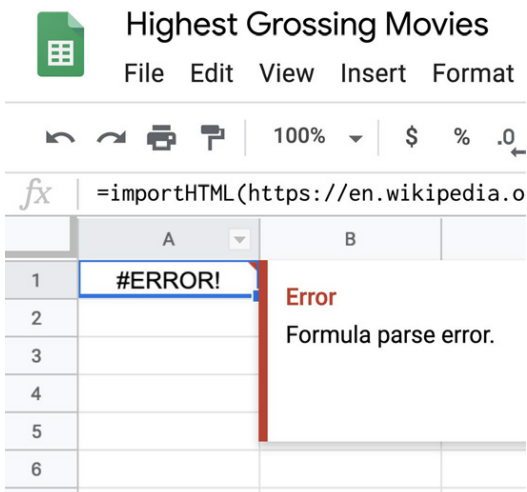
	F	
<code>_films", "table", 1)</code>		

Troubleshooting and error messages.

SINGLE STEP

If you get an ERROR! Message, check to make sure the quotes are double quotes as shown in the example.

If you get a VALUE! error, check to make sure you don't have extra parentheses or quotation marks in the cell.



Displaying your data.

SINGLE STEP

Once your ImportHTML formula is correct, press **enter** and give Google Sheets a couple of seconds. The table should load with all the rows and columns formatted.

Notice that there are some elements we need to remove so that we can visualize this data. We will learn this in the next lesson, “Google Sheets: Cleaning data.”

Rank	Peak	Title	Worldwide gross	Year	Reference(s)
1	1	1 *Avatar*	\$2,797,965,087	2009	[# 2]
2	1	1 *Titanic*	\$2,187,463,944	1997	[# 2][# 4]
4	3	3 *Star Wars: The	\$2,068,223,624	2015	[# 5][# 6]
5	4	4 *Avengers: Infini	\$2,048,359,754	2018	[# 7][# 8]
6	5	3 *Jurassic World*	\$1,671,713,208	2015	[# 9][# 10]
7	6	3 *The Avengers*	\$1,518,812,988	2012	[# 11][# 12]
8	7	4 *Fastas 3*	\$1,518,045,911	2015	[# 13][# 14]
9	8	5 *Avengers: Age	\$1,405,403,694	2015	[# 15][# 14]
10	9	9 *Black Panther*	\$1,346,913,151	2018	[# 16][# 17]
11	10	3 *Harry Potter and	\$1,341,511,219	2011	[# 18][# 19]
12	11	9 *Star Wars: The	\$1,332,539,889	2017	[# 20][# 21]
13	12	12 *Jurassic World:	\$1,309,484,461	2018	[# 22][# 8]
14	13F	5 *Furious*	\$1,290,000,000	2013	[# 23][# 24]
15	14	10 *Beauty and the	\$1,263,521,126	2017	[# 25][# 26]
16	15	15 *Incredibles 2*	\$1,242,796,014	2018	[# 27][# 8]
17	16	11 *The Fate of the	\$851,238,764,76	2017	[# 28][# 26]
18	17	5 *Iron Man 3*	\$1,214,811,252	2013	[# 29][# 30]
19	18	10 *Minions*	\$1,159,398,997	2015	[# 31][# 10]
20	19	12 *Captain Americ*	\$1,153,304,495	2016	[# 32][# 33]
21	20	4 *Transformers: C	\$1,123,794,079	2011	[# 34][# 19]
22	21	2 *The Lord of the	\$1,120,237,002	2003	[# 35][# 36]
23	22	7 *Skyfall*	\$1,108,561,013	2012	[# 37][# 38]
24	23	10 *Transformers: A	\$1,104,054,072	2014	[# 39][# 40]
25	24	7 *The Dark Knight	\$1,084,959,099	2012	[# 41][# 42]
26	25	25 *Aquaman*	\$1,074,516,462	2018	[# 43]
27	26	4TS3 *Toy Story 3*	\$1,066,969,703	2010	[# 44][# 45]
28	27	3 *Pirates of the Ci	\$1,066,179,725	2006	[# 46][# 47]
29	28	20 *Rogue One: A S	\$1,056,057,273	2016	[# 48][# 49]
30	29	6 *Pirates of the Ci	\$1,045,713,802	2011	[# 50][# 51]

Congratulations!

You completed “Google Sheets: Scraping data from the internet.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:

15	*Incredibles 2*	\$1,242,786,014	2018	
11	*The Fate of the	\$1,238,764,765	2017	
5	*Iron Man 3*	\$1,214,811,252	2013	
10	*Minions*	\$1,159,398,397	2015	
12	*Captain America	\$1,153,304,495	2016	
4	*Transforme			
2	*The Lord o			
7	*Skyfall*			
10	*Transforme			
7	*The Dark K			
25	*Aquaman*			
4	*Toy Story			
3	*Pirates of			
20	*Rogue One			

Find and replace

Find

Replace with

Google Sheets: Cleaning data

Prepare your data for analysis and visualization.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 16 : Part 02 of 04 in the Visualizing Data module

Google Sheets: Cleaning data

Prepare your data for analysis and visualization.

Lesson overview

Learn to clean data in preparation for visualization.

In the previous lesson, [Google Sheets: Scraping data from the internet](#), we learned how to import a table from the Web using `importHTML`. In this lesson, we'll learn how to clean the data so it's ready for analysis and visualization.

5	*Frozen*	\$1,290,000,000	2013		
10	*Beauty and the	\$1,263,521,126	2017		
15	*Incredibles 2*	\$1,242,786,014	2018		
11	*The Fate of the	\$1,238,764,765	2017		
5	*Iron Man 3*	\$1,214,811,252	2013		
10	*Minions*	\$1,159,398,397	2015		
12	*Captain America	\$1,153,304,495	2016		
4	*Transform				
2	*The Lord o				
7	*Skyfall*				
10	*Transform				
7	*The Dark K				
25	*Aquaman*				
4	*Toy Story				
3	*Pirates of i				
20	*Rogue One				
6	*Pirates of i				
24	*Despicable				
1	*Jurassic P				
22	*Finding Do				
2	*Star Wars:				
5	*Alice in W				
24	*Zootopia*				
14	*The Hobbit				
4	*The Dark K				
2	*Harry Pott				

Find and replace

Find

Replace with

Search

Match case

Match entire cell contents

Search using regular expressions [Help](#)

Also search within formulas

- 1 Making data editable.
- 2 Editing the data.
- 3 Batch editing with **Find and replace**.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

Making data editable.

“Cleaning data” means making it usable to work with: ensuring a table has integrity, is free from inconsistencies and is structured in a way that computers will understand. That means we will remove duplicate rows, delete undesired characters and ensure that columns hold only one type of data, for example numbers or text, but not both. First, we need to make the data editable.

STEP 1 OF 3

This table shows the result of importHTML. In this form, any changes to the data source (the Wikipedia page) will automatically be reflected here, and are updated at least once an hour. However, we can't edit the values in the cells to remove undesired characters. We will use **paste special** in Google Sheets to create a static snapshot of the data. With this, we will lose the ability to update the table automatically via importHTML, but we will be able to edit it.

