Types of Information Sources

Information can come from virtually anywhere: personal experiences, books, articles, expert opinions, encyclopedias, the Web. The type of information needed will change depending on its application.
Individuals generate information on a daily basis as they go about their work. In academic institutions, staff and students consult various sources of information. The choice of the source to consulted is usually determined by the type of information sought. The three types of information sources are:

- **Primary**
- **Secondary**
- **Tertiary**
- **Primary Sources**

Primary sources are original materials on which other research studies are based. Primary sources report a discovery or share new information [2]; they present first-hand accounts and information relevant to an event [3, 4a and 5].
They present information in its original form, not interpreted or condensed or evaluated by other writers [2]. They are usually evidence or accounts of the events, practices, or conditions being researched [4a, 6] and created by a person who directly experienced that event [7]. Primary sources are the first formal appearance of results in print or electronic formats [3].   Examples of primary sources are: eyewitness accounts, journalistic reports, financial reports, government documents, archeological and biological evidence, court records, ephemerals (posters, handbills), literary manuscript and minutes of meetings etc [3,4b and 6].
The definition of a primary source may vary depending upon the discipline or context.   A diary would be a primary source because it is written directly by the individual writing in the diary [7].   Interviews are primary sources because the individual talks about the topic directly from what he/she knows about it. Other examples are:

- Video of the inauguration of the first female president in Brazil
- A scientific publication reporting the development of a new medication to manage patients with sickle-cell anemia

Print	Electronic	Others
- Diaries - Letters - Speeches - Patents - Photographs - Newspaper articles - Journal articles - Theses and dissertations - Survey Research (e.g., market surveys, public opinion polls) - Proceedings of Meetings, conferences and symposia - Original Documents (i.e. birth certificates, wills, marriage licenses, trial transcripts) - Records of organizations, government agencies (e.g. annual reports, treaties, constitutions, government documents)	• Internet • E-mail communication • Communication in Listservs • Interviews (e.g., telephone, e-mail) • Video recordings (e.g. television programs) • Audio recordings (e.g. radio programs) • Web sites • Communications through social networking applications (e.g. Face book, blogs, RSS, U-tube etc.)	• Artifacts (e.g. coins, plant specimens, fossils, furniture, tools, clothing, all from the time under study) • Works of art, architecture, literature, and music (e.g., paintings, sculptures, musical scores, buildings, novels, poems).

A newspaper article reporting the bomb blast in Abuja, Nigeria, during the celebration of the country's 50th Independent Anniversary.

Note: The types of information that can be considered a primary source may vary depending on the subject discipline, and how the material is being used.   **For example:**
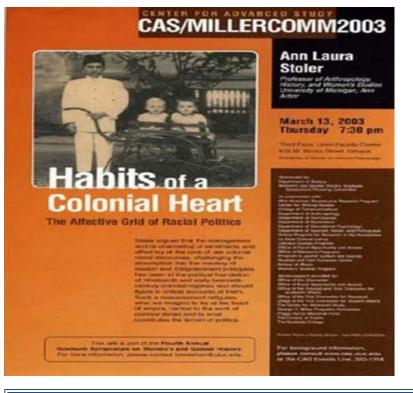
- A research article in a peer-reviewed journal that proved the effectiveness of a newly developed vaccine for the prevention of HIV virus would be a primary source, however,

- A magazine article that reports the development of a new vaccine for the prevention of HIV infection would be regarded as a primary source.

- Information in a magazine article that reports a study of how compact fluorescent light bulbs are presented in the popular media could be considered a primary source [3].

Grey literature

Grey literature is also important primary source material(s) not available through the usual systems of publication (e.g. books or periodicals) and distribution [11]. Examples are: Conference proceedings, data exchange, environmental impact statements, oral presentations, market research reports, online documents, oral presentations and working papers

Table 2: List of primary sources of information in various formats

This poster advertises a lecture scheduled for March 13, 2003 (Courtesy University of Illinois Library)

Photograph of PubMed/HINARI training by librarians at E. Latunde Odeku Medical Library, College of Medicine, University of Ibadan, Nigeria, for resident doctors at the University College Hospital

Secondary Sources

A secondary source of information is one that was created by someone who *didnot*have first-hand experience or did not participate in the events or conditions being researched [4]. They are generally accounts written after the fact with the benefit of hindsight. Secondary sources describe, analyze, interpret, evaluate, comment on and discuss the evidence provided by primary sources [2]. Secondary sources are works that are one step removed from the original event or experience that provide criticism, interpretation or evaluation of primary sources [7].   Secondary sources are not evidence, but rather commentary on and discussion of evidence. A secondary data is one that has been collected by individuals or agencies for purposes other than those of a particular research study.

However, what some define as a secondary source, others define as a tertiary source. For example, if a magazine writer wrote about the speech Nelson Mandela delivered when he was inaugurated President of South Africa in 1990, it will be a secondary source. The information is not original, but an analysis of the speech. If a government department has conducted a survey of, say, family food expenditures, then, a food manufacturer might use this data in the organization's evaluations of the total potential market for a new product [8]. Similarly, statistics prepared by a pharmaceutical company on the production of a particular drug will prove useful to a host of people and organizations, including those marketing the drug.

