### Becoming a Super Internet Searcher: Advanced



Daniel M. Russell Google Search Quality & User Experience Research

DRussell+PL@google.com

This presentation:

bit.ly/DMR-PL-ADV

### What you'll learn in this class

- How to formulate sophisticated queries
- Double quotes when and why to use them
- Find-Text skill
- Advanced operators (filetype, site, intitle, inurl, minus)
- Google Properties—what they are, why you should know them

## Let's get started: Sample problem

 What day of the week is the US Secretary of Defense's birthday this year (2020)?

```
(That is, is it Sunday, Monday, Tuesday, ....)
```

## Sample answer

• This is a three-step problem:

```
1. [ secretary of defense ] • Mark Esper
```

- 2. [ Mark Esper birthday ] April 26
- 3. [ calendar 2020 ] lookup the April calendar; read off the day

## Search changes everything

 Your experience of this talk is radically changed from what it was just a few years ago.

Now if I say something like...

When Venus the goddess of beauty and love

## **Nottingham Ale**



#### Newman's Ale

Nottingham Ale, also known as Newcastle Ale, was published by William Chappell in his Popular Music of the Olden Times. The tune is attributed to Heny Purcell and is known for its use in the 1690s for the Irish political satire, Lilliburlero, as well as for country dances. We sing it here as Newman's Ale; in concert we tend to use the name of any local microbrew.

When Venus, the goddess of beauty and love
Arose from the froth that swam on the sea
Minerva sprang out of the cranium of Jove
A coy, sullen dame as most mortals agree
But Bacchus, they tell us, that prince of good fellows
Was Jupiter's son, pray attend to my tale
They who thus chatter mistake quite the matter
He sprang from a barrel of Newman's Ale:
Newman's Ale, boys, Newman's Ale
Newman's Ale, boys, Newman's Ale
No liquor on earth like Newman's Ale.

You bishops and curates, priests, deacons and vicars When once you have tasted, you'll own it is true That Nottingham Ale is the best of all liquors And none understand what is good like to you It dispels every vapor, saves pen, ink and paper For when you've a mind in your pulpit to rail Open your throats, you may preach without notes When inspired with a bumper of Newman's Ale:

Newman's Ale, boys, Newman's Ale

Inspired with a bumper of Newman's Ale Newman's Ale, boys, Newman's Ale No liquor on earth like Newman's Ale.

# Key Skill #1... use double quotes to find a phrase



"When Venus the goddess of beauty and love"

 Works because we're searching for those words IN THAT ORDER

## Search changes the discussion

### ... but only if you are facile at search

• **KEYPOINT:** Of course Google will continue to improve search... but we don't expect any mindreading modules anytime soon (what IS your intent).

Plus, there will always be information in places and styles that Google won't be able to crawl. Finally, the interpretation of that data (authority, context) will always be up to the searcher—and searchers will need to understand how to do that.

# Key Skill #2... finding a single word on the page

• In the book *Moby Dick*, what was Starbuck's home town?



# Key Skill #2... finding a single word on the page

• In the book *Moby Dick*, what was Starbuck's home town?

• [ Moby Dick full text ] — then click through to the results page



### It'll look like this...

The Project Gutenberg EBook of Moby Dick; or The Whale, by Herman Melville

This eBook is for the use of anyone anywhere at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this eBook or online at www.gutenberg.org

Title: Moby Dick; or The Whale

Author: Herman Melville

Release Date: December 25, 2008 [EBook #2701]