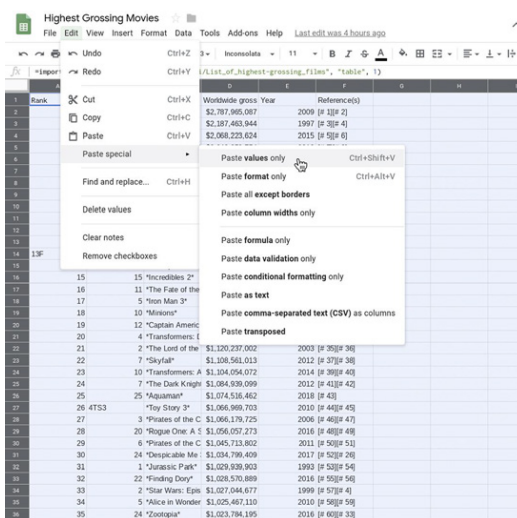
Rank	Peak	Title	Worldwide gross	Year	Reference(s)
1	1	*Avatar*	\$2,787,965,087	2009	[# 1][# 2]
2	2	*Titanic*	\$2,187,463,944	1997	[# 3][# 4]
3	3	*Star Wars: The	\$2,068,223,624	2015	[# 5][# 6]
4	4	*Avengers: Infi	\$2,048,359,754	2015	[# 7][# 8]
5	5	*Jurassic World*	\$1,671,713,208	2015	[# 9][# 10]
6	6	*The Avengers*	\$1,518,812,988	2012	[# 11][# 12]
7	7	*Furious 7*	\$1,516,405,911	2015	[# 13][# 14]
8	8	*Avengers: Age	\$1,495,403,894	2015	[# 15][# 16]
9	9	*Black Panther*	\$1,346,913,161	2018	[# 16][# 17]
10	10	*Harry Potter anc	\$1,341,511,219	2011	[# 18][# 19]
11	11	*Star Wars: The	\$1,332,539,889	2017	[# 20][# 21]
12	12	*Jurassic World:	\$1,309,484,461	2018	[# 22][# 23]
13	13	*Frozen*	\$1,290,000,000	2013	[# 23][# 24]
14	14	*Beauty and the	\$1,263,521,126	2017	[# 25][# 26]
15	15	*Incredibles 2*	\$1,242,786,014	2018	[# 27][# 28]
16	16	*The Fate of the	\$851,238,764,76	2017	[# 28][# 29]
17	17	*Iron Man 3*	\$1,214,811,252	2013	[# 29][# 30]
18	18	*Minions*	\$1,159,398,397	2015	[# 31][# 32]
19	19	*Captain Americ	\$1,153,304,495	2011	[# 32][# 33]
20	20	*Transformers: C	\$1,123,794,079	2003	[# 34][# 35]
21	21	*The Lord of the	\$1,120,237,002	2003	[# 35][# 36]
22	22	*Skyfall*	\$1,108,561,013	2012	[# 37][# 38]
23	23	*Transformers: A	\$1,104,054,072	2014	[# 39][# 40]
24	24	*The Dark Knight	\$1,084,939,099	2012	[# 41][# 42]
25	25	*Aquaman*	\$1,074,516,462	2018	[# 43]
26	26	*Toy Story 3*	\$1,066,969,703	2010	[# 44][# 45]
27	27	*Pirates of the C	\$1,066,179,725	2006	[# 46][# 47]
28	28	*Rogue One: A S	\$1,056,057,273	2016	[# 48][# 49]
29	29	*Pirates of the C	\$1,045,713,802	2011	[# 50][# 51]

STEP 2 OF 3

Select all of the data by left-clicking in the top left rectangle in your sheet.

Once all cells are highlighted, click **Edit > Copy**.

Select **Edit > Paste special > Paste values only**. We're now able to edit the table.



STEP 3 OF 3

To make editing easier, we'll freeze the row with the names of the columns.

Hover the mouse cursor to the line just above row 1 over the gray bar. You will notice the cursor turns into a glove. Drag the bar to the bottom of row 1 and leave it there.

Now the top row is frozen.

The screenshot shows a Google Sheet titled "Highest Grossing Movies" with a menu bar (File, Edit, View, Insert, Format, Data, Tools, Add-ons, Help) and a toolbar. The sheet contains a table with columns labeled Rank, Peak, Title, Worldwide gross, Year, and Reference(s). The first row is highlighted in blue, indicating it is frozen. The data in the table is as follows:

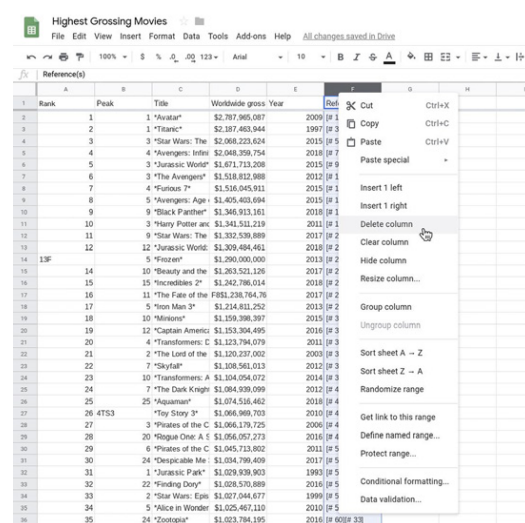
Rank	Peak	Title	Worldwide gross	Year	Reference(s)
1	1	"Avatar"	\$2,787,965,087	2009 (# 1)(# 2)	
2	2	"Titanic"	\$2,187,463,944	1997 (# 3)(# 4)	
3	3	"Star Wars: The Force Awakens"	\$2,069,223,624	2015 (# 1)(# 6)	
4	4	"Avengers: Infinity War"	\$2,048,359,754	2018 (# 7)(# 8)	
5	5	"Jurassic World"	\$1,671,713,208	2015 (# 9)(# 10)	
6	6	"The Avengers"	\$1,518,812,989	2012 (# 11)(# 12)	
7	7	"Jurassic 2"	\$1,510,045,911	2015 (# 13)(# 14)	
8	8	"Avengers: Age of Ultron"	\$1,405,403,694	2015 (# 15)(# 16)	
9	9	"Black Panther"	\$1,346,913,161	2018 (# 16)(# 17)	
10	10	"Harry Potter and the Chamber of Secrets"	\$1,341,511,219	2011 (# 18)(# 19)	
11	11	"Star Wars: The Empire Strikes Back"	\$1,332,538,899	2017 (# 20)(# 21)	
12	12	"Jurassic World: Fallen Kingdom"	\$1,309,454,461	2018 (# 22)(# 23)	
13	13	"Frozen"	\$1,299,000,000	2013 (# 23)(# 24)	
14	14	"Beauty and the Beast"	\$1,263,521,126	2017 (# 25)(# 26)	
15	15	"Incredibles 2"	\$1,242,786,014	2018 (# 27)(# 28)	
16	16	"The Fate of the Furious"	\$1,238,764,76	2017 (# 28)(# 29)	
17	17	"Iron Man 3"	\$1,214,811,252	2013 (# 29)(# 30)	
18	18	"Minions"	\$1,159,398,397	2015 (# 31)(# 32)	
19	19	"Captain America: Civil War"	\$1,153,304,495	2016 (# 32)(# 33)	
20	20	"Transformers: The Last Knight"	\$1,123,794,079	2017 (# 34)(# 35)	
21	21	"The Lord of the Rings: The Two Towers"	\$1,120,237,002	2003 (# 35)(# 36)	
22	22	"Skyfall"	\$1,109,561,013	2012 (# 37)(# 38)	
23	23	"Transformers: Age of Extinction"	\$1,104,054,072	2014 (# 38)(# 39)	
24	24	"The Dark Knight"	\$1,084,939,099	2012 (# 41)(# 42)	
25	25	"Aquaman"	\$1,074,516,462	2018 (# 43)	
26	26	"Toy Story 3"	\$1,066,969,703	2010 (# 44)(# 45)	
27	27	"Pirates of the Caribbean: The Curse of the Black Pearl"	\$1,066,179,725	2006 (# 45)(# 47)	
28	28	"Slopes One A"	\$1,056,057,273	2016 (# 46)(# 48)	
29	29	"Pirates of the Caribbean: On Stranger Tides"	\$1,045,713,802	2011 (# 50)(# 51)	
30	30	"Despicable Me"	\$1,034,799,409	2017 (# 52)(# 28)	
31	31	"Jurassic Park"	\$1,029,839,903	1993 (# 53)(# 54)	
32	32	"Finding Dory"	\$1,028,570,889	2016 (# 55)(# 56)	
33	33	"Star Wars: Episode I - The Phantom Menace"	\$1,027,044,677	1999 (# 57)(# 4)	
34	34	"Alice in Wonderland"	\$1,025,487,110	2010 (# 58)(# 59)	
35	35	"The Incredibles"	\$1,024,794,194	2006 (# 59)(# 60)	

Editing the data.

importHTML will import leftover characters from the Wikipedia table that are useful for humans, but not computers. Let's remove them and make our table cleaner!

STEP 1 OF 3

Since we don't need column F for this exercise, right-click on the letter F at the top of the column and select **Delete**.



STEP 2 OF 3

There is a letter "F" next to number 13 in row A14, and a "TS3" next to number 4 in cell B27. We will remove these characters so that only the numbers 13 and 4 remain.

