



Using search engines

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What is a search engine?

- ▶ Wikipedia defines a search engine as: “A software system that finds web pages that match a web search. They search the World Wide Web in a systematic way for particular information specified in a textual web search query. The search results are generally presented in a line of results, often referred to as search engine results pages...”
- ▶ Basically you type in a search query into a search field and the search engines tries to show pages that have information on the topics in your query.
- ▶ The results can be web pages, images, video or links to data (Files, Software downloads etc...).



How do they work?

- ▶ Search engines work by Crawling, Indexing and Searching the World Wide Web.
 - ▶ Web crawlers read the robots.txt file from a web site. The robots.txt file tells the crawler which pages to look at and which to ignore.
 - ▶ Indexing is where a search engine reads a web page and creates associating words or definable tokens for each page or site.
 - ▶ Searching tries to match exact words or phrases with what is presented on the web page.
- ▶ Web sites will try to help out search engines by adding Metadata to a web page called Search Engine Optimization (SEO).



What are the main search engines?

- ▶ Search engine popularity took off in the 90s. The first search engines began in 1993 with engines like W3Catalog and WWW Worm. Google and MSN Search (now Bing) both started in 1998.
- ▶ Popular search engines of today (2022) are:
 - ▶ Google (USA) - 85% desktop and 95% of mobile searches.
 - ▶ Bing (USA) - 7% of desktop and 2% of mobile searches.
 - ▶ Yahoo (USA) Uses Bing for search - 2% of desktop search.
 - ▶ Yandex (Russia) 2% of desktop search. 50% of searches in Russia.
 - ▶ DuckDuckGo (USA) Less than 1% of desktop searches.
 - ▶ Baidu (Chinese) 40% of all Chinese searches.
 - ▶ Ask.com (USA) Less than 1% of desktop searches.
 - ▶ Naver (Korea) 34% of Korean searches.
 - ▶ Ecosia (Germany) Uses Bing for search - Less than 1% of desktop searches.
 - ▶ AOL (Yes AOL is still around) Less than 1% of desktop searches.



What sets them apart?

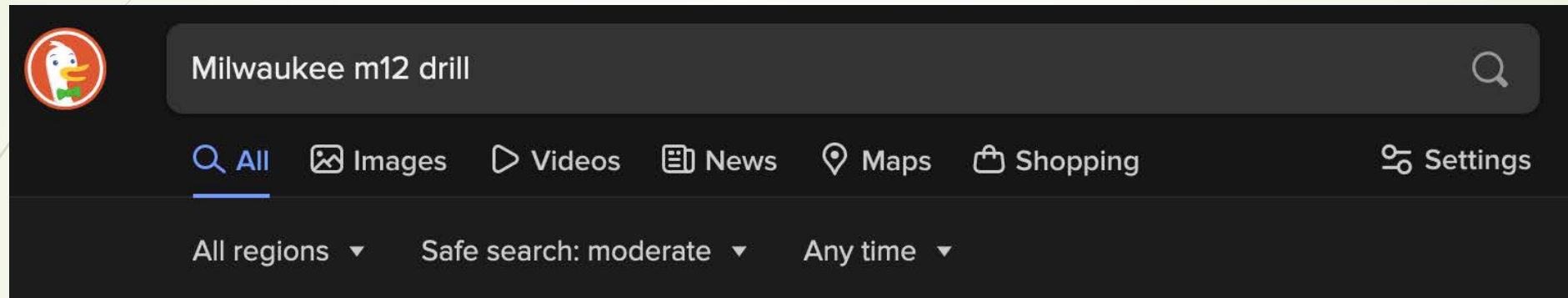
- ▶ Google - First REALLY GOOD search engine. They have kept their lead by being generally fast and generally good at giving users what they are searching for.
- ▶ Bing - Has been the Not-Google search engine for a while, but they have been adding AI to their search engine that helps to extend the abilities of the plain search engine.
- ▶ Yandex, Baidu, Naver - are all regional search engines and provide results for that region and in the local language.
- ▶ DuckDuckGo - Security focused searches. They say that they don't track you, and that has mostly been shown to be the case.
- ▶ Ecosia - A green search engine that uses it's proceeds to plant trees.
- ▶ Ask.com - A search engine that tries to answer questions. It is not the best option for getting shopping results.
- ▶ AOL - AOL is still around?



