

Lesson 1.3: How Search Works

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[Access Lesson 1.3 slides here](#)

This lesson features a video by Matt Cutts, an engineer at Google. It demonstrates how spiders work: how they crawl the web, collect information, and pull it all together to provide an index Google uses every time you do a search.

Here's Matt Cutts explaining [how search actually works](#):

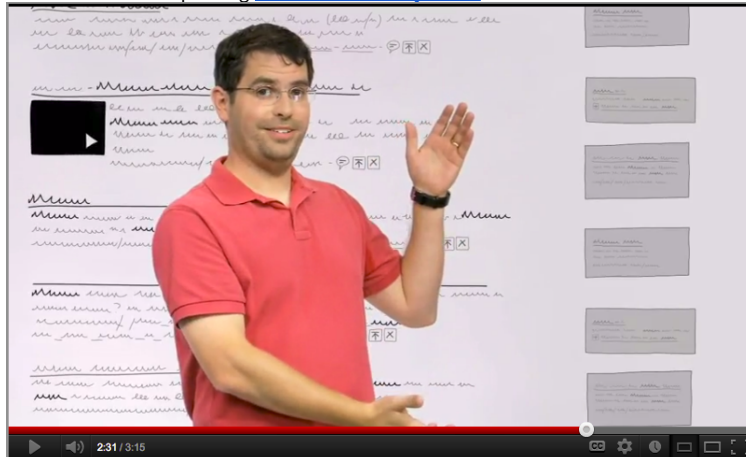


Figure: Matt Cutts talking in the video [How Search Works](#).

Matt Cutts: Hi. My name is Matt Cutts. I am an engineer in the Quality group at Google, and I'd like to talk today about what happens when you do a web search. The first thing to understand is, when you do a Google search, you aren't actually searching the web. You're searching Google's index of the web, or at least as much of it as we can find.

We do this with software programs called spiders. Spiders start by fetching a few web pages, then they follow the links on those pages and fetch the pages they point to; and follow all the links on those pages, and fetch the pages they link to, and so on, until we've indexed a pretty big chunk of the web; many billions of pages stored on thousands of machines.

Now, suppose I want to know how fast a cheetah can run. I type in my search, say [cheetah, running, speed] and hit return.

Our software searches our index to find every page that includes those search terms. In this case, there are hundreds of thousands of possible results.

How does Google decide which few documents I really want?

By asking questions; more than two hundred of them. Like:

- How many times does this page contain your key words?
 - Do the words appear in the title? In the URL (web address)?
 - Do the words appear directly adjacent?
 - Does the page include synonyms for those words?
 - Is this page from a quality website? Or is it low quality, even spammy?
- What is this page's PageRank? That's a formula invented by our founders, Larry Page and Sergey Brin, that rates a web page's importance by looking at how many outside links point to it, and how important those links are.

Finally, we combine all those factors together to produce each page's overall score and send you back your search results, about half a second after you submit your search.

At Google, we take our commitment to delivering useful and impartial search results VERY seriously. We don't ever accept a payment to add a site to our index, update it more often, or improve its ranking.

Sometimes, along the right, and at the top, you'll see ads.

The image shows a Google search results page for the query "beads". The search bar at the top shows "beads" and "Search". Below the search bar, it says "About 201,000,000 results (0.24 seconds)".

On the left side, there are navigation tabs: Web, Images, Maps, Videos, News, Shopping, and More. Below these is the location "Miami, FL" and "Change location".

The main content area is divided into two columns. The left column contains organic search results, and the right column contains a "Map for beads" and more organic results. Several advertisements are highlighted with red boxes:

- Top Left Ad:** "Wholesale Beads | fremountaingems.com" with subtext "www.fremountaingems.com/ Over 101,000 beads & bead supplies; Wholesale prices; since 1973".
- Top Right Ad:** "Beads & Beading Supplies | LimaBeads.com" with subtext "www.limabeads.com/ Awesome Quality At Discount Prices. Have It In 2 Days - Shipped Free!".
- Middle Left Ad:** "Beads Supplier - Wholesale Prices & +Free Shipping" with subtext "www.brightingsbeads.com/ Unmatched Quality and Distinction!".
- Middle Right Ad:** "Wholesale Beads and Jewelry Making Supplies - Fire Mountain..." with subtext "www.firemountaingems.com/ America's favorite beads and beading supplies since 1973. Largest selection of beads and jewelry making supplies at wholesale prices."
- Bottom Left Ad:** "Shipwreck Beads - The World's Largest Selection of Beads!" with subtext "www.shipwreckbeads.com/ Shipwreck Beads offers the World's Largest Selection of Beads. In addition to a HUGE selection of beading accessories, jewelry making supplies, and beading ..."
- Bottom Right Ad:** "Amazon.com: Beads & Bead Assortments" with subtext "www.amazon.com/?tag=LTF&node=12896121 Results 1 - 24 of 10737 - Online shopping for Beads & Bead Assortments from a great selection of Arts, Crafts & Sewing; & more at everyday low prices."
- Map Ad:** "Map for beads" showing a map of the Miami area with markers for various bead suppliers.
- Right Side Ad:** "Google Offers: She Beads" with subtext "Google Offers: \$25 for \$50 toward jewelry and gifts".
- Bottom Right Ad:** "Beads.craft" with subtext "www.sunshinecrafts.com/ Thousands to choose from. Excellent Service, Fast shipping!".
- Bottom Right Ad:** "50% OFF Glass Beads" with subtext "www.carashesartfinds.com/ Storewide Clearance Free Shipping".
- Bottom Right Ad:** "Swarovski Crystal Beads" with subtext "www.locustbeads.com/ Huge Selection of Swarovski Wholesale pricing without quantity".

Figure: A search results page, with highlighted ads at the top and on the right side.

We take our advertising business very seriously as well. Both, our commitment to delivering the best possible audience for our advertisers, and to strive to only show ads that you really want to see.

We're very careful to distinguish your ads from your search results. And we won't show you any ads at all if we can't find any we think will help you find the information you're looking for. Which in this case, a cheetah's top running speed, is more than sixty miles an hour.

Thanks for watching. I hope this makes Google a little more understandable. Please give the activity a try!