Venn diagrams are a useful way to visualize Boolean logic.

**AND** looks like this:

- low AND cholesterol
- sheep AND cattle AND chickens
- coins AND (francs OR pesos)

**Scenarios:**

- I need articles about low cholesterol.
- He needs information about running a farm with sheep, cattle, and chickens.
- She needs francs and pesos in coins for her collection.
**OR** looks like this:

- major OR minor
- grilled OR poached
- circle OR square

**Scenarios:**

- We would like to attend a Spring training baseball game; we don't care if it is major league or the minors--or if it is a match between the two. What games are available?
- This cookout/potluck is great! I'll eat either the grilled or poached salmon--or both if there isn't enough of one or the other.
- They don't care if the coasters we buy them are shaped like a circle or square.

- **Exclusive OR.** There is an exclusive or, but it is not used in most library databases. The majority of library researchers will never run across a database which uses the exclusive or.

**Scenario:** She is doing experiments, but she will never mix oil and water together. To find these results in one search in a library database she will need to do her search like this:

(oil not water) or (water not oil).
**NOT** looks like this:

![Venn Diagram](https://libguides.colostate.edu/howtodo/venn)

chips NOT pretzels

**Scenario:** He'll eat chips, but not if there are pretzels in the same bowl.
Real life search:

You do a search for items in the library catalog on solar houses. One of the items you find is *Solar Heating Systems for Houses: A Design Handbook for Solar Combisystems*.

This can be shown on a Venn diagram like this:
Notice that the Venn diagram has a circle for "heating." Even though you did not search for "heating" you found a record with "heating" as one of the subject terms. Most of the time when you do a search, the records you pull up have several words that you did not specifically put in your search. This is OK—and to be expected. It is also a good way to find additional terms you might want to search.

If you had searched for all three, solar and houses and heating, your Venn diagram would look like this:

![Venn Diagram](attachment:image.png)

solar AND houses AND heating

Your result set **would not include** the items in the set below:

![Venn Diagram](attachment:image.png)

(solar AND houses) NOT heating

**Source:** Colorado State University / Libraries - [https://libguides.colostate.edu/howtodo/venn](https://libguides.colostate.edu/howtodo/venn)
**Looking at the big picture:**

When you are doing advanced research, you may find yourself searching a database with a subject focus. In this case, you don't need--or want--to do keyword searches for the general topic.

For example, in *ERIC* (an educational index), if you are looking for teaching tools in textbooks as well as suggested exercises, just search "textbooks and exercises"--there is no need to type "teaching" also. However, in this case you will probably want to add something about your targeted age group--or your search results may contain many irrelevant (to you) sources.

If you are a beginning searcher, you might find it worth your while to draw Venn diagrams before doing your searches--even advanced searchers use them from time to time.