Search engine basics.

- ▶ Using a search engine is as simple as typing in a word or phrase into the search text field and pressing enter. You can get results for:
 - ▶ Videos, Images, Maps, News or All of the above.
 - ▶ Be specific when searching. Use keywords like "Recipe" when searching for recipes.
 - ▶ Most search engines will do simple math and calculations.
 - ▶ You can convert currencies, weights and measures.
 - ▶ You can get stock quotes by typing in the stock symbol.
 - ▶ You can get holidays, flight schedules and distances between cities.
 - ▶ Translate languages.
 - ▶ Set a timer.

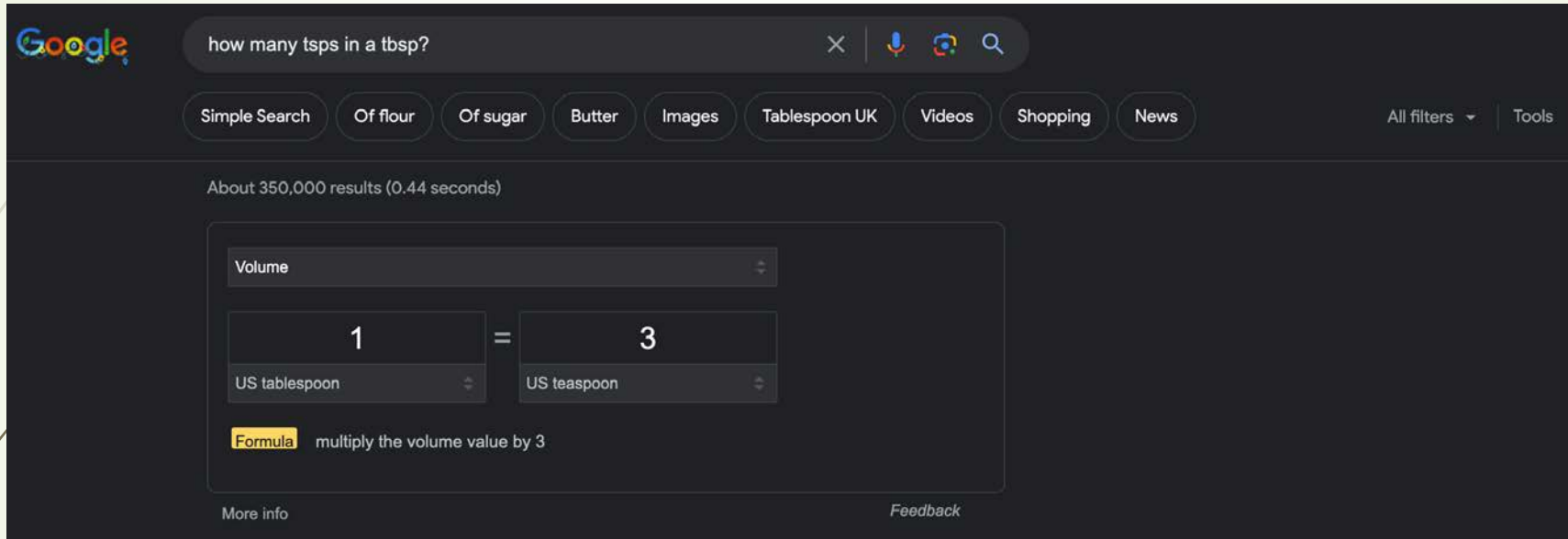
Examples...



Once you have the search results, you can select to view: Images, Videos, News, Maps, Shopping or all.

You can also select a region or how long ago the page was created, so you're not viewing information from 5 years ago (Unless that's what you want).

Examples...

