Google is sort of magical.
For example, my coworker got a new TV. But it looked weird.

Ex. No.
UPX0228
1:20-cv-03010-APM

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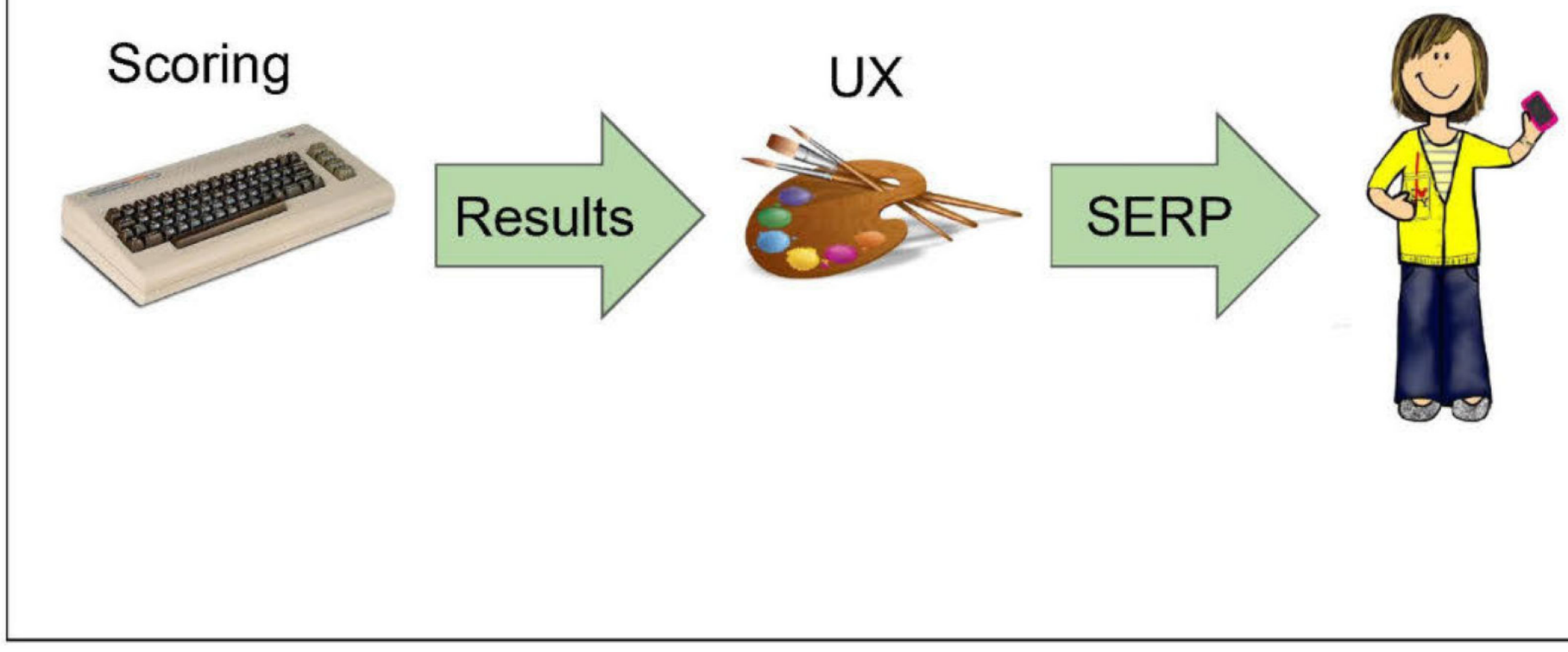
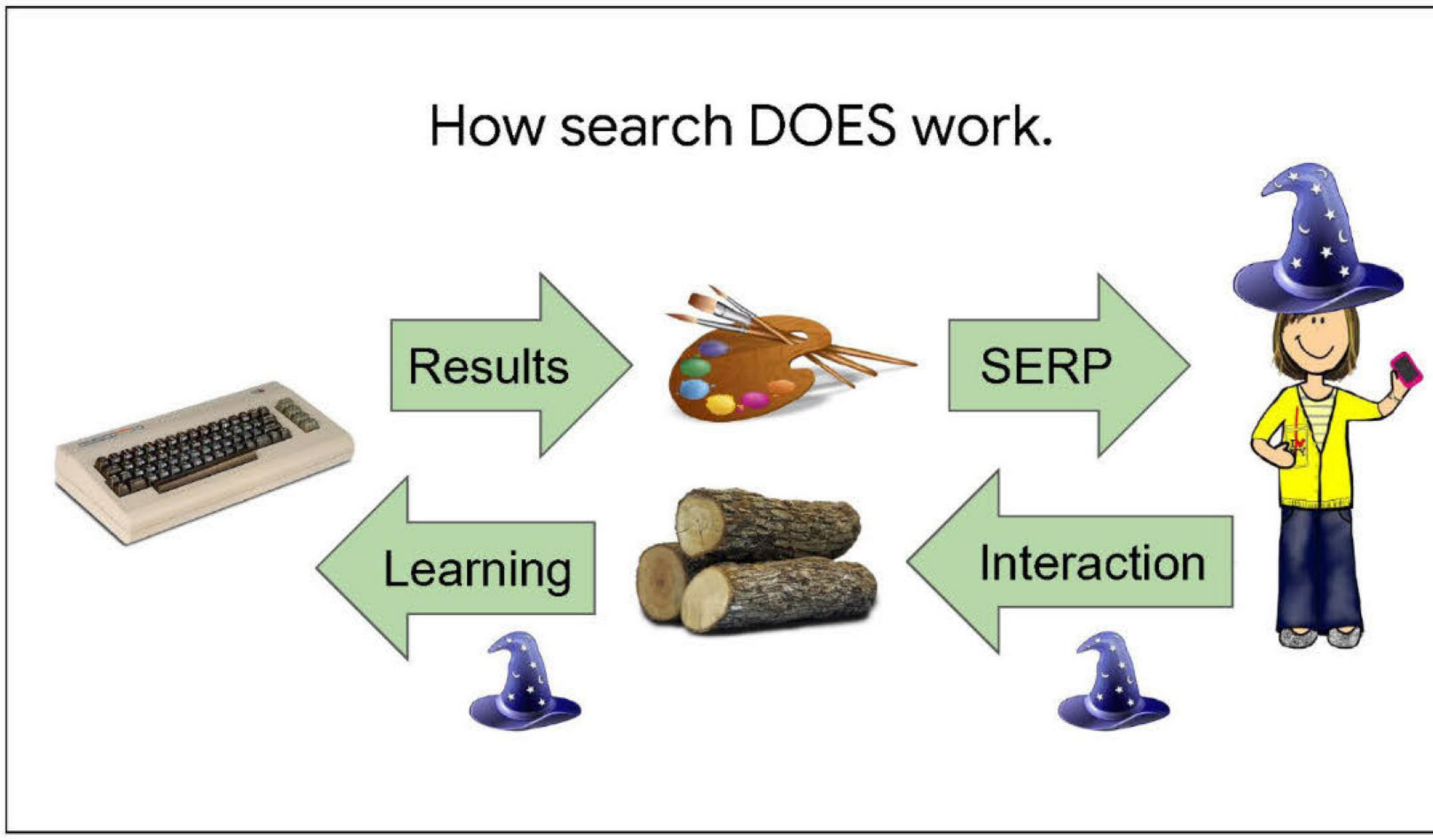
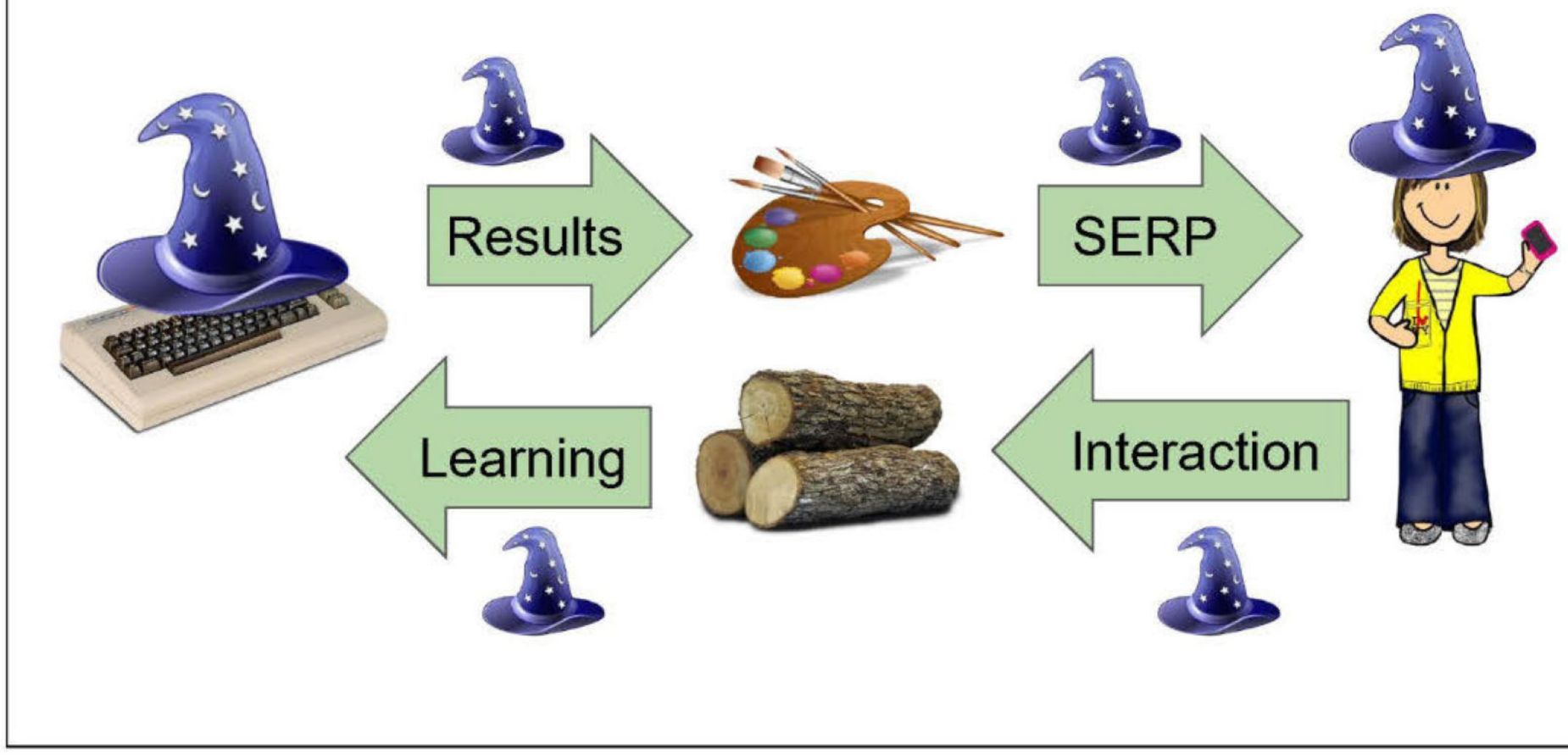


