

Smooth Operator! Four Strategies to Teach Boolean Searching

Article

by Sheryl Fullner, March 2012

You can sort a closet or a drawer and bring order and calm. You can sort a garage and get rid of things you no longer need. Best of all for your students, you can sort the Internet.

In the early days of the web, Boolean logic was the only way to sort or weed out extraneous hits from the hundreds that might show up in a search. Once searches began to return thousands of hits and then hundreds of thousands for a single search term, search engines incorporated some Boolean operators automatically. For example, Google and Yahoo invisibly add an “and” between any two words. Both also offer an advanced search propelled by dialog box operators.

To introduce students to the three operators in different settings, try any of these four strategies.

STRATEGY ONE: DEDUCTION

Take a roll of masking tape and mark three parallel lines on the library or hallway floor. Tape should be about 8 feet long with lines 2 or 3 feet apart depending on space available. With a washable marker (permanent markers sometimes bleed through onto carpeting), label each line with a number, one through three. Have students stand behind the first line facing the parallel lines. Call out the following instructions, emphasizing the bold print.

1. If you are wearing blue, step over line one.
2. If you are wearing blue **and** orange, step over line two.
3. If you are wearing blue **and** orange **and not** brown, step over line three.

If no one moves at the last command, substitute another color: If you are wearing blue **and** orange **and not** pink, step over line three. Declare the people standing beyond line three the winners and start over. Have all students return to the start position.

1. If your last name has an *e* in it, step over line one.
2. If your last name has an *e* **or** an *o*, step over line two.
3. If your last name has an *e* **or** an *o* **or** an *a*, step over line three.

At this point most of the class should be standing beyond line three. Declare them winners and be seated to draw deductions. On a whiteboard, you or a student can write down deductions. Create three columns, with headings of AND, OR AND NOT. At the end of the brainstorming, with nudges from you if necessary, students should have deduced that:

AND produces fewer hits or narrows the results.

OR produces more hits and broadens the results.

AND NOT reduces the number of results.

STRATEGY TWO: ONLINE TUTORIAL

Colorado State University has an online tutorial that you can project onto a screen or use in the computer lab (<http://lib.colostate.edu/tutorials/boolean.html>). The site has great, straightforward interactive graphics accessible to even the youngest students (“What has fur AND barks?” “What has scales OR feathers?”). Then it morphs into a more sophisticated mode with examples of using “AIDS” as a search term. If this site is not available, explore “Boolean tutorial” for alternatives.

To reinforce the tutorial, pull up advanced search for one of your databases and demonstrate where the Boolean terms are in the dropdown menus and how to add rows.

STRATEGY THREE: NUTRITION

Information literacy skills are now taught in context. For example, a poetry unit might include the 800s and why most other fiction is not commonly shelved in the 800s.

In library classes try the Dairy Queen Nutrition Calculator (www.dairyqueen.com/us-en/eats-and-treats/nutrition-calculator), which displays plus/minus Boolean logic. It can be used in a variety of contexts, such as health, physical education, social studies, and math.

To introduce this strategy, remove the wrapper from a cube of butter and place the butter on a dessert plate with a fork. Ask students who would like to eat the whole cube. Except for the occasional smart aleck, most will groan “Yuck!”

Show that the half-pound flame broiled burger has over 1,000 calories and more fat than the butter. Have students call out which ingredients they wish to delete to “recreate” a more healthful burger. Explain that checking the delete box corresponds to the AND NOT or MINUS Boolean operator. For example, even a quarter pound burger minus cheese, minus bacon, plus tomato, plus lettuce may not get them to their 500 calorie goal.

STRATEGY FOUR: PAPER GOOGLE

Many libraries do not have enough computers for all students. Print copies of the Google advanced search page for each student and have them fill in the blanks with words related to a homework assignment or class project. A more interesting task is to research their family surnames, geographical areas, and first names to see if any close relatives are mentioned online. Searching for ourselves online using Boolean operators often yields surprising results: jail reports, casino winnings, and marriage licenses, which students find fascinating. When students have completed the dialog boxes on paper, they are ready for their turn at the computer.

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