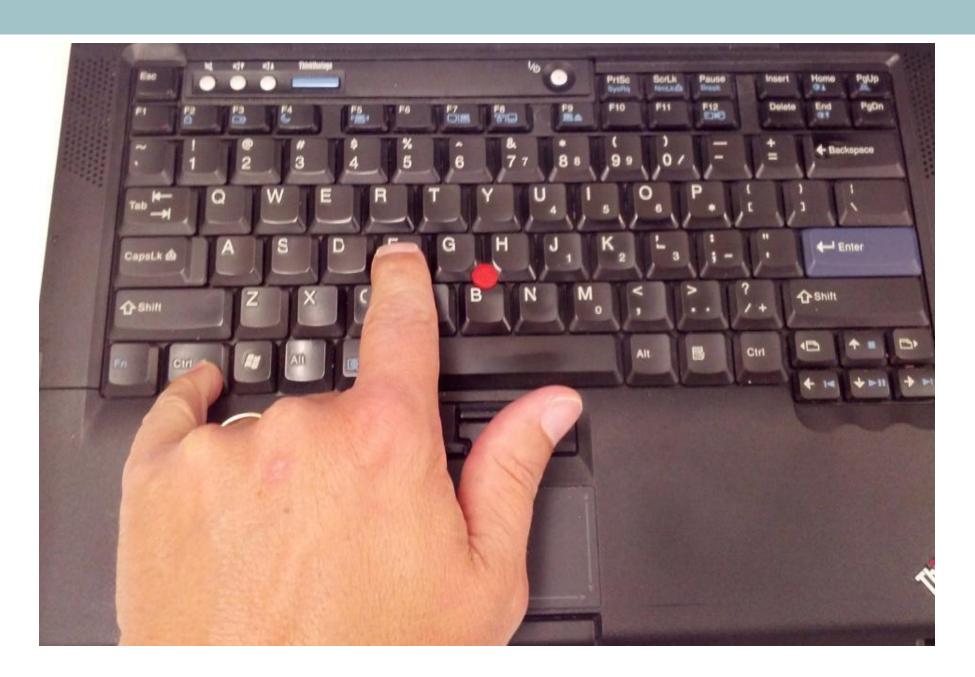
Last Updated: December 3, 2017

### That's a long text... how do you FIND in it?

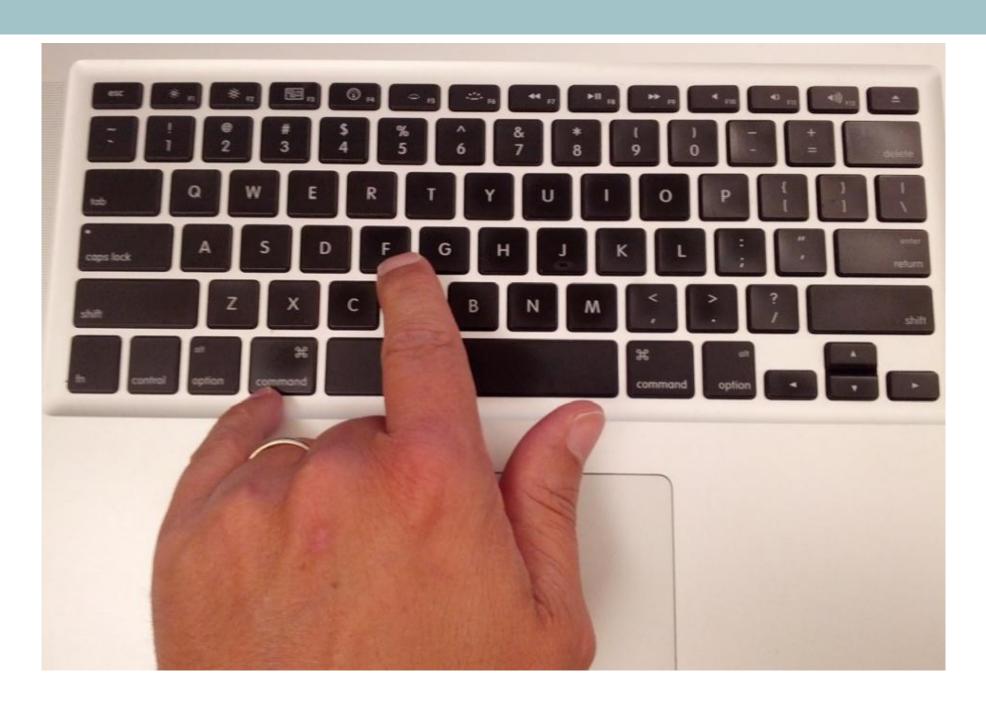
**Answer?** Use Control-F

This might be the biggest / most-valuable thing to learn.

# Search Tip: Control-F aka CMD-F aka Edit>Find



# Search Tip #2: Control-F aka CMD-F aka Edit>Find



### How to find-on-this-page

Easy reminder...



### How to find-on-this-page

Easy reminder...



## #3: Using other resources

Someone told me that in the mid-1800's, people often would carry around a special kind of notebook. They would use the notebook to write down quotations that they heard, or copy passages from books they'd read. The notebook was an important part of their education, and it had a particular name.

**Question:** What was this kind of notebook called?

### #3: Answer

 This is a really hard question. The best way to answer it is to first look for a reverse dictionary.

[ reverse dictionary ]

 Then, go to the reverse dictionary (such as <u>http://www.onelook.com/reverse-dictionary.shtml</u> )

... and type in the words

[ notebook quotations ]

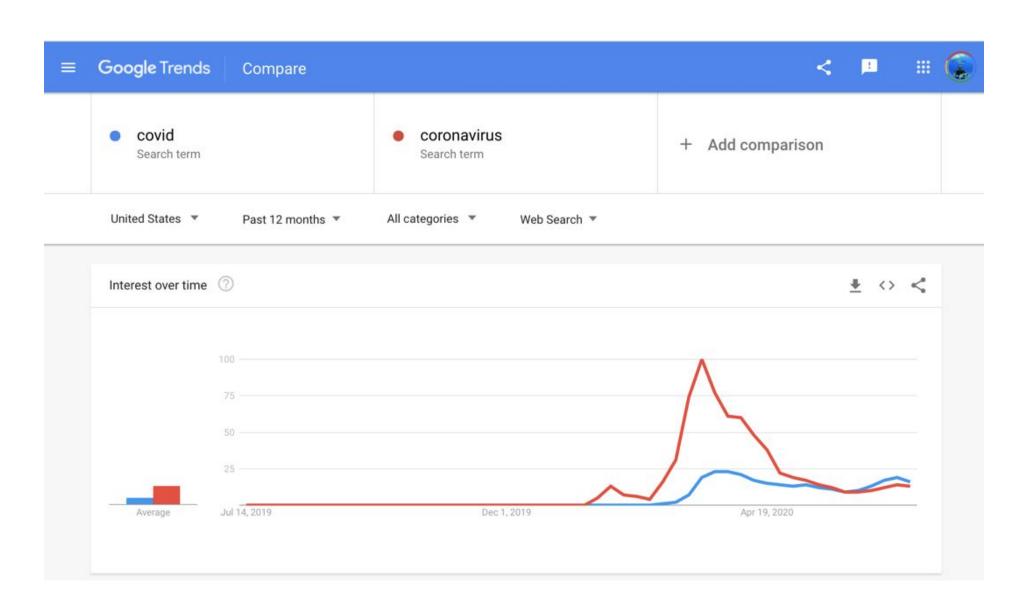
then look thru the list of words it shows you.

Answer: "commonplace book"



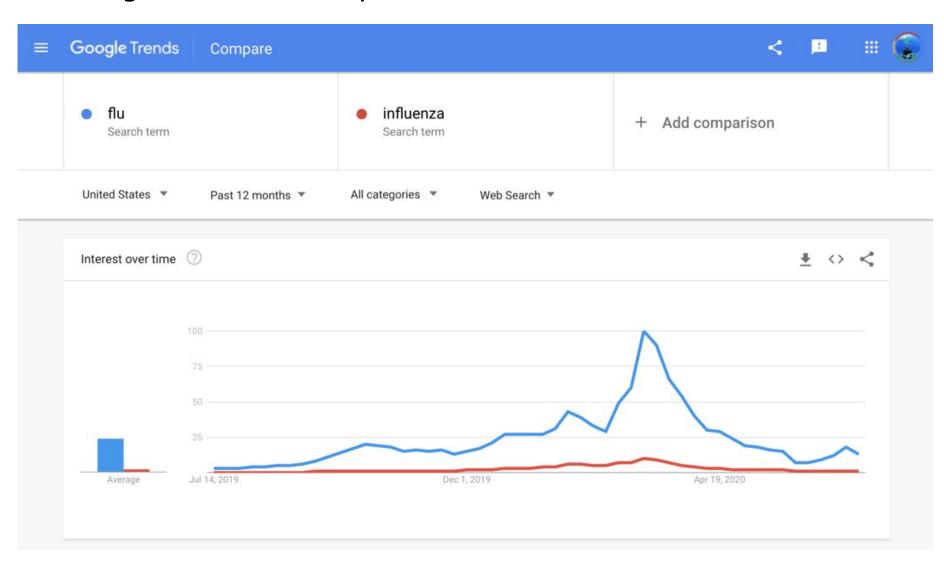
### FLASH TIP: How to know common usage...

