I. **Find Books**

A) Reference Materials: Encyclopedias, Dictionaries, etc.

Reference materials offer background information and broad overviews of subjects. This information is often helpful in narrowing your topic and in selecting a specific area to explore further. Reference materials such as almanacs and yearbooks also provide quick access to statistical data.

1) **Suggested Titles:**


B) **Library Catalog**: Print and E-book Collections

The online catalog offers convenient access to titles housed at all VC library locations. At the catalog screen, select “Search the Catalog” to locate titles or subjects that match your terms such as “genetic engineering.”

**E-books**: To search only for titles available electronically, from the “Search the Catalog” page, select “Online” as the desired location. Use the dropdown menu to choose your search method (author, subject terms, etc), then enter your search term (ex. biotechnology).

*Helpful feature*: While viewing a book, select the “Search” tab to bring up a search bar which will allow you to locate a word or phrase within the entire content of the book.

C) **Browse the Collection**

Physically browse the agricultural titles shelved by call number in the following Library of Congress Classification ranges:

- GE: Environmental Sciences
- GF: Human Ecology
- QH 1-278.5: Natural History
- QH 301-705.5: Biology
- QK: Botany
- QL: Zoology
- QM: Human Anatomy
- QP: Physiology
- QR: Microbiology

II. **Find Articles**

A) **Article Databases**

1. **Academic Search Complete**: This database searches numerous journals to offer full text articles on nearly all subjects including biology. Coverage includes the following journals:

   - *Journal of Biology & Life Science*
   - *Molecular Systems Biology*
   - *Animal Biology & Animal Husbandry*
   - *Biology Bulletin*
   - *Biology & Medicine*
   - *Developmental Biology*

   and over one hundred others. Select from a number of different limiters to customize your search, including cover stories, publication dates, page numbers, etc.

*Citing the articles*: The database offers formatting rules with examples for citing the articles selected. For assistance in citing the articles, select the “Help” link in the upper right corner of the screen, scroll to view “Citation Styles” in the left
menu bar, and then choose the documentation style of your choice.

2. **Access Science:** Based on the *McGraw-Hill Encyclopedia of Science & Technology*, AccessScience stays current on the most significant scientific findings and breakthroughs with updates from the annual *McGraw-Hill Yearbook of Science & Technology*. Includes:

- articles, research updates, and cross-referencing
- color images, videos, and animations
- a continually updated newsfeed from Science News
- a study center with Q&As, study guides, and essay topics

B) **In-house Magazines and Journals:** *Discover, National Geographic, and National Wildlife,* and *Scientific American* are all available in the reference section of the Wright Library, located on the Vernon campus.

### III. Suggested Websites

**PubMed:** PubMed comprises more than 22 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.

**Action Bioscience:** Provides peer-reviewed articles on issues related to biodiversity, genomics, the environment, biotechnology, evolution, new frontiers in science, and bioscience education.

**Encyclopedia of Life:** An effort to compile information about all Earth’s life-forms from books, journals, databases, websites, specimen collections, and human thoughts and observations into one location.

**Cell Biology Animation:** Provides visual representations of many materials within the human body.

**National Center for Biochemical Information:** The National Center for Biochemical Information advances science and health by providing access to biomedical and genomic information.
The Research Process

1) Select a topic that you find interesting and appropriate for the assignment.

2) Review reference sources such as subject encyclopedias for background information to help focus or narrow the search.

   For example, students interested in **antibiotics** may consult the *McGraw-Hill Encyclopedia of Science & Technology* for ideas in narrowing the focus to their use in **farm animals**.

3) Restate the topic as a question. Inquiry is at the heart of the research process, a quest to locate information which answers questions and leads researchers to a greater understanding of the topic.

   Restating the topic as a question will help in:
   - Locating information that is useful and relevant to the primary focus or thesis of your research.
   - Identifying the keywords or phrases to use in the search statement.

   Example: What problems have resulted from the prophylactic use of **antibiotics** among **farm animals**?

4) Develop a search statement by combining keywords or concepts from the research question. For example, “**antibiotics**” and “**farm animals**” were identified as keywords in the question above. By connecting one or more terms with the Boolean operator “**and**”, the researcher will retrieve only those articles that discuss both concepts, thus improving the relevancy of the search.

   Enter in search field: **antibiotics and farm animals**

5) Develop alternate search statements to improve the search results. Authors may use various terms to describe the same concept.

   For example, **farm animals** is often used in the same context as **livestock**.

   By identifying and connecting alternate terms, researchers may expand the search results. As indicated below, consider brainstorming and listing synonyms or word variations to identify alternate keywords.

<table>
<thead>
<tr>
<th>Concept 1</th>
<th>Concept 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>antibiotics</td>
<td>AND</td>
</tr>
<tr>
<td>antibacterial drugs</td>
<td>AND</td>
</tr>
<tr>
<td>antimicrobial drugs</td>
<td>AND</td>
</tr>
<tr>
<td>anti-infective agent</td>
<td>AND</td>
</tr>
</tbody>
</table>
6) Evaluate information for objectivity and reliability.

7) Cite the information borrowed from other authors or informational sources. Careful documentation will ensure that credit is given with no intention to plagiarize or claim ownership of information belonging to other researchers. For explanations and examples, visit the Duke University Library’s Citation page.

Questions?

Email: librarian@vernoncollege.edu

Chat: “Ask the Librarian” link on the Library homepage.

Phone: 940-552-6291 ext: 2222