5	4	4	*Avengers: Infi	\$2,048,359,754	201
6	5	3	*Jurassic World*	\$1,671,713,208	201
7	6	3	*The Avengers*	\$1,518,812,988	201
8	7	4	*Furious 7*	\$1,516,045,911	201
9	8	5	*Avengers: Age	\$1,405,403,694	201
10	9	9	*Black Panther*	\$1,346,913,161	201
11	10	3	*Harry Potter anc	\$1,341,511,219	201
12	11	9	*Star Wars: The	\$1,332,539,889	201
13	12	12	*Jurassic World:	\$1,309,484,461	201
14	13F	5	*Frozen*	\$1,290,000,000	201
15	14	10	*Beauty and the	\$1,263,521,126	201
16	15	15	*Incredibles 2*	\$1,242,786,014	201
17	16	11	*The Fate of the	F\$1,238,764,76	201
18	17	5	*Iron Man 3*	\$1,214,811,252	201
19	18	10	*Minions*	\$1,159,398,397	201
20	19	12	*Captain America	\$1,153,304,495	201
21	20	4	*Transformers: C	\$1,123,794,079	201
22	21	2	*The Lord of the	\$1,120,237,002	200
23	22	7	*Skyfall*	\$1,108,561,013	201
24	23	10	*Transformers: A	\$1,104,054,072	201
25	24	7	*The Dark Knight	\$1,084,939,099	201
26	25	25	*Aquaman*	\$1,074,516,462	201
27	26	4	*Toy Story 3*	\$1,066,969,703	201
28	27	3	*Pirates of the C	\$1,066,179,725	200
29	28	20	*Rogue One: A S	\$1,056,057,273	201

STEP 3 OF 3

Remove the extra letters in cells B40 and B48, so that only 19 and 8 remain. Do the same in D17 to remove the leading "F8".

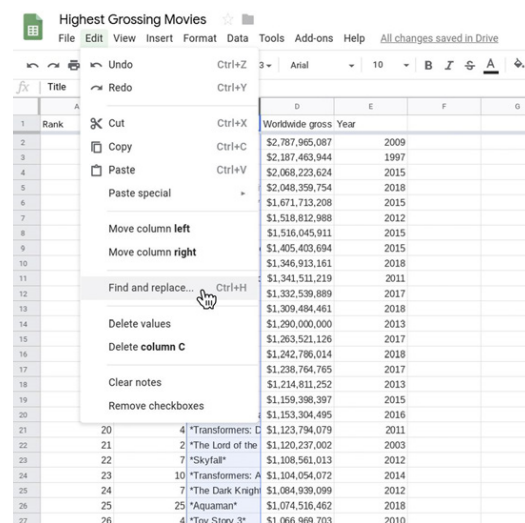
B	C	D	
19DM2	*Despicable Me :	\$970,761,885	
2	*The Lion King*	\$968,483,777	
30	*The Jungle Boo	\$966,550,600	
5	*Pirates of the Ca	\$963,420,425	
40	*Jumanji: Welcor	\$962,126,927	
10	*Harry Potter and	\$960,431,568	
24	*The Hobbit: The	\$958,366,855	
26	*The Hobbit: The	\$956,019,788	
8FN	*Finding Nemo*	\$940,335,536	
6	*Harry Potter and	\$940,018,451	
8	*Harry Potter and	\$934,546,568	

Batch editing with Find and replace.

Now, take a look at column C. Let's remove the leading and trailing * characters in a batch, rather than row by row, using the **Find and replace** feature.

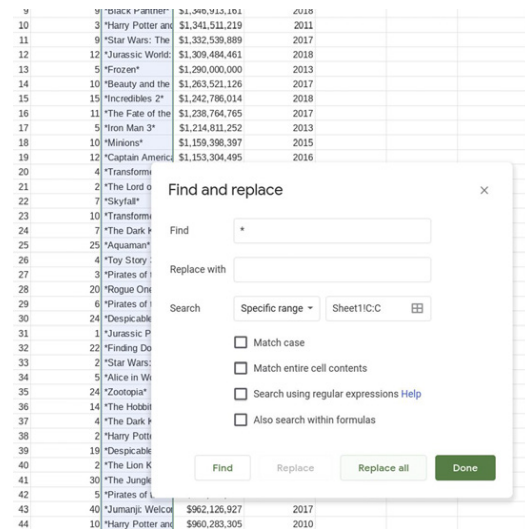
STEP 1 OF 5

Select column C by left-clicking on the letter C at the top of the column. Select **Edit > Find and replace**.



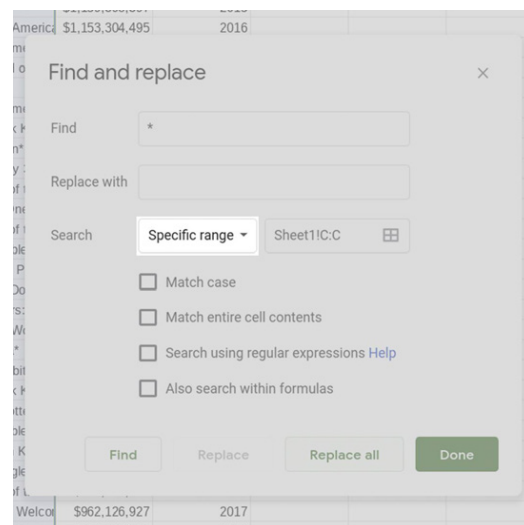
STEP 2 OF 5

In the first text box type the asterisk symbol: * (that's the character we want to find in column C). Leave the **Replace with** text box empty so that the asterisks get replaced with nothing, which means they will be deleted.



STEP 3 OF 5

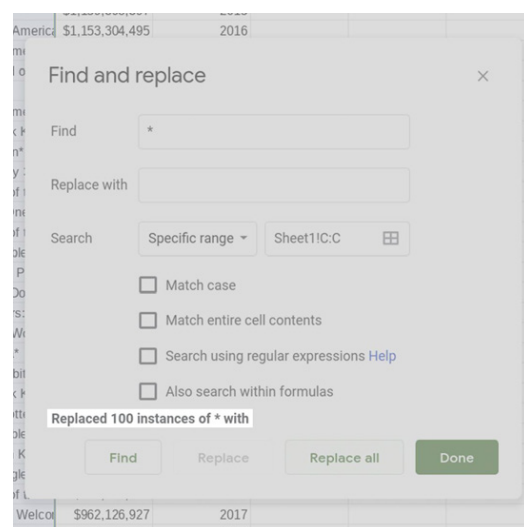
Make sure the **Search** option says **Specific range** and the range reflects the column you just selected. Leave the checkboxes unchecked.



STEP 4 OF 5

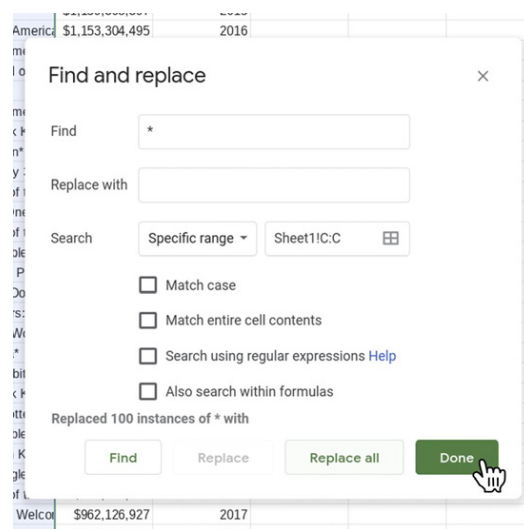
Select **Replace all**.

Notice Google Sheets will tell you it **Replaced 100 instances of * with** (nothing). That means you successfully removed 100 characters in 50 rows with just a few clicks!



STEP 5 OF 5

Select **Done**. Our table is now clean and ready for us to work with. In the next lesson, we will produce visualizations and get insights from the data.



Congratulations!