• Use Google Trends to compare alternate search term choices



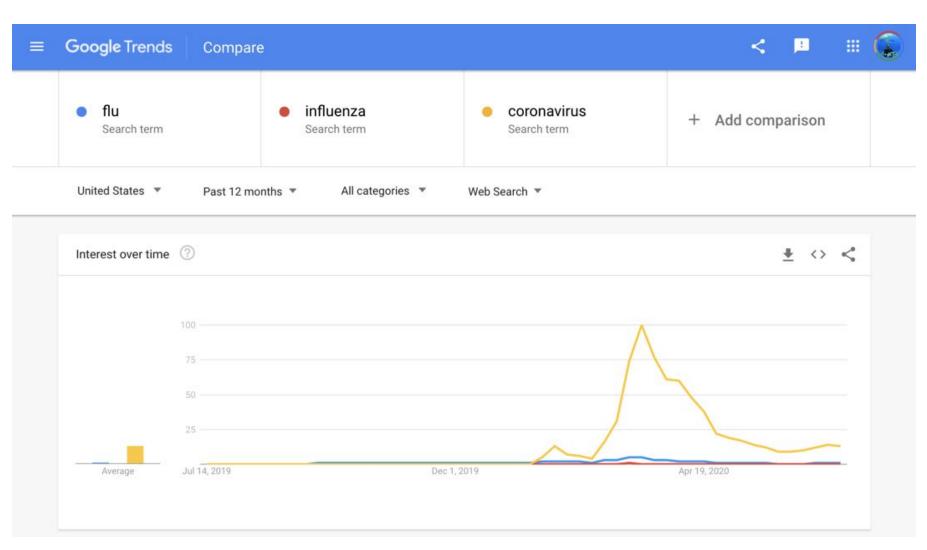
### FLASH TIP: How to know common usage...

Use Google Trends to compare alternate search term choices



### FLASH TIP: How to know common usage...

• Use Google Trends to put into perspective...



## #4: Think about synonyms

 When an artist is making a sculpture for a client, they often make a small version of the sculpture in wax or clay. They're usual a preliminary sketch, presented to the client for approval

# Question:What is this thing called?



### #4 – Answer: Learn the skill of reading snippets

- The easiest solution I found was [ small scale model sculpture ]
  - then read through the snippets to find a definition.
- To double check, you can use Google as a dictionary:

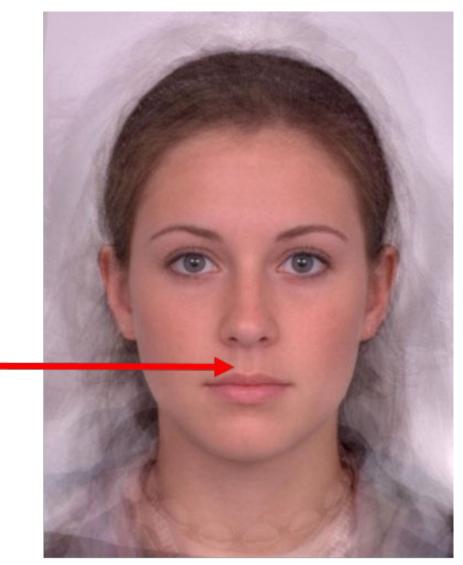
[ define maquette ]

## **#5: Naming the un-namable**

I noticed the other day that everyone has a little indentation on their

upper lip.

**Question:** What's that thing called?



### #5 – Answer

• Start with the simplest search you can think of:

### [ upper lip indentation ]

If it's not right, you can always modify it.

- When I did this, I clicked on the first result, which took me to Yahoo Answers. There's a nice article there about something called the philtrum.
- Then I double checked on that by doing a [ define philtrum ]

### #6 – Use images

• I was hiking in the woods nearby in March when I saw a pretty blue flower. It was about 3 feet high, and grew along the pathway in the middle of the woods in Henry Coe State Park.

 Question: Here's the picture... can you tell me what the common and Latin name is of this flower?



## #6 – wildflower images – answer

- Search: web for [ wildflower spring henry coe ]
  - Look for collections of pictures. Look for a matching / similar picture.

• **Answer:** Hound's tongue (*Cynoglossum grande*)

# #7 – Going deeper on a topic

- I kind of like that wildflower! What else can I find out about it?
- Where does it grow near me?
- Does it like to live in the sun or the shade?

### #7 - Answer

• I started with the Latin name because it's the MOST specific term you can use. So I did a copy & paste from the previous search:

### [ Cynoglossum grande ]

and then started looking around. I quickly found that I could see it in Coe Park, near Morgan Hill.

 When I looked up the Wikipedia entry, I found that it likes shady conditions. I then checked my work by doing a search for

### [ Cynoglossum grande shady ]

Sure enough, other places say the same thing. It checks out!

# #8 – Using Maps

• Using Google Maps is a great way to find where something is. But suppose you want to find out how far APART two things are.