Let's start with how search does NOT work.
We get a query. Various scoring systems emit data, we slap on a UX, and ship it to the user.
This is not false, just incomplete. So incomplete that a search engine built this way won't work very well. No magic.



The key is a second flow of information in the reverse direction.
As people interact with search, their actions teach us about the world.
For example, a click might tell us that an image was better than a web result. Or a long look might mean a KP was interesting.
We log these actions, and then scoring teams extract both narrow and general patterns.



The source of Google's magic is this two-way dialogue with users.
With every query, we give a some knowledge, and get a little back. Then we give some more, and get a little more back.
These bits add up. After a few hundred billion rounds, we start lookin' pretty smart!
This isn't the only way we learn, but the most effective.

How can we learn more from users?

- Users ask, Google answers. This is our core function. Can't screw this up.
- We must unobtrusively turn the tables. One good strategy:
  - Implicitly pose a question to the user.
  - Provide background.
  - Give the user a way to answer.

So how do we learn more from users?
On the surface, users ask questions and Google answers. That's our basic business. We can't screw that up.
But we have to quietly turn the tables. One way is to:
1. ask the user a question implicitly
2. provide necessary background information
3. give the user some way to tell us the answer

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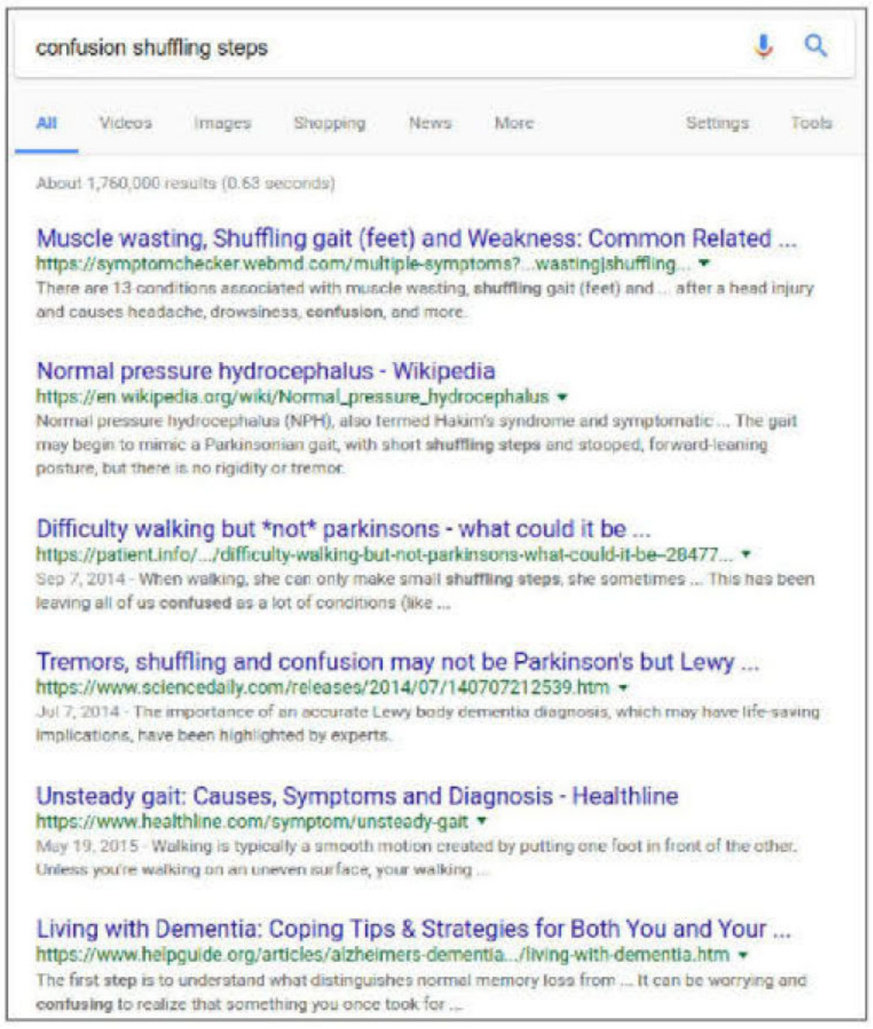


10 blue links

"Which result is best?"

Titles and snippets provide background.

Answer is a click.

For example, the ten blue links implicitly pose the question, "Which result is best?"
Result previews give background. And the answer is a click.
This is a great UX for learning. For years, Google was mocked for great search results in a bland UI.
But this bland UI made the search results great.