You completed “Google Sheets: Cleaning data.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:



Rank	Movie Title	Worldwide Gross	Year
19	10 Minions	\$1,129,396,391	2015
20	19 Captain America	\$1,153,304,495	2016
21	20 Transformers: Di	\$1,123,794,079	2011
22	21 The Lord of the F	\$1,120,237,002	2003
23	22 Skyfall	\$1,108,561,013	2012
24	23 Transformers: A	\$1,104,094,072	2014
27	Avatar		
28	Avengers: Infinity...		
29	Furious 7		
30	Harry Potter and...		
31	Frozen		
32	The Fate of the F...		
33	Captain America...		
34	Skyfall		
35	Aquaman		
36	Rogue One: A St...		
37	Jurassic Park		
38	Alice in Wonderf...		
39	The Dark Knight		
40	The Lion King		
41	Jumanji: Welcom...		
42	The Hobbit: The...		
43	Harry Potter and...		
44	8 Pirates of the Ca	\$963,420,428	2007
45	43 Jumanji: Welcom	\$962,126,927	2017
46	44 10 Harry Potter and	\$960,283,305	2010
47	45 24 The Hobbit: The	\$958,366,855	2013
48	46 26 The Hobbit: The	\$956,018,788	2014

**Google Sheets:
Visualizing data**

Learn to build visualizations that help you interpret the data and tell data-driven stories.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 17 : Part 03 of 04 in the Visualizing Data module

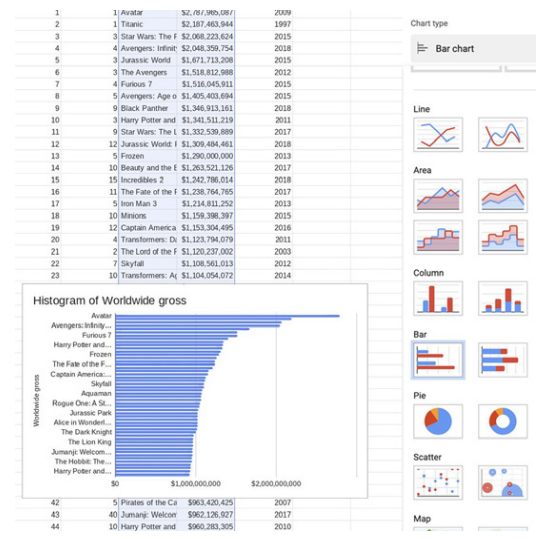
Google Sheets: Visualizing data

Learn to build visualizations that help you interpret the data and tell data-driven stories.

Lesson overview

Learn to build a data visualization in Google Sheets.

In the previous lesson, [Google Sheets: Cleaning data](#), we learned how to clean the table we imported from Wikipedia using importHTML. Now, we will use Google Sheets to produce visualizations that show readers what the data means.



- 1 Creating a horizontal bar chart.
- 2 Adding a title to your chart.
- 3 Resizing a chart.
- 4 Creating highlights.
- 5 Improving legibility.
- 6 Publishing your interactive data visualization.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

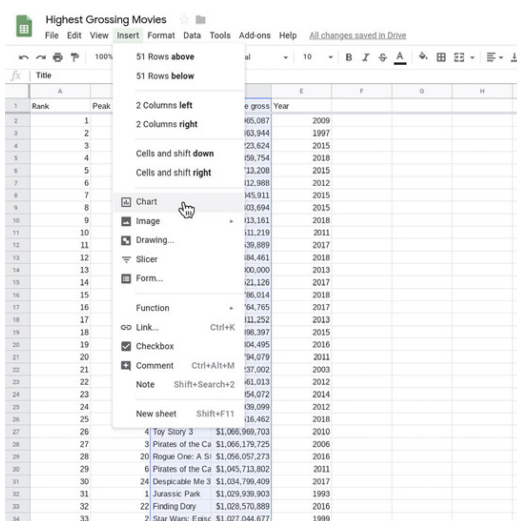
Creating a horizontal bar chart.

Bar charts are very useful for numerical comparisons. Our first visualization will be a bar chart showing which movies made more money and how far the highest grossing movies are from the lowest ones.

STEP 1 OF 2

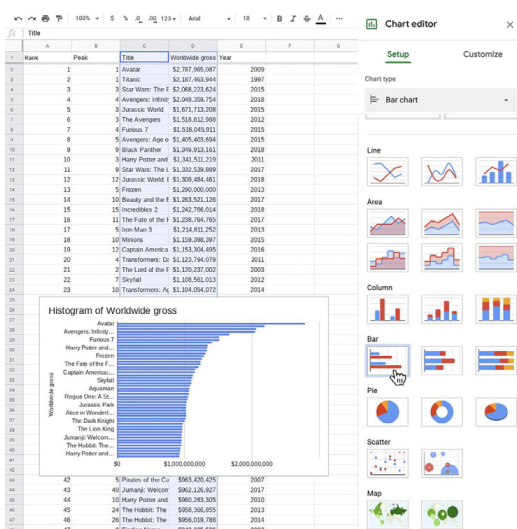
Select **C1**, hold **shift** and select **D51**, highlighting the two columns we will use for the chart.

Click **Insert > Chart**.



STEP 2 OF 2

In the **Chart editor**, select **Chart type > Bar chart**.

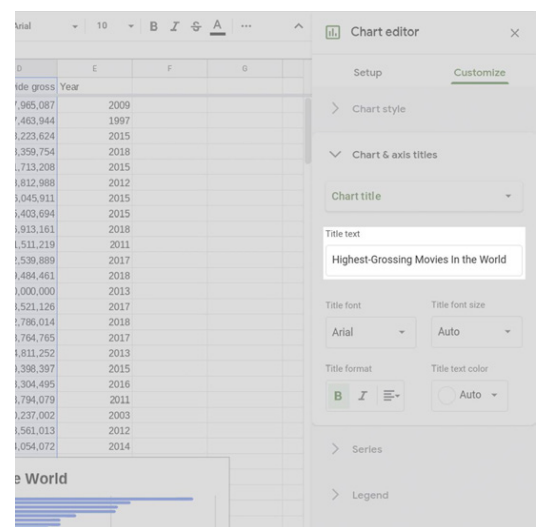


Adding a title to your chart.

Now that you've made a basic chart, let's enhance it and make it more readable.

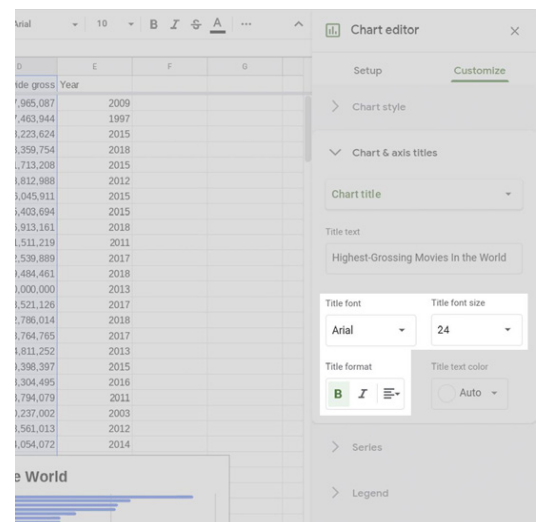
STEP 1 OF 2

First, let's change the title. In the **Chart editor**, select **Customize > Chart & axis titles**. Change the title to "Highest-grossing Movies in the World."



STEP 2 OF 2

Set **Title font** to Arial and **Font size** to 24. Make it bold.

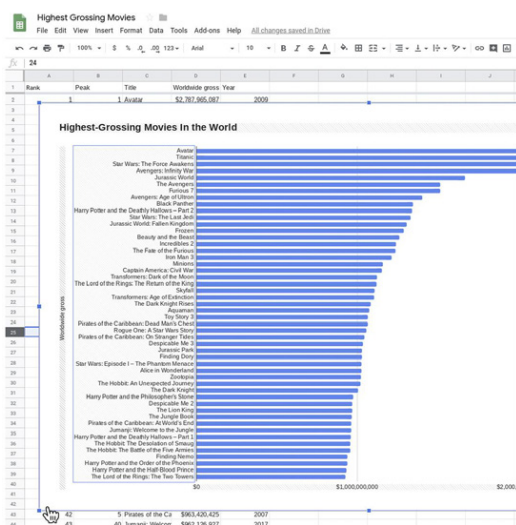


Resizing a chart.

To make the chart legible, we need to resize it.