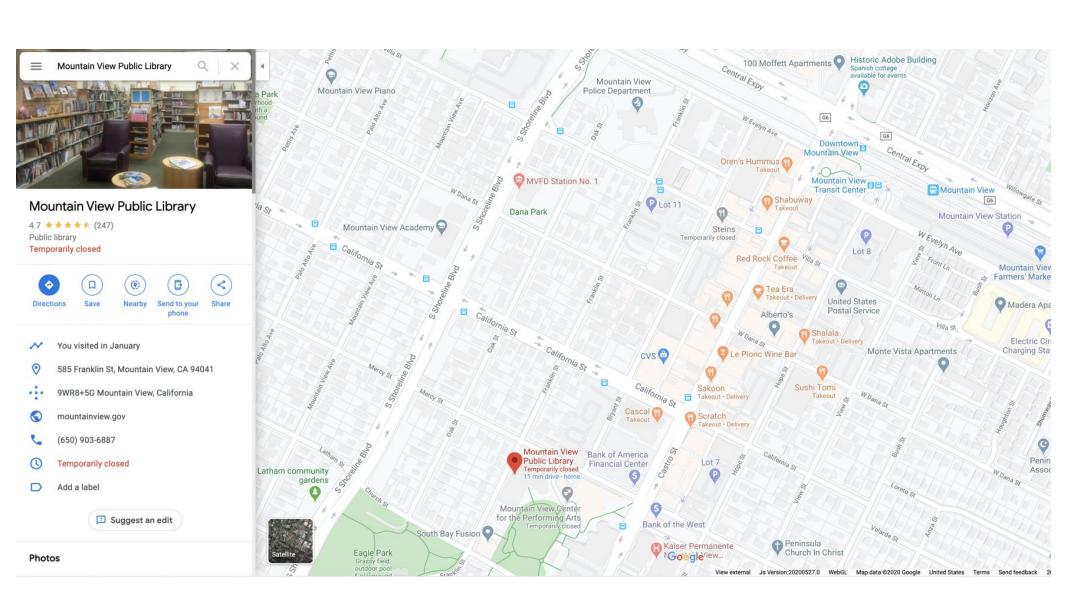
### **Question:**

- (a) Can you figure out how far the Mountain View public library is from the Castro Street train station?
- (b) Suppose you want to hike from the Yosemite Visitor's Center up to Glacier Point. How would you figure out how far a hike that is?
- (c) Can you find a tool that will let you measure arbitrary distances on the map? (Example: that will let you measure the length of a path or trail that you define... not one that's already given.)

### Answer

- Use maps with driving directions to get the rough distance from point to point.
- For Yosemite, you have to look for a map at the Yosemite Park website.
- Then... use the maps "Distance measurement tool" (under My Maps)

### Maps.Google.com



# What can you learn with Maps?

 http://medievalnews.blogspot.com/2009/03/1000-year-old-fish-trapfound-with.html



### Roman Villas

### ROMAN VILLA DISCOVERED VIA GOOGLE EARTH

While searching around his hometown in Google Earth, Luca Mori stumbled on what looked like the meanders of an ancient river. On the satellite image, it looks like "prominent, oval, shaded form more than 500 metres long.". However, his



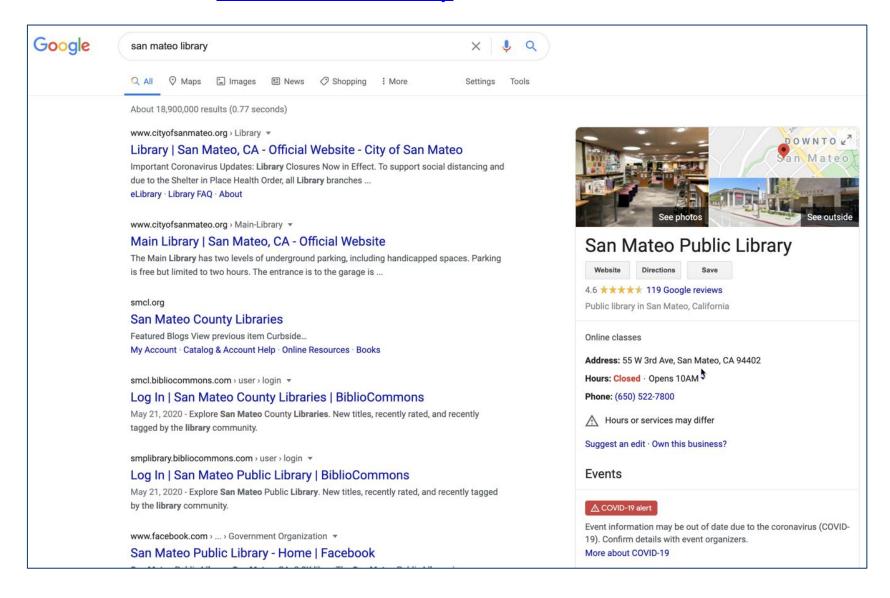
eye caught what he described as "rectangular shadows". He led further analysis only to convince himself that these shadows could be nothing else than a human construction.

So he contacted archaeologists at the National Archaeological Museum of Parma and told them about his discovery. After a visit to the site, they confirmed that it was a roman villa. Now only a thorough dig will tell how important this discovery is.

http://konguest.org/roman-villa-discovered-via-google-earth

### Search as a way to get to Maps / Streetview

Check out the <u>San Mateo Library</u>



# #9 - Keep looking! Think of synonyms!

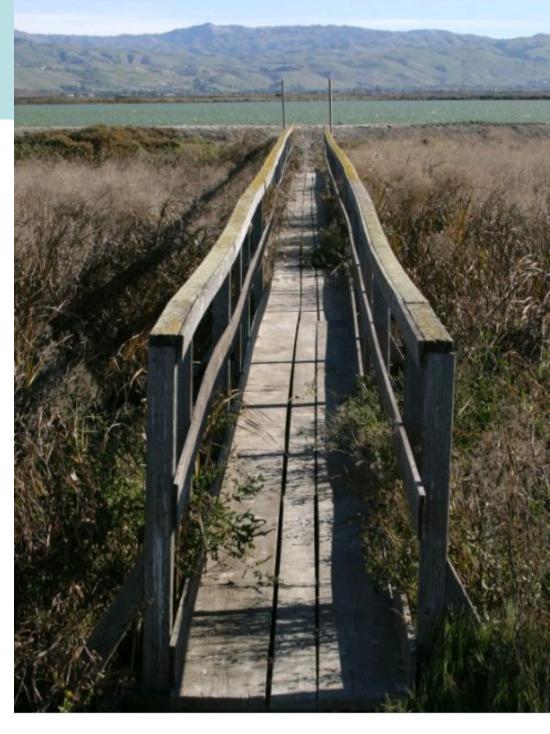
• Sometimes you need to keep trying, thinking your problem through in different ways. Usually, if you think about how someone else would describe the thing you're looking for, that will suggest search terms for you.