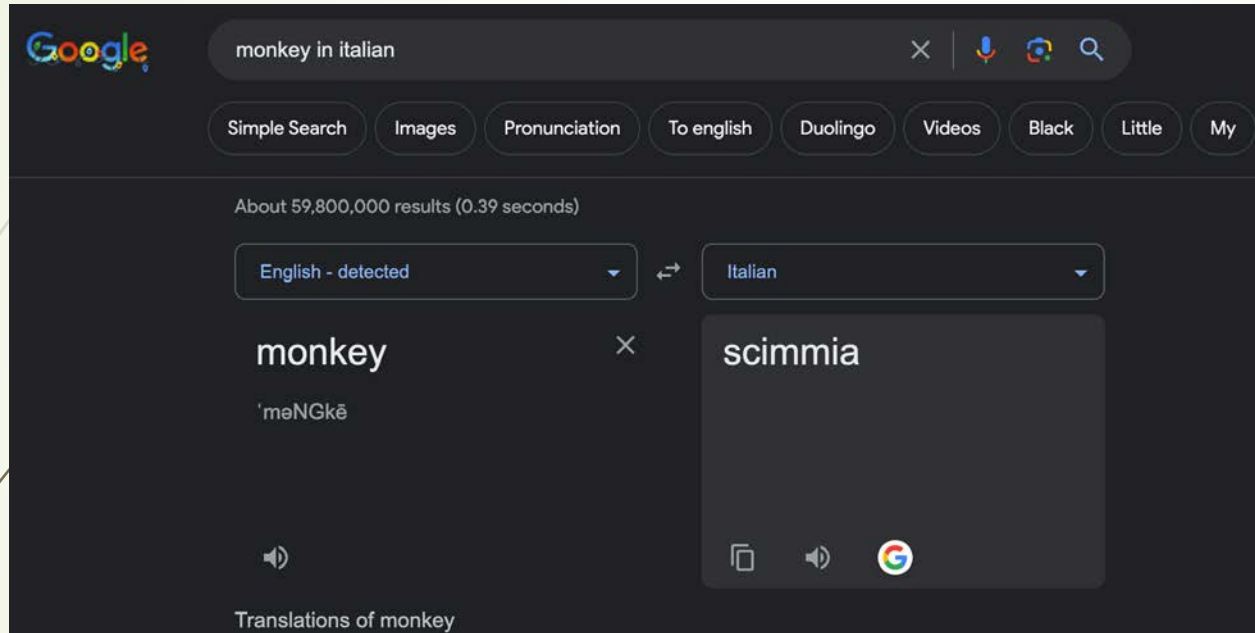


The screenshot shows a Google search interface with the query "how many tsps in a tbsp?". The search results display a conversion tool for volume. The tool shows a dropdown menu for "Volume" with "US tablespoon" selected. The input field contains the number "1". The output field shows "3" and "US teaspoon". Below the tool, there is a "Formula" section that reads "multiply the volume value by 3". The search results also indicate "About 350,000 results (0.44 seconds)".

Google and some other search engines will allow you to do conversions of various measures.

You need to click the “tool” icon to get to the filters like “time”.

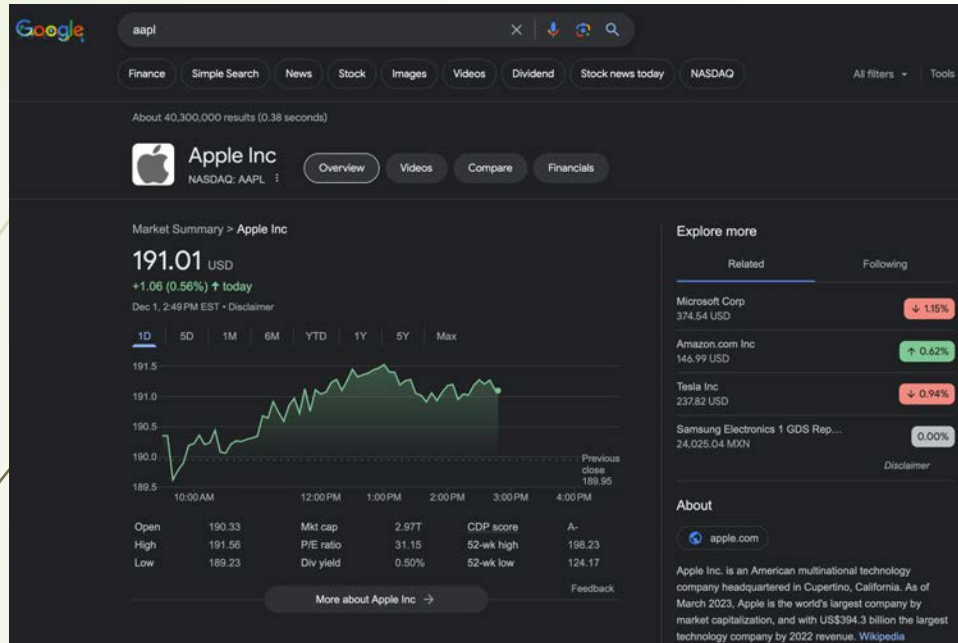
Examples...