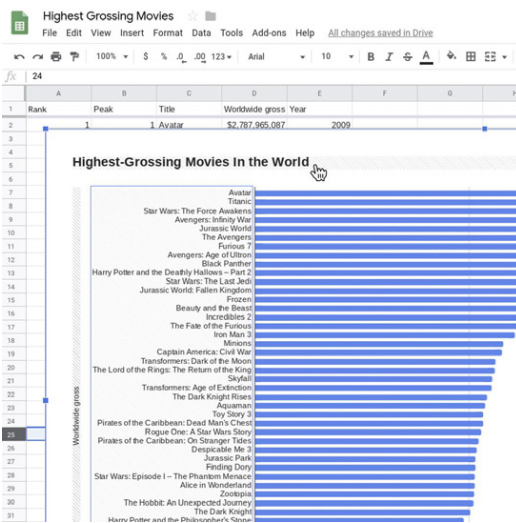
STEP 1 OF 3

Click on the chart. Drag the bounding boxes, especially horizontally.



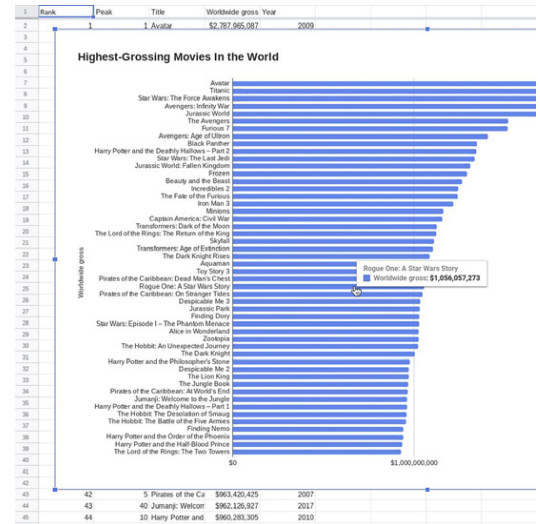
STEP 2 OF 3

Click anywhere on top of the movie titles and hover the mouse around the vertical edges until bounding boxes fade in. Drag the box until there's enough space for the longest title to be read in full.



STEP 3 OF 3

Notice that there are 50 bars in the chart, but not 50 film titles. That's because Google Sheets automatically distributes the names in the list, omitting some of them, to improve legibility. Hover the cursor on top of any bar and a tooltip box will appear showing the name and value of that bar.

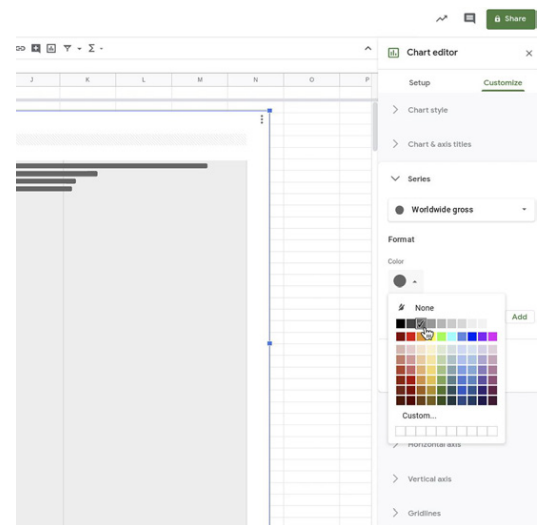


Creating highlights.

Let's make highlights in the chart to draw attention to specific elements for our users.

STEP 1 OF 3

Change the color of all the bars to gray. In the **Chart editor**, select **Customize > Series** and select a dark gray shade for Worldwide Gross.

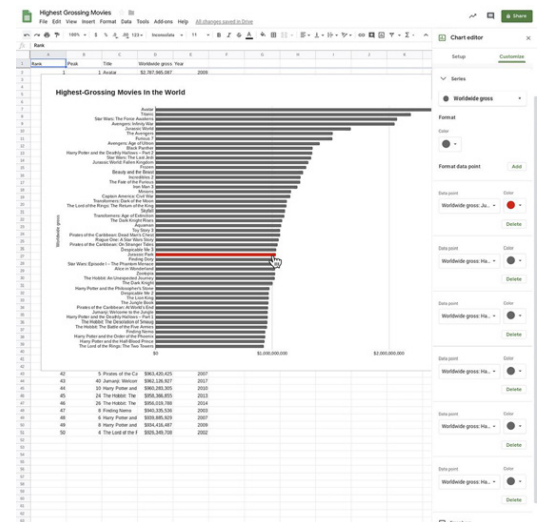


STEP 2 OF 3

Let's highlight the movie Jurassic Park, the oldest movie in the list (1993).

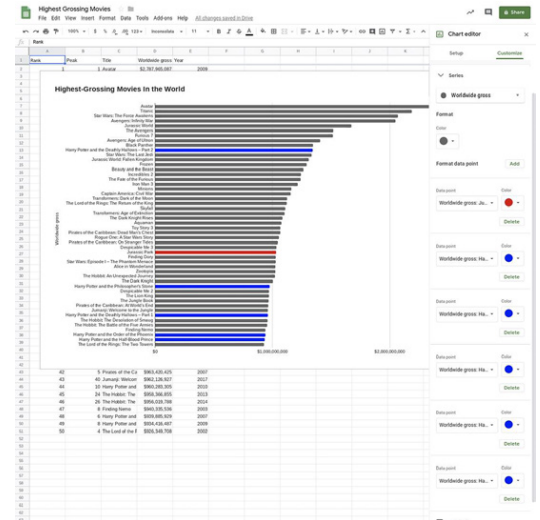
Go to **Format data point** and click **Add**.

Select **Worldwide gross: Jurassic Park** and click **OK**. Choose the color red.



STEP 3 OF 3

Let's do the same thing to highlight all five Harry Potter movies in blue.



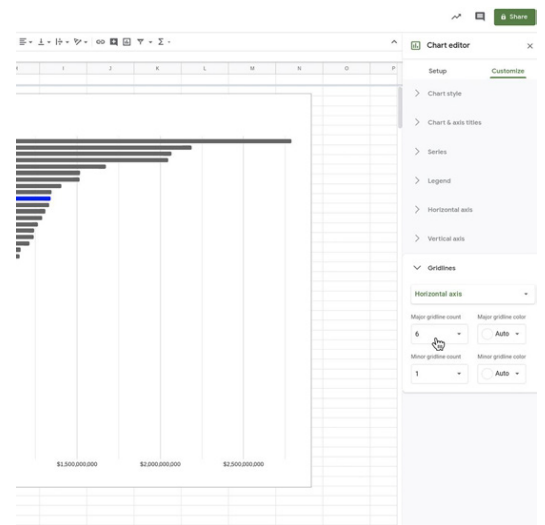
Improving legibility.

We can further improve the design of our chart by adding gridlines.

STEP 1 OF 2

In the **Chart editor**, select **Customize > Gridlines**.

In the **Horizontal axis**, increase the **Major gridline count** to 6 and **Minor gridline count** to 1.

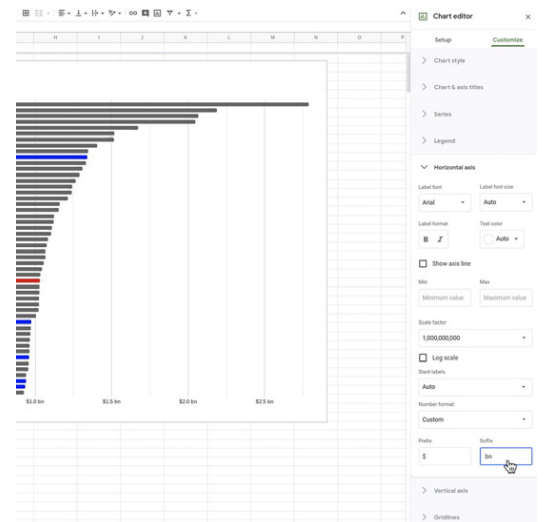


STEP 2 OF 2

Go back to **Customize > Horizontal axis**.

In **Scale factor**, select **1,000,000,000**.

In **Number format**, select **Custom**. For **Prefix**, type **\$**. For **Suffix**, type **bn** without quotes, and including the leading space.



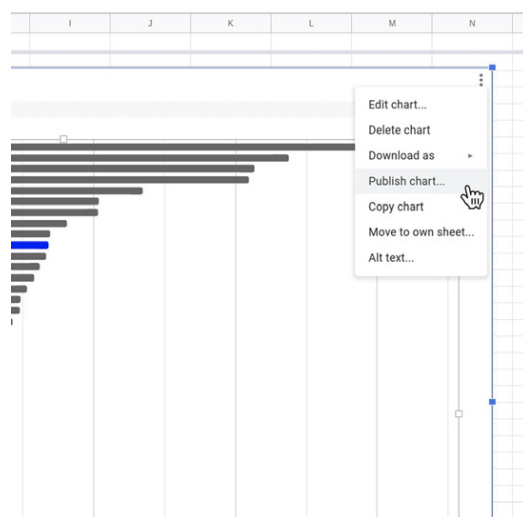
Publishing your interactive data visualization.