• **Question:** A friend told me that there is an abandoned city in the waters of San Francisco Bay. Is that true? If it IS true, what was the name of the supposed city?

### #9 - Answer

- Yes, it's true... there IS an abandoned city near what is now Fremont. It was called Drawbridge.
- The trick here is to think about other ways of describing an "abandoned city"—don't just assume that's the best way to describe it. Try this search:

[ ghost town san francisco bay ]



The former town of Drawbridge

### #10 – How to remove bogus results from your searches

 Sometimes you want to look up something that's pretty common, so there are LOTS of web pages out there. It's even worse when the word is really common. So how do you eliminate things you don't want?

• **Question:** Can you find a great recipe for salsa to make for dinner tonight? IN PARTICULAR... your nephew is allergic to tomatoes. Can you find a salsa recipe without tomatoes in it?

### #10 - salsa - answer

• The trick here is to remove all those "salsa as dancing" meanings. The quick way to do that in a web search is with the MINUS sign.

[ salsa –dancing ] -- this will remove all the dancing references

[ salsa -dancing -tomatoes ]

Note that you might have to keep adding "things to remove" -- when THAT happens, add a positive keyword to your query, like "recipe"



[ salsa recipe —tomatoes ] -- this forces the inclusion of recipes!

### #11 – Finding a particular kind of document

 Your brother is a teacher at the local high school, and needs to find a lesson plan for a unit on superconducting materials.

• Question: Can you find a lesson plan for him?

Hint: Look for a particular KIND of document...

#### #11 - answer

• Use the operator FILETYPE: to focus in just on presentations

[ superconductor high school **filetype**:ppt ]

Note that filetype: can take on ANY file extension –

o PDF, PPT, XLS, DOC, WMV, TXT, CSV, SKP...

(In fact, arbitary extensions...)

### #12 – Searching within a particular site

- Someone told me that I'd been quoted in the New York Times.
   OMG! What did I say that was quotable?
- Can you find a page in the New York Times where I (Dan Russell) was quoted?

#### #12 - answer

• Use the site: operator to search within a particular web site...

[ Daniel M Russell **site:**nytimes.com ]

... and see the number 1 hit. (Yes, I worked at IBM.)

Note that you NEED to include the M in my name.

Why?

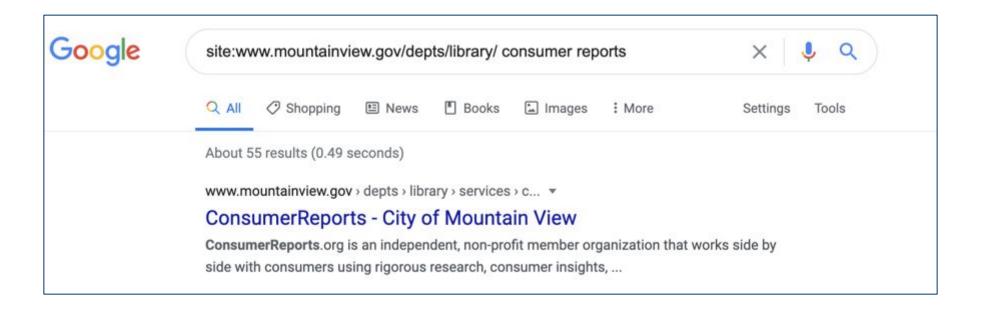
Answer: 1. Because "Daniel Russell" is a very common name.

2. The NYTimes has the convention of always spelling a person's name out completely, including middle initials

#### #12 - answer

• Use the site: operator to search within a particular web site...

# [ site: www.mountainview.gov/depts/library/ consumer reports ]



#### #12 - answer



### #13: Think about synonyms

You know that when you eat pig, the meat is called "pork."
 When you eat sheep, the meat is called "mutton."
 When you eat deer, the meat is called "venison."

 Suppose you visit your cousin in Sydney, Australia and they serve grilled kangaroo. What's another word for "kangaroo meat"?

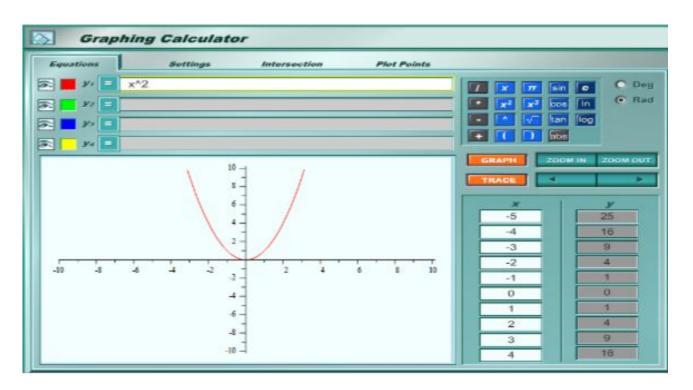
### #14: General principle: Look for tools