Google and some other search engines will allow you to do translations from English to other languages without going to the Google Translate Page.

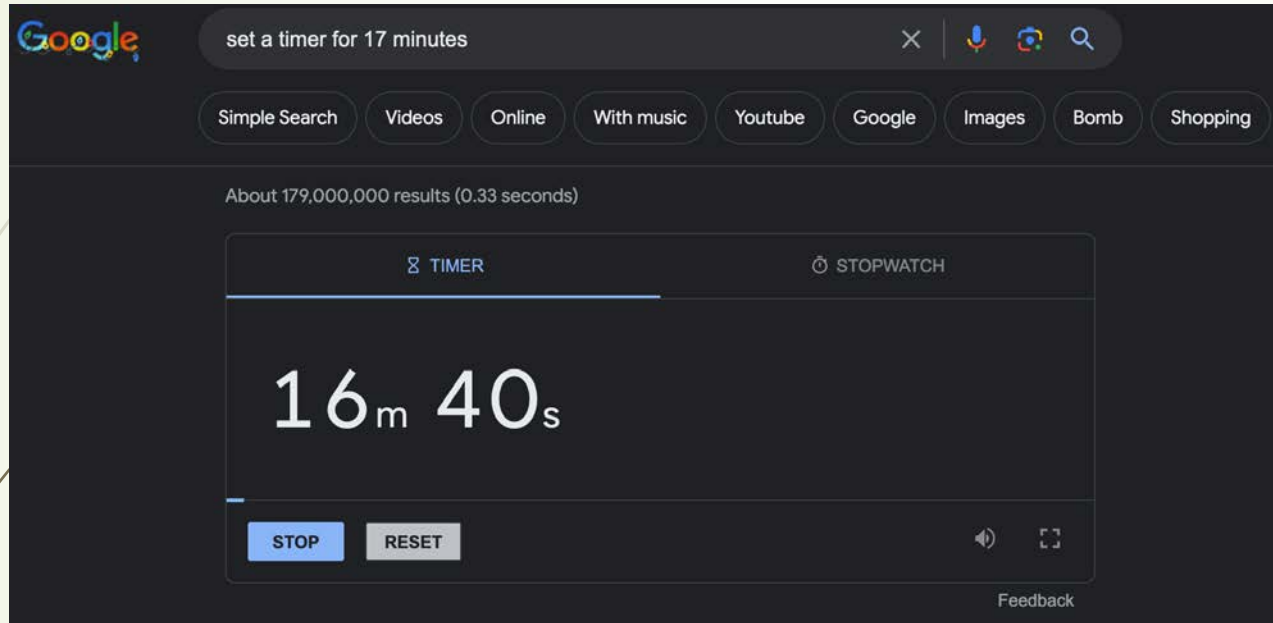
You can click on the speaker icon to hear how to pronounce the word.

Examples...



Google and some other search engines will allow you to get stock quotes by typing in the 4 letter stock symbol.

Examples...