When you are satisfied with the accuracy, legibility and design of your chart, it's time to publish it.

STEP 1 OF 2

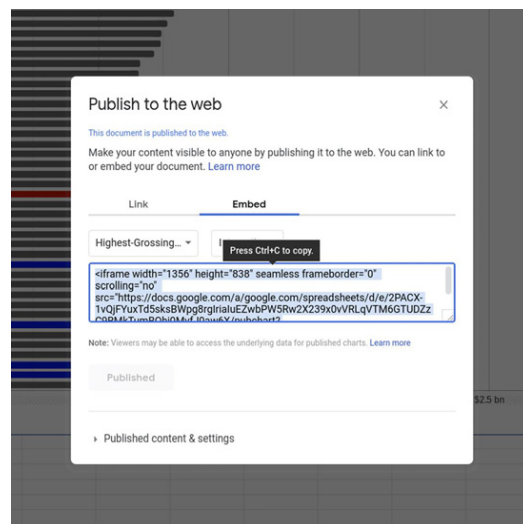
Hover your mouse in the top left corner of the chart and click on the three-dotted icon.

Select **Publish chart** > **Publish**.



STEP 2 OF 2

You should now have an embed code that you can use on your publication. Any changes will be automatically republished when made.



Congratulations!

You completed “Google Sheets: Visualizing data.”

To continue building your digital journalism skills and work toward Google News Initiative certification, go to our [Training Center](#) website and take another lesson:

Line



Area



Data Studio: Make interactive data visualizations

Give life to your datasets by creating powerful interactive visualizations with an easy-to-use studio.

For more Data Journalism lessons, visit:

newsinitiative.withgoogle.com/training/course/data-journalism

LESSON 18 : Part 04 of 04 in the Visualizing Data module

Data Studio: Make interactive data visualizations

Give life to your datasets by creating powerful
interactive visualizations with an easy-to-use studio.

Lesson overview

Learn to build visualizations that tell your story.

Data Studio is a powerful tool to build interactive visualizations that update in real time with data from a variety of sources. In journalism, Data Studio enables you to tell stories with data and gives you freedom in how to present them. These visualizations let users interact with stories from different perspectives.

Geo map



Line



Area



Scatter



- 1 Connecting Google Sheets with Data Studio.
- 2 Editing your data.
- 3 Creating a line chart.
- 4 Adding a table chart.
- 5 Making design changes in your visualization.
- 6 Embedding your interactive visualization.

For more Data Journalism lessons, visit:

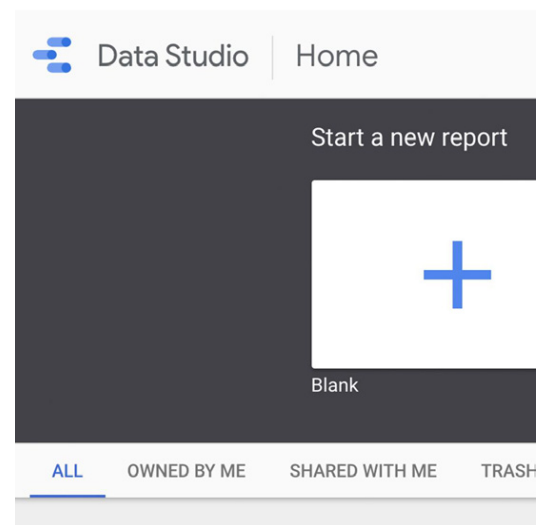
newsinitiative.withgoogle.com/training/course/data-journalism

Connecting Google Sheets with Data Studio.

Before you begin, make sure you've completed our Training Center lessons, [Google Sheets: Scraping data from the internet](#) and [Google Sheets: Cleaning data](#), and that you're logged in with the same account. We'll be using the data sheet we created from the [Wikipedia article](#) in those lessons for this visualization.






STEP 1 OF 5

Go to datastudio.google.com and begin a new report by clicking the blank square with the **+** icon.



STEP 2 OF 5

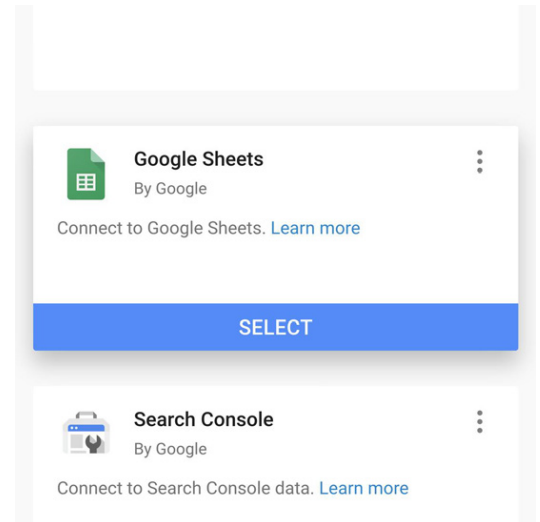
In Data Studio, visualizations are called "reports." To connect our Google Sheet to this report, select **Create a New Data Source** from the bottom right.

-  [Sample] Search Console Data (Si
-  [Sample] Search Console Data (UI
-  [Sample] Google Analytics Events
-  [Sample] Google Ads
-  [Sample] Crashlytics Sample Data

 [CREATE NEW DATA SOURCE](#)

STEP 3 OF 5

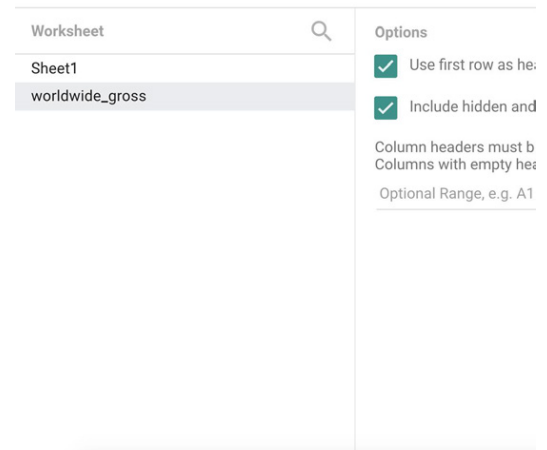
A menu will slide up showing the services we can pull our data from. Scroll to **Google Sheets** and click **SELECT**.



STEP 4 OF 5

In the search box, you'll see all the Google Sheet files associated with your Google Drive account. (If this is your first time using Google Data Studio, you may need to grant permission to access your Drive account.)

Select the spreadsheet and its associated worksheet where the data is stored.



STEP 5 OF 5

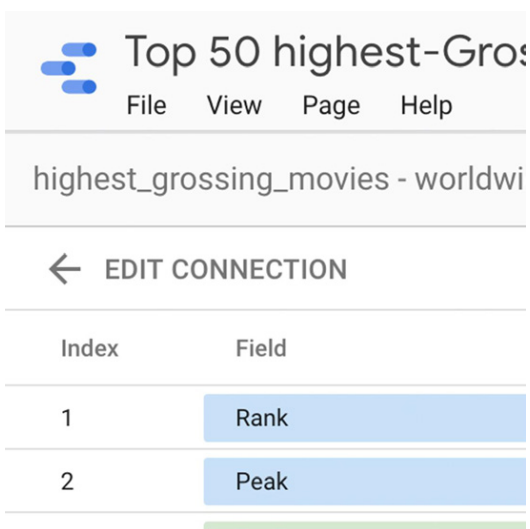
Leave all the **Options** boxes checked and click **Connect**.



Editing your data.

STEP 1 OF 4

Let's rename the visualization. Click on the top left corner where it says **Untitled report**. Let's call it "Top 50 Highest Grossing Movies in the World."



The screenshot shows the top left corner of a report editor. At the top, there is a blue icon and the text "Top 50 highest-Gros". Below this is a menu with "File", "View", "Page", and "Help". The main title of the report is "highest_grossing_movies - worldwi". Below the title is a button with a left arrow and the text "EDIT CONNECTION". Below this is a table with two columns: "Index" and "Field".