Can you find a way to graph the equation:

$$y = x^2 + \sin(x)$$

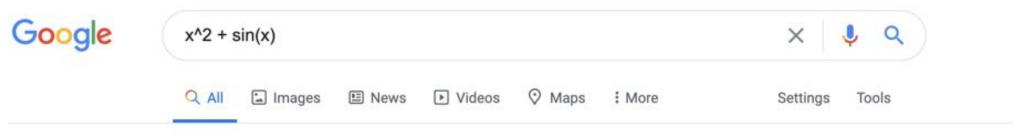
#### #14: answer

Answer: use [ graphing calculator ] – then choose one



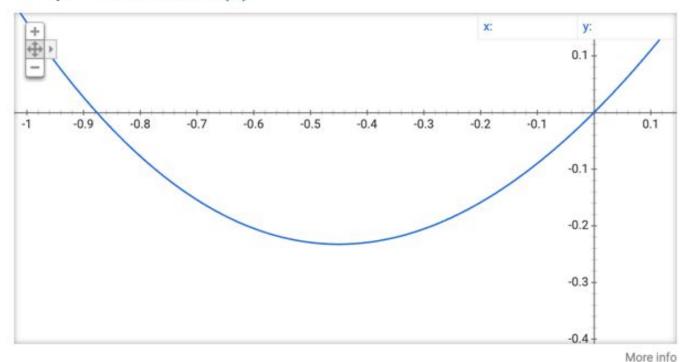
 Key takeaway: You can look for TOOLS too (concordance tool, various scientific and mathmatical analysis tools...)

### #14: answer #2



About 4,100,000,000 results (0.74 seconds)

#### Graph for $x^2+\sin(x)$

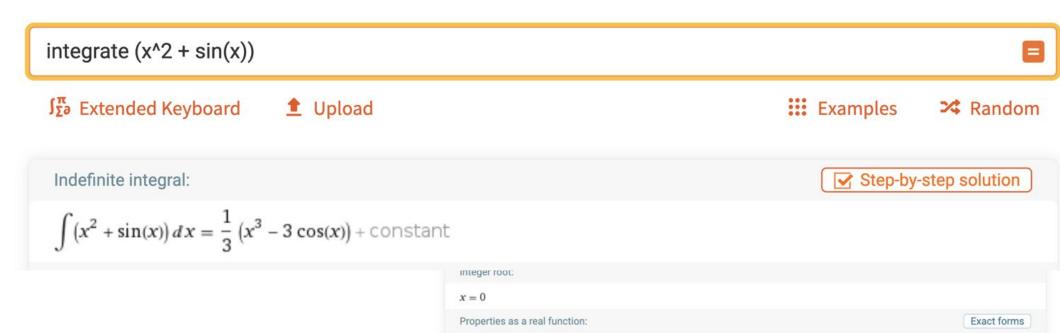


#### #14: answer #3



R is the set of real numbers





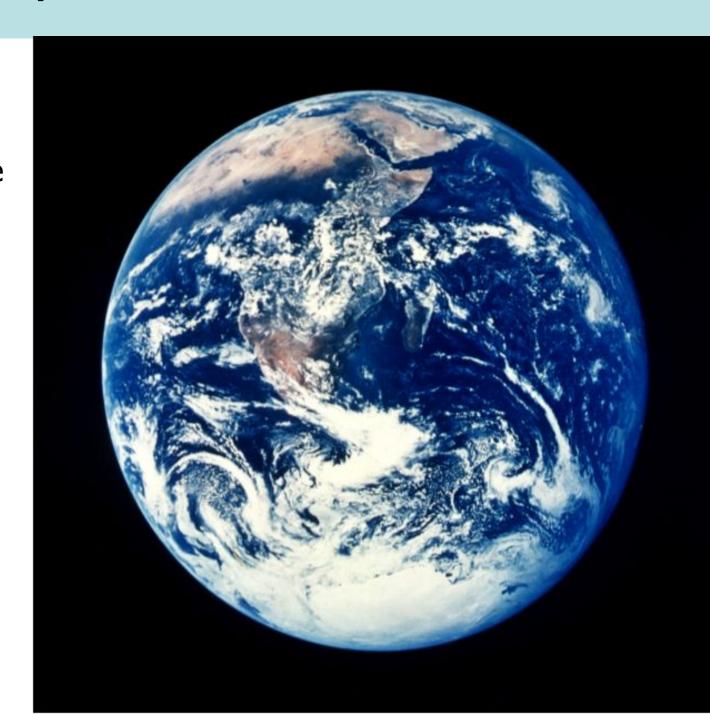
Domain

R (all real numbers)

 $\{y \in \mathbb{R} : y \ge -0.232466\}$ 

# #15: Asking dataful questions

Can you figure out the diameter of the earth?



#### #15: Answer

Just do the obvious: [ diameter of the earth ]

Google

But CHECK YOUR ANSWER by looking at different sites. Depending on which one you choose, you'll get somewhat different answers!

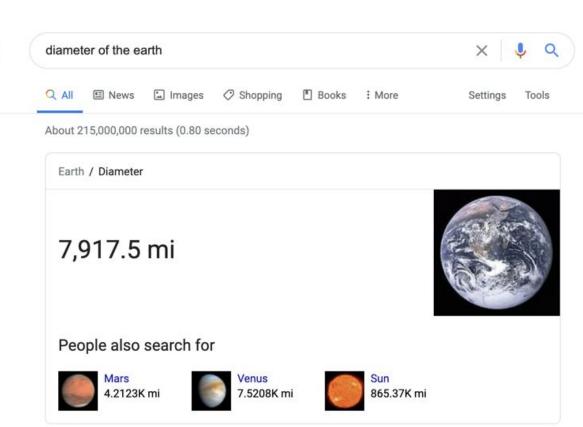
Site #1: 7,926.41 miles

Site #2: 12,756 km

Site #3: 12,756.3 km

Site #4: 7,900 miles

Why the differences?