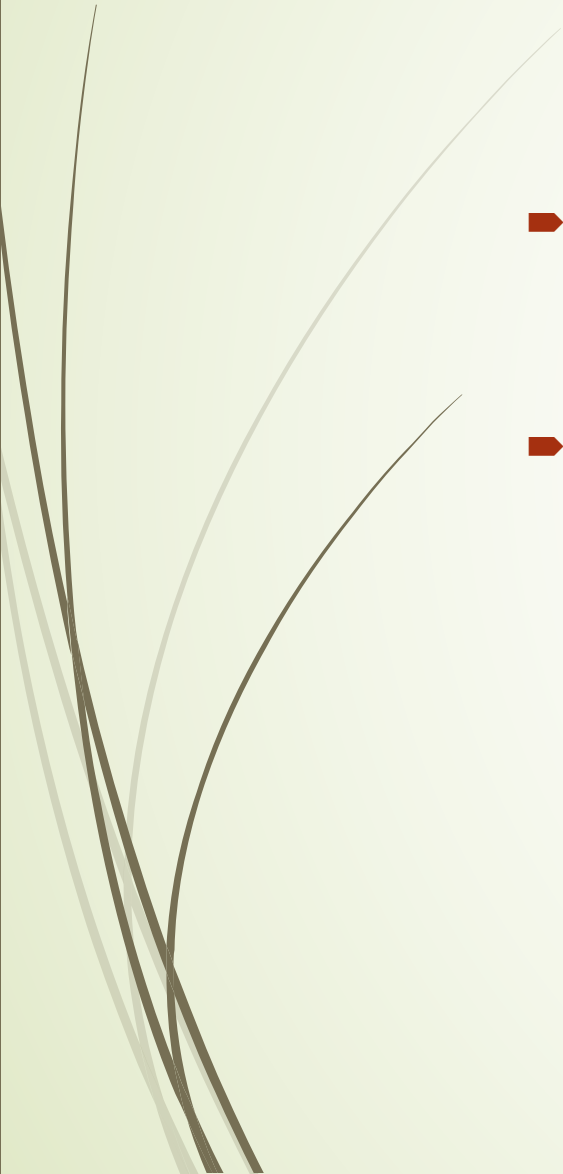


Google and some other search engines will allow you to set a timer directly in the browser that will count down to zero.

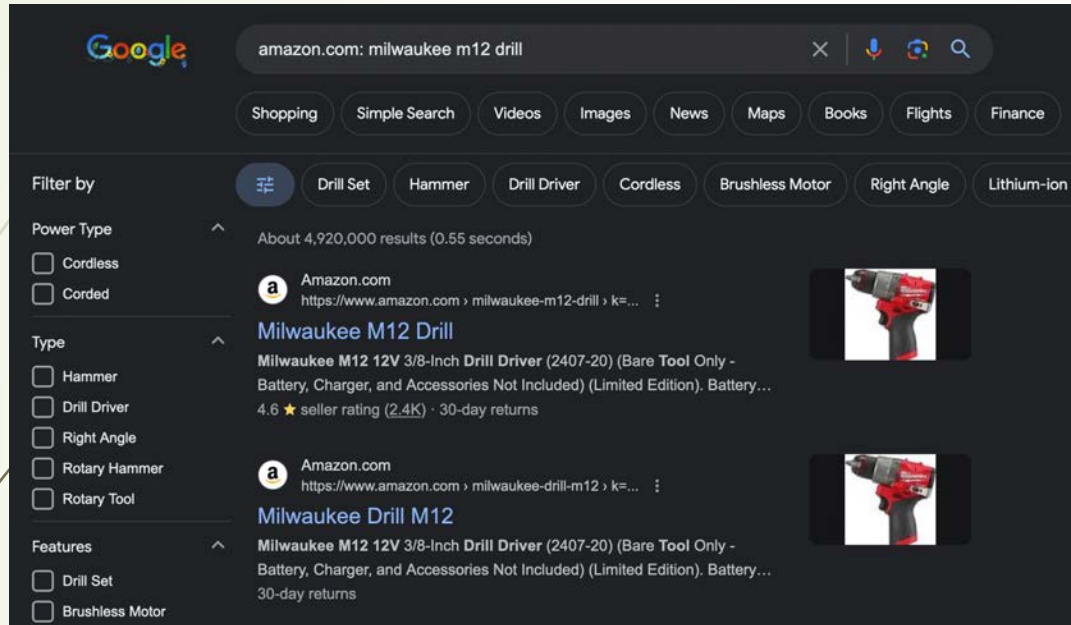
The timer plays a sound when it reaches zero.