Index	Field
1	Rank
2	Peak

STEP 2 OF 4

Under **Type**, change the data in row 5 from Number to Date & Time > Year (YYYY). If it's already set as Year (YYYY), leave it.

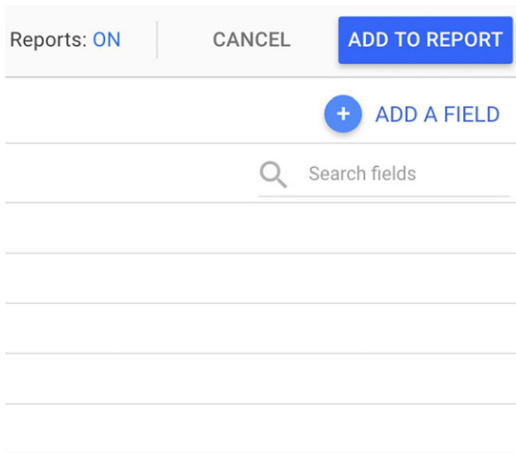


The screenshot shows a table with a column labeled "Type". The table has five rows, each with a colored square, a vertical ellipsis, and a text label.

Type
123 Number
123 Number
ABC Text
123 Number
📅 Year (YYYY)

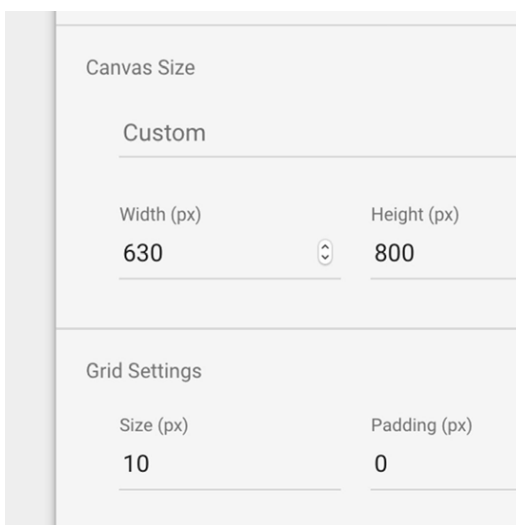
STEP 3 OF 4

Select **Add to Report**, the blue button on the top right. Click again on the same option that will pop up.



STEP 4 OF 4

Let's make the visualization 630 pixels in width and 800 pixels in height. Click anywhere and type the numbers in the **Canvas Size** section.

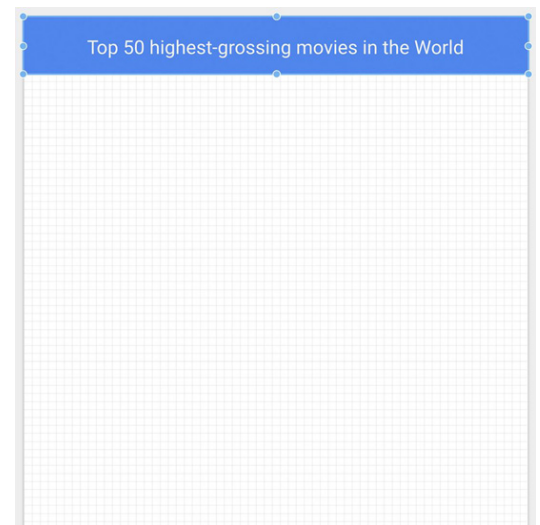


Creating a line chart.

We're going to add an interactive line chart showing the worldwide gross for a given year. When you click on any year along the line, a table will appear, listing the top films, from highest to lowest grossing.

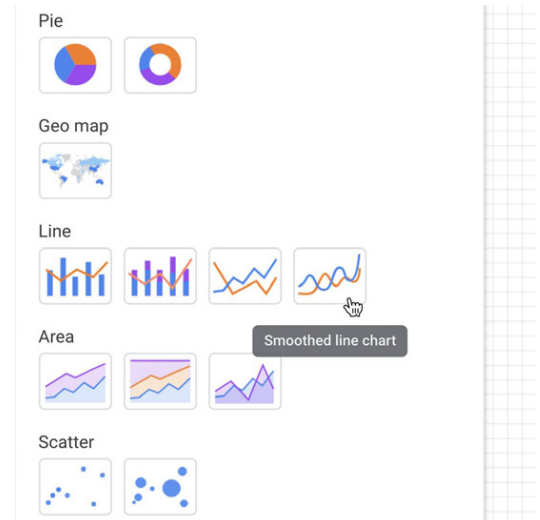
STEP 1 OF 6

First, select the rectangle tool and drag the mouse cursor across the top of the canvas. Use the **text tool** to add a title. Use the right pane to format the text.



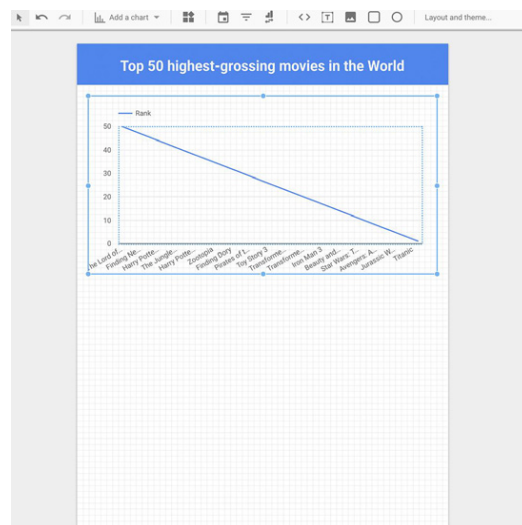
STEP 2 OF 6

Go to **Add a Chart** and click **Smoothed line chart**.



STEP 3 OF 6

Resize it to fit nicely below the title, but leave space for the next chart.



STEP 4 OF 6

To change the dimension, metric and sort for the line chart, double click it.

For **Dimension**, drag and drop **Year** to replace **Title**. Next, replace **Metric** with **Worldwide gross**.

BLEND DATA

Date Range Dimension

+ Add dimension

Dimension

Year

Breakdown Dimension

+ Add dimension

Metric

SUM Worldwide gross

+ Add metric

ABC Title

Year

123 Peak

123 Rank

123 Worldwide gross

STEP 5 OF 6

Under **Sort**, click **Worldwide gross**, then click **Year**.

Change the sort option to **Ascending**.

Metric

SUM Worldwide gross

+ Add metric

Sort

Year

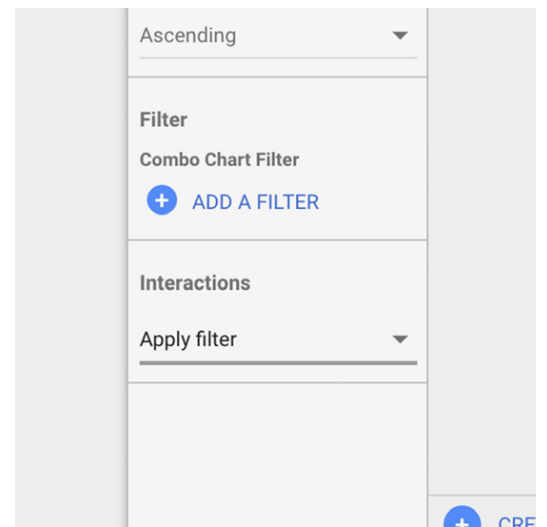
Ascending

Filter

Combo Chart Filter

STEP 6 OF 6

At the bottom you will see a section called **Interactions**. Select **Apply filter**. This will make every click on the line chart an action to filter the table.



Adding a table chart.

STEP 1 OF 5

Choose **Add a chart > Table chart**. Resize it to show the first 10 rows in the list.



STEP 2 OF 5

Let's set up this table with three metrics in this order: Year, Rank and Worldwide gross. Go to **Metrics** and add these fields, either by dragging from **Available Fields** or clicking **Add metric**.