### #16: Calculator

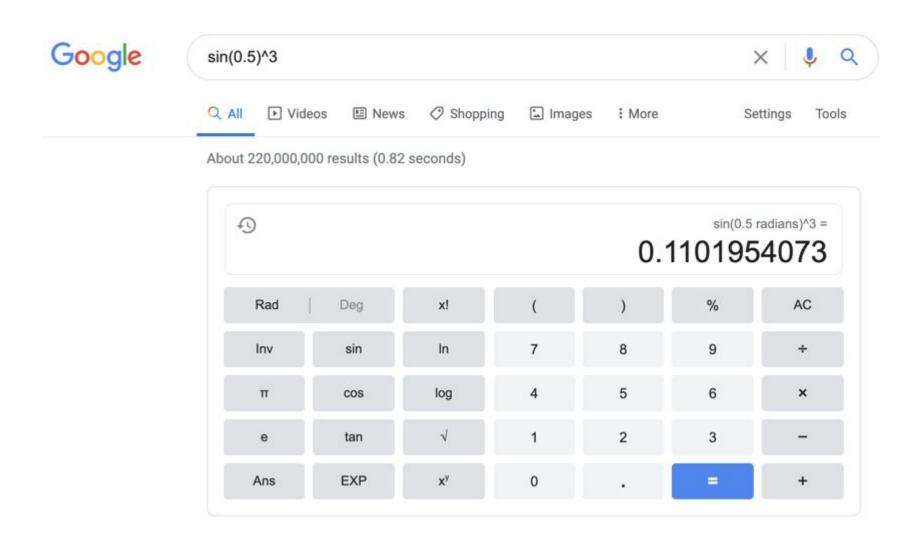
- Can you figure out how to use the calculator on Google?
  - Once you have figured it out try figuring these out!

$$1.4 + 5 + 19 = ??$$

$$2.45023 / 34 + 5 / 29 = ??$$

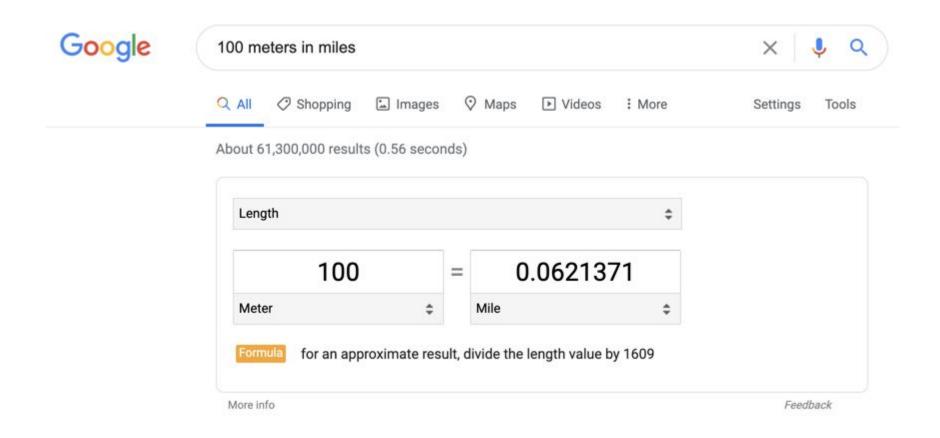
$$3. Sin(0.5) ** 2 = ??$$

#### #16: Calculator... answer



#### #17: Conversions

• General pattern: number units1 in units2



#### Problem: How fast does the World's Fastest Man run in MPH?

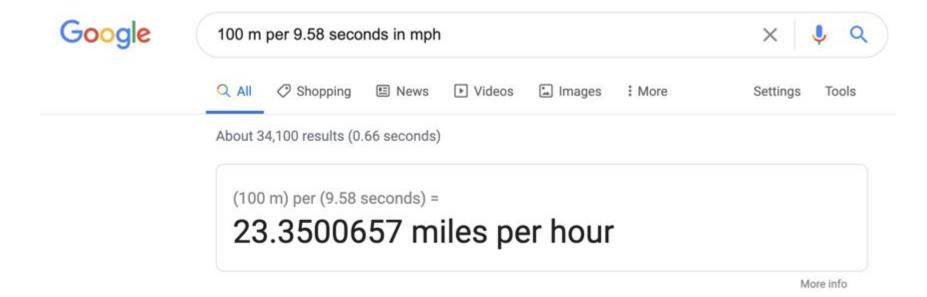
#### Steps:

- 1. What's the current world record?
- 2. Make the conversions
- 3. Do the calculations



- 1. Use web search (news) to find out world record
- 2. Note that the record is in meters (100 meters)
- 3. Convert distance from meters to miles
- 4. Convert time from seconds to hours