How to customize searches.

- ▶ Use the name of a website plus a colon to search only that website. Use a minus sign and a name of a website to ignore that website.
 - ▶ Use tools to filter search results
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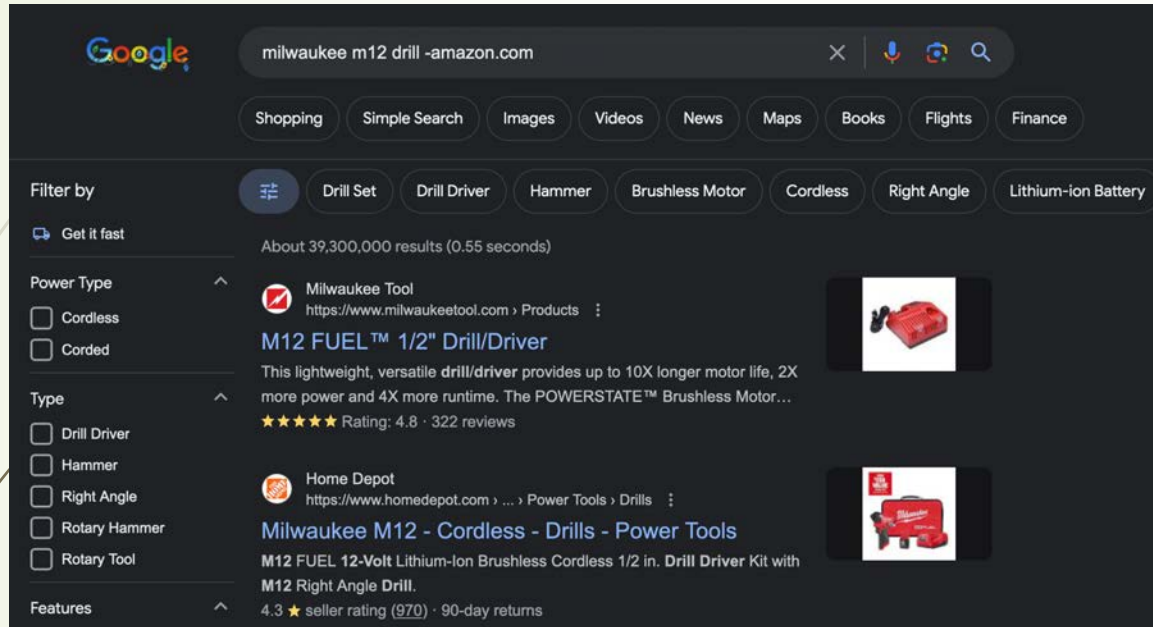
Examples...



Google and some other search engines will allow you to search only a specified site by adding "site: site.com" or just "site.com:" *without the quotes* to the start of the search query. To see only results from amazon.com add the amazon.com: at the beginning of your text.

*Don't forget the colon at the end of the site name.


Examples...