Add dimension

Metric

- SUM Year
- SUM Rank
- SUM Worldwide gross

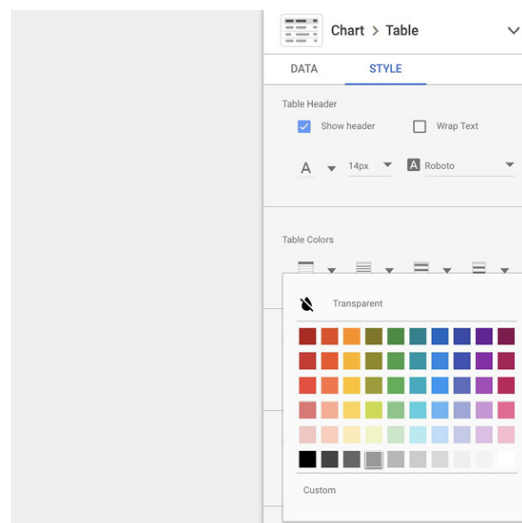
Add metric

Rows per Page

100

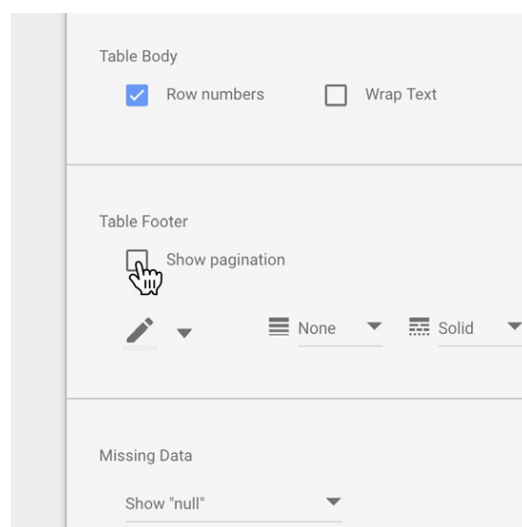
STEP 3 OF 5

Next, go to **Style > Table Colors** to change the color of the header to dark gray.



STEP 4 OF 5

Go to **Table Footer** and uncheck **Show pagination**.



STEP 5 OF 5

Now, you can add text citing your data source and offering instructions for using the chart. Select **Text** and add it to the bottom of the table.

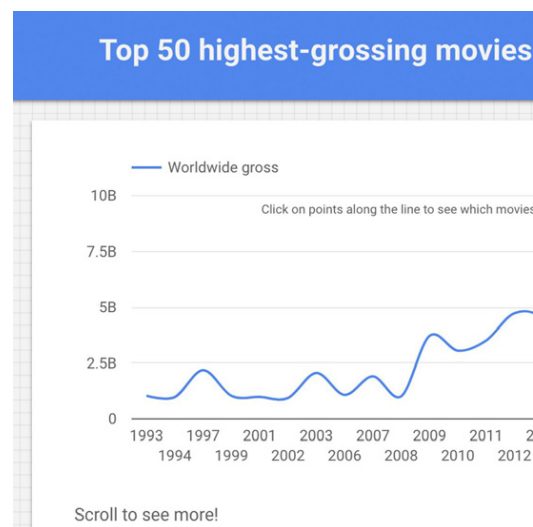


Making design changes in your visualization.

Let's explore some different types of design elements and text you can use to customize your visualization.

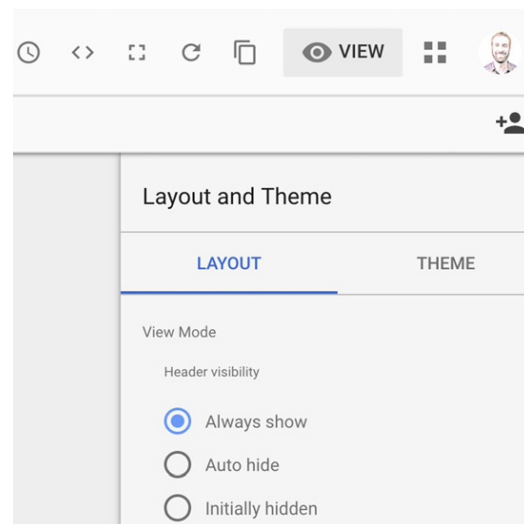
STEP 1 OF 4

To add directional text, such as "Scroll to see more!", click **Text** and type your message.



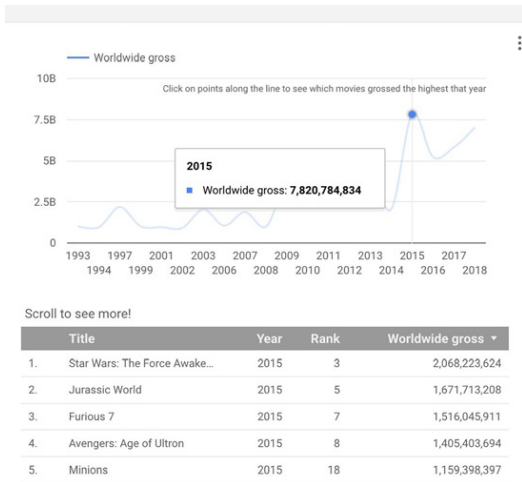
STEP 2 OF 4

At any time, you can preview your visualization by clicking **View**. To toggle back and forth between **View** mode and **Edit** mode, simply click again.



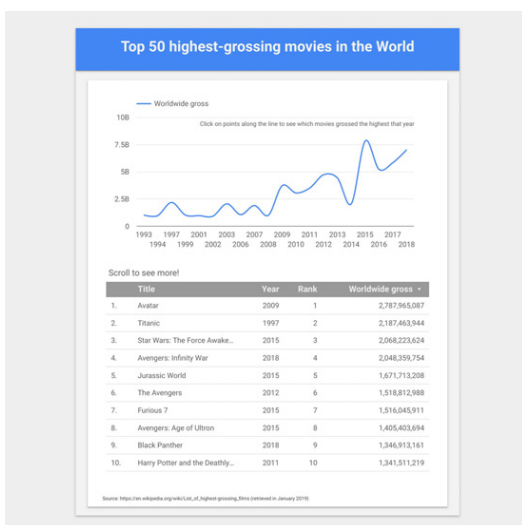
STEP 3 OF 4

When you're in **View** mode, you can click on any point in the line and the table below will automatically display the top 50 movies from that year.



STEP 4 OF 4

View mode also lets you see the complete visualization you've created, including the title, line chart and table chart.

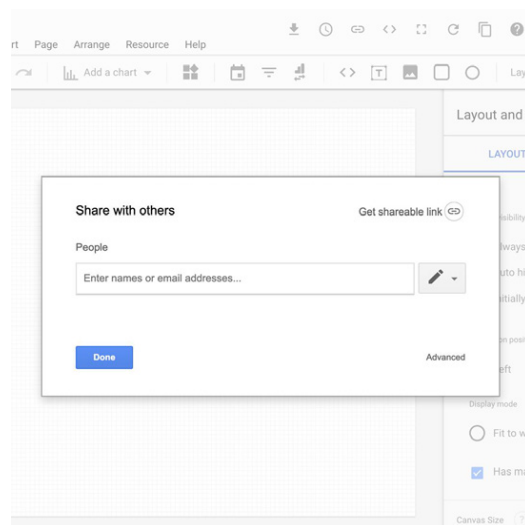


Embedding your interactive visualization.

You can share your visualization via email or by embedding it on your website.

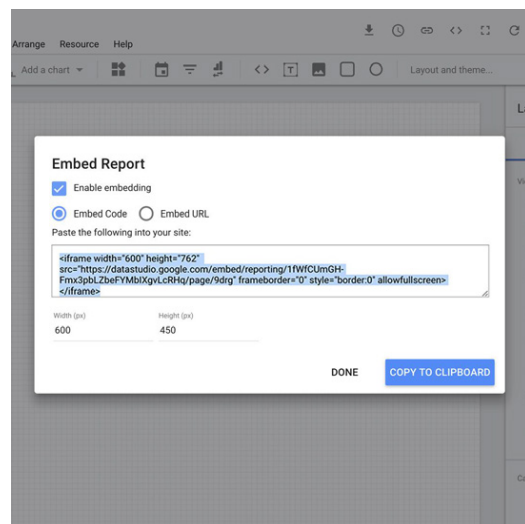
STEP 1 OF 2

Share this visualization the same way you'd [share any other GSuite document](#).



STEP 2 OF 2

To embed this interactive visualization on your website, click **File > Embed report**. Check the **Enable embedding** box and use the code on your page.



Congratulations!

You completed “Data Studio: Make interactive data visualizations.”

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