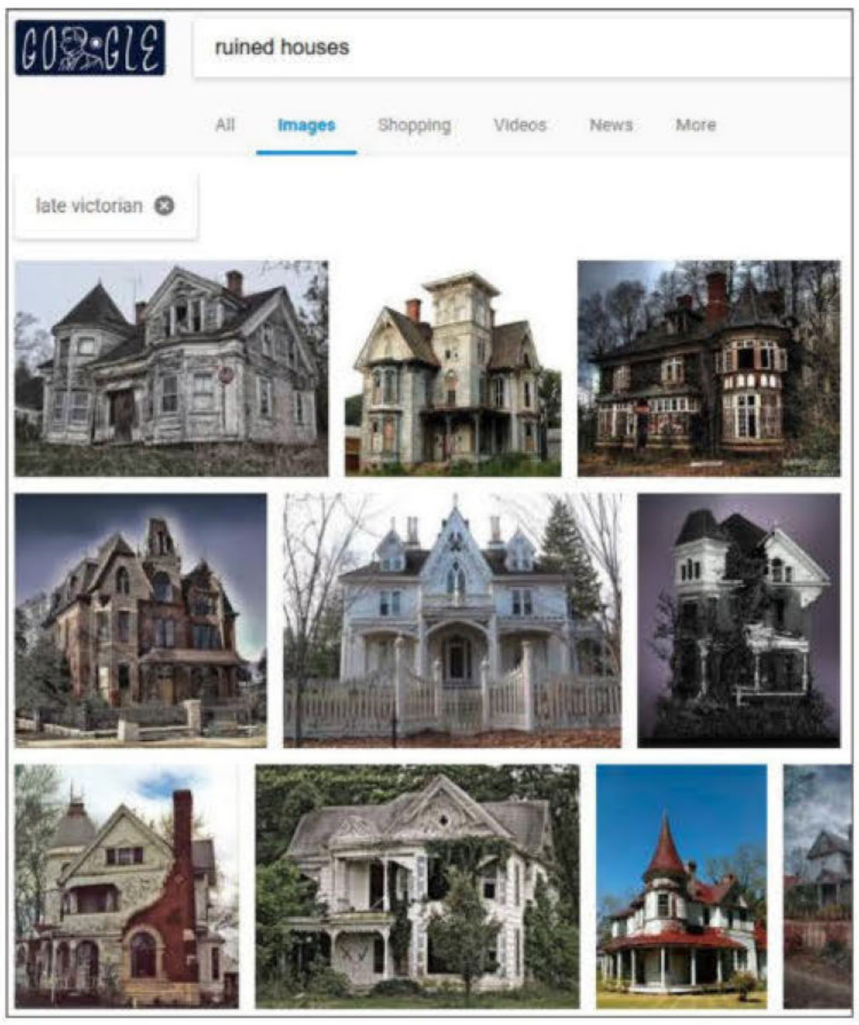


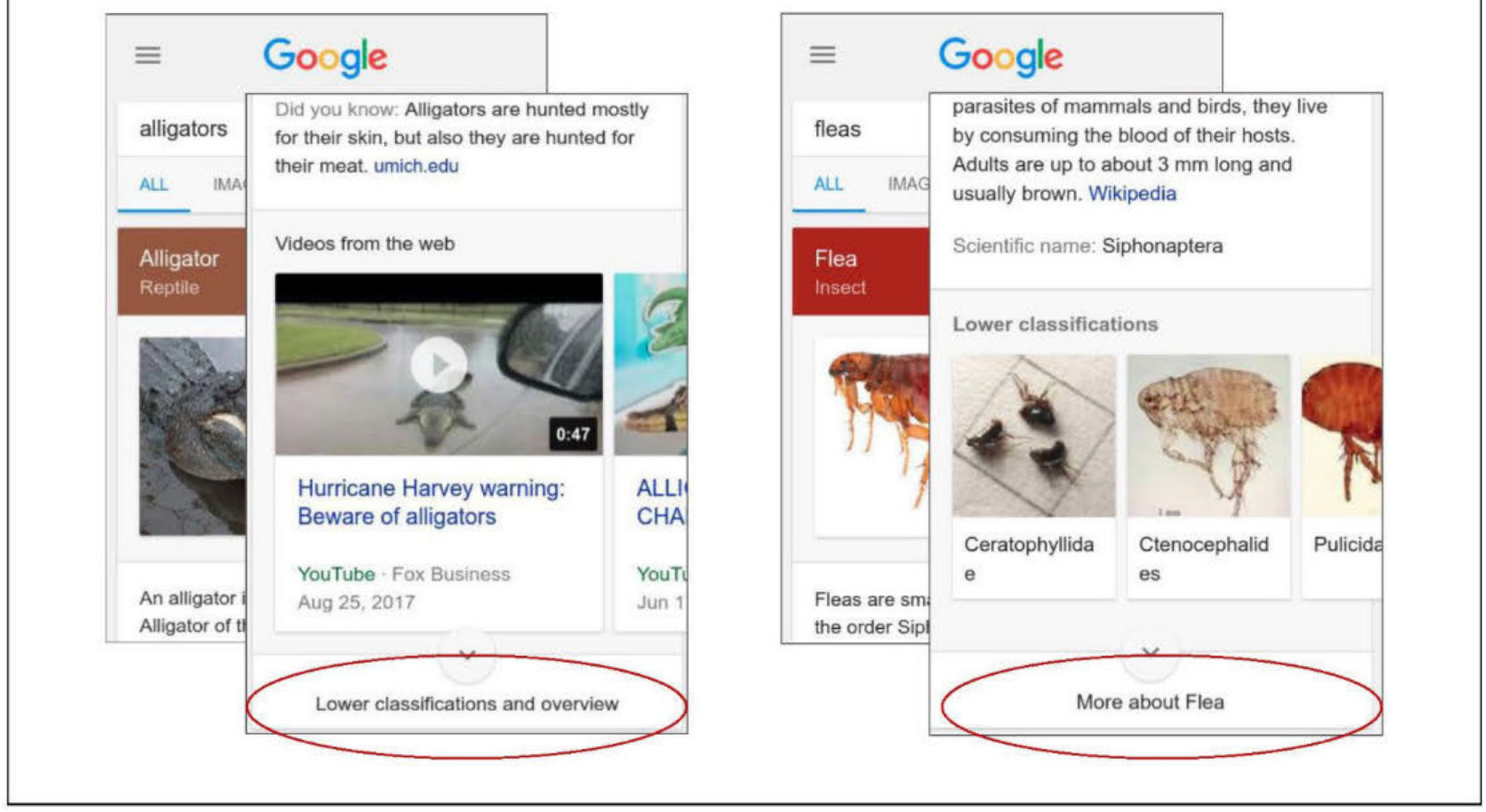
Image search

"Which result is best?"

Thumbnails provide background.

Answer is a hover, click, etc.

Image search poses a similar question-- which do you like best? Thumbnails provide background information, and the user's answer is logged as a hover, click, or further interaction.



For example, some knowledge cards need an extra tap to fully open.
On the left, an extra tap means the user wants lower classifications and an overview.
On the right, the user has too little background information.
More what? How is tapping here different from scrolling down? Users can't make a good decision, so
Taps and clicks are such distinctive events in logs; we should endow every one with meaning.