For secondary sources, often the best are those that have been published most recently [4b]. If you use a secondary source that was published decades ago, it is important to know what subsequent scholars have written on the topic and what criticism they have made about the earlier work or its approach to the topic. The definition of a secondary source may vary depending upon the discipline or context.   Most often how a source is used determines whether it is a primary or secondary source [9]. For the purposes of a historical research project, secondary sources are generally scholarly books and articles. Also included in this category would be reference sources such as encyclopedias (also considered tertiary). Other examples of secondary sources are:

- Bibliographies (also considered tertiary);
- Biographical works
- Commentaries
- Criticisms
- Dictionaries
- Histories
- Journal articles (depending on the discipline, these can be primary)
- Magazine and newspaper articles (this distinction varies by discipline)
- Monographs, other than fiction and autobiography
- Textbooks (also considered tertiary)
- Websites (also considered primary)

▪ Tertiary sources

Definition: Tertiary sources consist of information which is a distillation and collection of primary and secondary sources [3]. Generally, tertiary sources are not considered to be acceptable material on which to base academic research [6]. Tertiary sources are usually not credited to a particular author. They are intended only to provide an overview of what the topic includes, its basic terminology, and often references for further reading. Some reference materials and textbooks are considered tertiary sources when their chief purpose is to list, summarize or simply repackage ideas or other information. Examples of tertiary sources include dictionaries and encyclopedias, *Wikipedia* and similar user-contributed online 'encyclopedias' and reference materials, as well as various digests (including the *Reader's Digest*) and schoolbooks [6]. In a nutshell, tertiary sources are:

- works which list primary and secondary resources in a specific subject area
- works which index, organize and compile citations to, and show secondary (and sometimes primary) sources can be used.
- Materials in which the information from secondary sources has been "digested" - reformatted and condensed, to put it into a convenient, easy-to-read form [10].
- Sources which are once removed in time from secondary sources

Table 3: General classification of selected primary, secondary and tertiary sources of information

Primary sources	Secondary sources	Tertiary sources
- Autobiographies - Correspondence: email, letters - Descriptions of travel - Diaries, - Eyewitnesses - Oral histories - Literary works - Interviews - Personal narratives - First-hand newspaper and magazine accounts of events - Legal cases, treaties - Statistics, surveys, opinion polls, - scientific data, transcripts - Journal articles - Records of organizations and government agencies - Original works of literature, art or music - Cartoons, postcards, posters Map, paintings, photographs, films	- Biographies, Encyclopedias, dictionaries, handbooks - Textbooks & monographs on a topic - literary criticism & interpretation - history & historical criticism - political analyses - reviews of law and legislation - essays on morals and ethics - analyses of social policy - study and teaching material - Articles, such as literature reviews, - Commentaries, research articles in all subject disciplines - Criticism of works of literature, art and music	- Chronologies - Classifications - Dictionaries - Encyclopedias - Directories - Guidebooks and manuals - Population registers statistics - Fact books - Abstracts - Indexes - Bibliographies - Manuals/Guide books

- **Difference between Primary, Secondary and Tertiary Sources of Information**

Primary sources of information are original manuscripts, documents or records used in preparing a published or unpublished work. For example, an article in a peer reviewed journal that discussed the development of a new vaccine for the prevention of HIV infection will be considered a primary source. Secondary sources are published or unpublished works that rely on primary source(s). A commentary by a magazine reporter based on the peer reviewed journal article on the newly invented vaccine for HIV prevention, would be a secondary source. Tertiary sources are published or unpublished works that are based on secondary sources. Tertiary sources are index to primary sources. Science Citation Index would be considered a tertiary source. It is sometimes difficult to differentiate between primary, secondary and tertiary sources. The following publication details of the information adapted from University of Wisconsin libraries [12] can be helpful in determining whether a material is primary, secondary or tertiary source:

- **Timing of the event recorded**--If the article was composed close to the time of the event recorded, chances are it is primary material. For instance, a letter written by a soldier during the Second World War is primary material, as is an article written in the newspaper or a soldier's letter home during the Liberian Civil War. However, an article written analyzing the results of the battle during the Liberian Civil War is secondary material.

- **Rhetorical aim of the written item**--Often, an item that is written with a persuasive, or analytical aim is secondary material. These materials have digested and interpreted the event, rather than reported on it

- **Context of the researching scholar**--Primary materials for a critic studying the literature of the Civil War are different from primary materials for a historian studying Civil War prisons. The critic's primary materials are the poems, stories, and films of the era. The research scientist's primary materials would be the diaries and writings of the prisoners.

Your information needs and requirements will determine what source(s) you need to consult in order to meet that need. For example,

If you need:	You might try:
Current information about the political situation in your country or adisaster that has happened yesterday somewhere around the world	Newspapers and the Web

Scholarly articles that discussed research about using cassava for baking or cyanides in cassava	Journals and books (and e-journals or e- books on the Web)
Popular articles about scams on the Internet To search for scholarly articles on a topic such as malaria or HIV and tuberculosis	Magazines (and perhaps e-magazines on the Web) Databases (PubMed, Scopus, Web of Knowledge, EMBASE African Index Medicus (AIM)
General information such as definitions, contacts , Institutions etc	Search engines such as Google, Yahoo etc

Exercises
1. What are primary, secondary and tertiary sources of information?
2. Differentiate between primary, secondary and tertiary sources of information.
2. List 6 primary, secondary and tertiary sources of information.