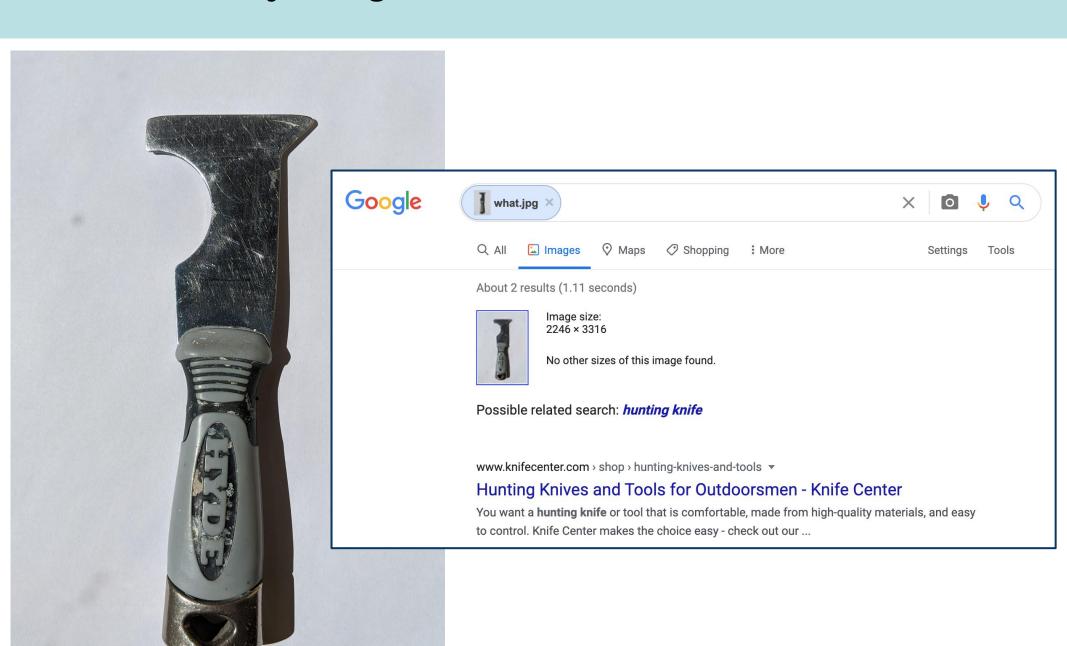


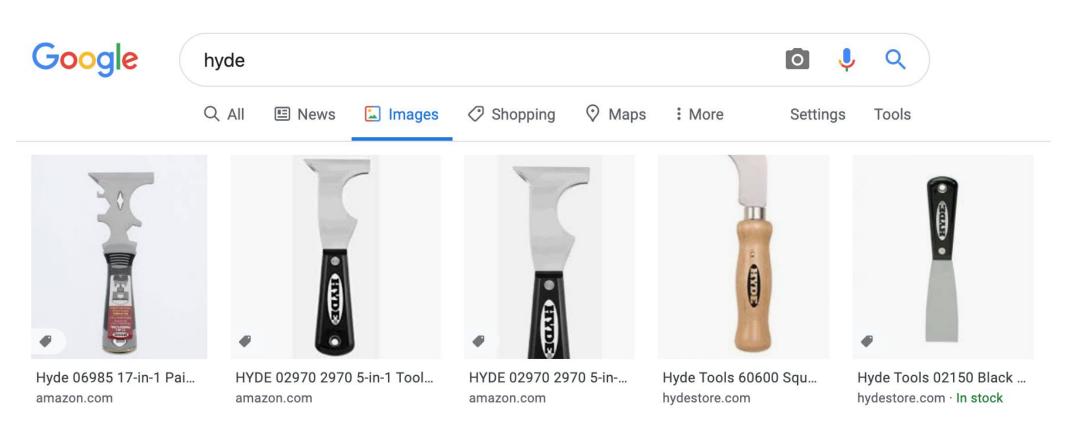


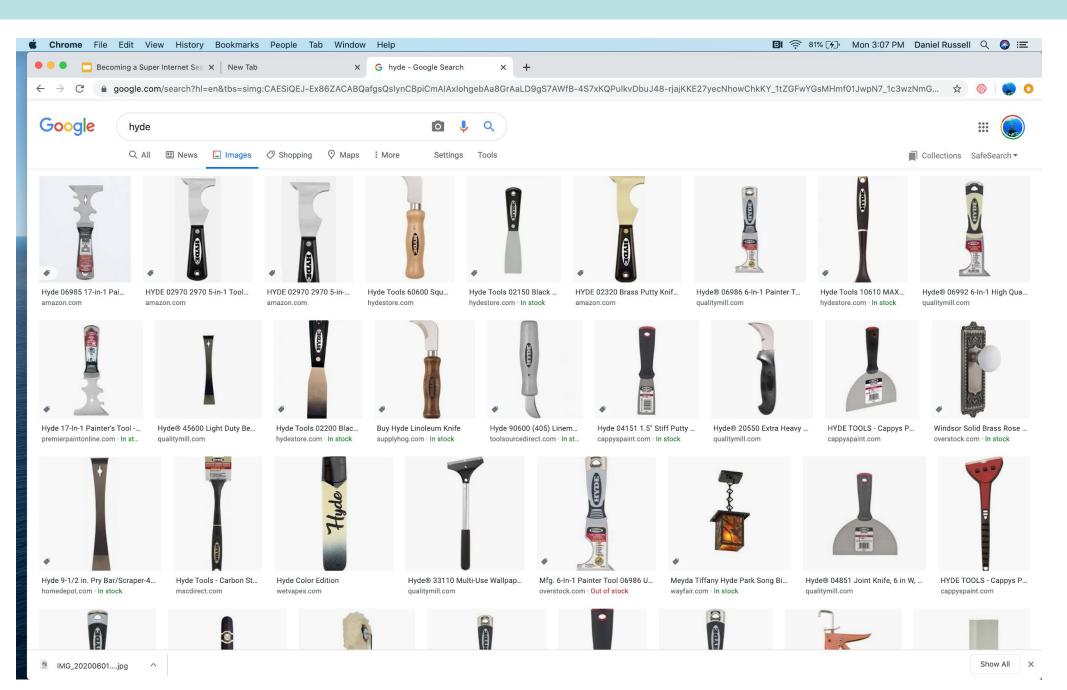








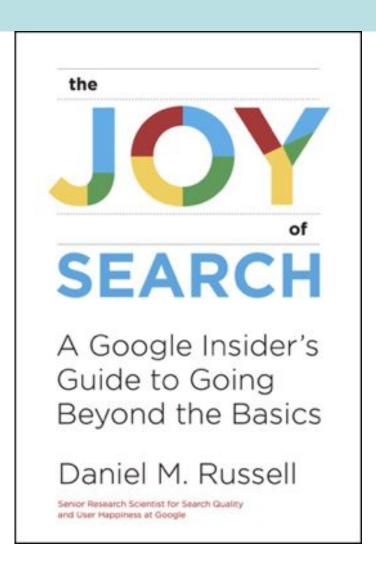




### Summary

- When in doubt, search it out!
- Your search skills will become stale quickly... keep tracking the new features that we offer!
  - Track the new content types & properties we introduce
- Practice deliberately. When you get the chance, try the same search a few different ways and note the differences. Ask why!

If you liked this... there's more...



My blog: SearchResearch1.blogspot.com

My web site: bit.ly/DanHome

Twitter: @dmrussell

Email: drussell@google.com

My search game: AGoogleADay.com

TheJoyOfSearch.net for everything else



This lesson was developed by: Daniel Russell Ann Awakuni Fernald

This lesson is licensed under a Creative Commons
Attribution-Share-Alike license. You can change it, transmit it, and show it to other people. Just always give credit to Google.com ("Attribution"), and make sure that any works you make based on these lessons are also under the same Creative Commons Attribution-Share-Alike license ("Share-Alike").

http://creativecommons.org/licenses/by-sa/3.0/legalcode.