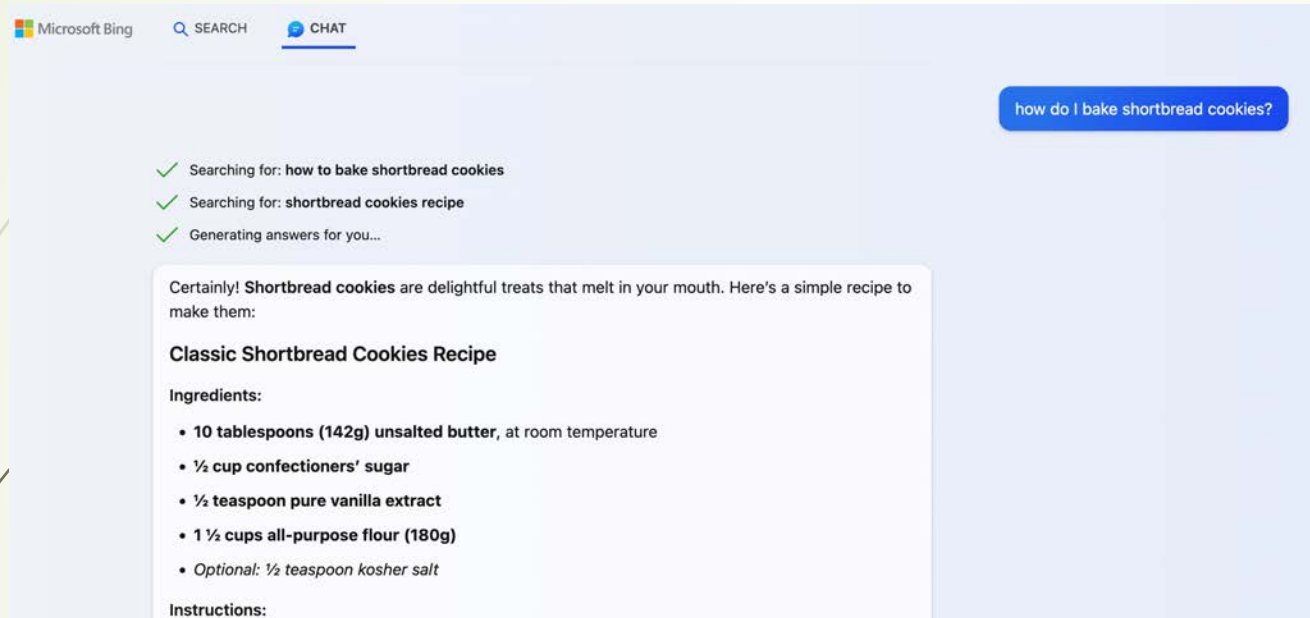
Google and some other search engines will allow you to exclude specific sites from the search results by adding a "-site.com", so "-amazon.com" to exclude results from amazon.com.



Recent advances in search engines.

- ▶ All the major search engines are trying to add AI to their search offerings. AI can be used to generate text and images, and can also be used to answer questions without having to do a traditional search of the web.
 - ▶ Bing is probably the furthest along in AI integration at this point, but all the major search engines are starting to add AI now.
 - ▶ Watch Bruce Cain's informative presentations on AI that are posted on our YouTube channel for more information.
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Examples...



Microsoft Bing SEARCH CHAT

how do I bake shortbread cookies?

- ✓ Searching for: how to bake shortbread cookies
- ✓ Searching for: shortbread cookies recipe
- ✓ Generating answers for you...

Certainly! **Shortbread cookies** are delightful treats that melt in your mouth. Here's a simple recipe to make them:

Classic Shortbread Cookies Recipe

Ingredients:

- 10 tablespoons (142g) unsalted butter, at room temperature
- ½ cup confectioners' sugar
- ½ teaspoon pure vanilla extract
- 1 ½ cups all-purpose flour (180g)
- *Optional: ½ teaspoon kosher salt*

Instructions:

Bing Chat will allow you to ask question and it will try to give answers based on information that is on the web. *We all know that not everything that is on the web is correct or good, so be careful when using this feature.



Security when searching.

- ▶ As with nearly everything online, there are individuals that are trying to scam people.
- ▶ Make sure that the links in the search results are to places that you can trust.
- ▶ Anyone can set up a domain and website to fool people into thinking it is related to some business. They can then use search engine optimization to direct search results to the fake site.
- ▶ The URL: microsoft.support.com is completely different than support.microsoft.com. The first one goes to "support.com" while the second goes to "microsoft.com".
- ▶ Just because a link was presented as a search result doesn't mean that it is a trusted site. Do your research. If you don't know the site well, be careful of downloading anything from it.



Questions?

▶ Thanks for attending!

