Information Literacy

What is information?

Knowledge communicated or received concerning a particular fact or circumstance.

Also:

Knowledge gained through study, communication, research, instruction, etc.; factual data.

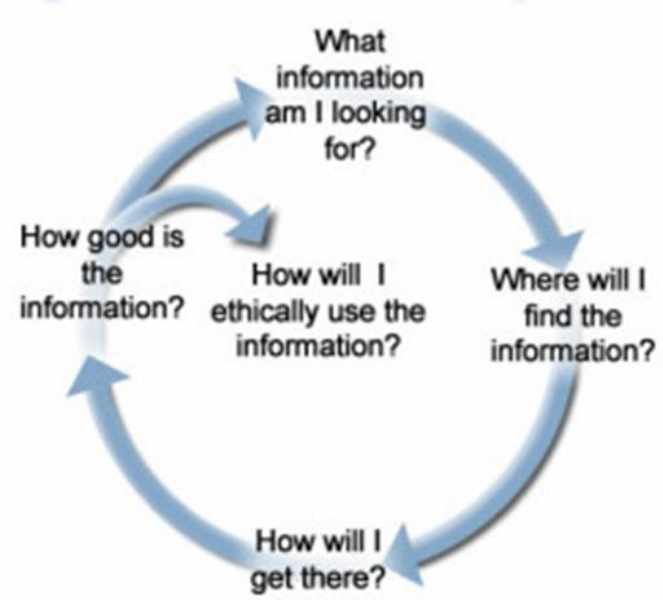
We are living in exponential times. In 2012 there were 31 BILLION searches on Google every month! In 2006 that number was 2.7 billion. The first commercial text message was sent in December 1992. Today the number of text messages sent each day exceeds the population of the planet! The number of Internet devices in 1984 was 1,000; in 1992 it was 1,000,000 and in 2008 it was 1,000,000,000! There are 540,000 words in the English language – about five times as many as in Shakespeare's time. One week's worth of the New York Times contains as much information as a person would have encountered in a lifetime in the 18th century. It was estimated that 4 exabytes (4x10^19) of unique information would be generated in 2012. That is more than the previous 5,000 years. In 2012 the amount of new technical information was doubling every two years. For students starting a new technical degree this means that half of what they learned in their first year will be outdated by their third year. So, what does this mean for you?[i]

So, what is *Information Literacy*?

"In the education sector, Information Literacy has been defined as an understanding and set of abilities enabling individuals to recognize when information is needed and to have the capacity to locate, evaluate and use effectively the needed information."

CAUL – Council of Australian University Librarians

We are going to use this graphic and the official standards for Information Literacy from the ALA[ii] to consider examples of how to develop your Information Literacy:



Let's assume that you want to conduct some research on the topic, The Environment. Here is how you can apply these five standards of Information Literacy.

Standard One - The information literate student determines the nature and extent of the information needed.

Ask yourself these questions: "What am I supposed to do?" or "What problem am I trying to solve?"

Now explore general information sources to increase your familiarity with the topic. You will quickly realize how the quote above, "Getting information off the Internet is like drinking from a fire hydrant!" is an accurate description. You will find an enormous amount of information on any topic.

The next step is to define or modify the information needed in order to make the job more manageable and focused. Let's assume that you have narrowed your topic to Endangered Species. In this example, you've always found the octopus to be an interesting creature, so you decide to find out whether the octopus is an endangered species. If it is endangered you want to find out why and whether there is anything you can do to help prevent them from going extinct.

Standard Two - The information literate student accesses needed information effectively and efficiently.

Ask yourself, "Where am I likely to find the answer?", "Which sources are best for answering the question or solving the problem?", and "What is the most appropriate method of accessing the information I need?"

For information gathering in general, it may be that a laboratory experiment, a simulation or fieldwork is the best method to use. You can conduct primary source research online, at the library or at other archives such as museums. You may also gather information by interviewing experts or by conducting surveys. Community resources may include professional organizations, practitioners and universities.[iii]

Where will you search for information for your *Octopus as Endangered Species* topic? A good starting place is the Internet, where you can begin by Googling "the octopus as endangered species". You will then have a list of web pages dedicated to the octopus as an endangered species.

Think about other possible resources. Are there universities and research institutes where you may find experts on the octopus? Are there any aquariums you can visit? The Sea Life

Aquarium in Auckland, NZ has an octopus named Rambo that takes pictures of her visitors with her underwater camera![iv] Are there government agencies that provide information you can use? You discover that there is a renowned expert, Dr. Mark Norman, a marine biologist and senior curator at Museum Victoria in Australia. An interview with him would be an excellent resource, either in person or via Skype or email. He can not only discuss the octopus, he can recommend other excellent resources, including other experts. You are now on your way!

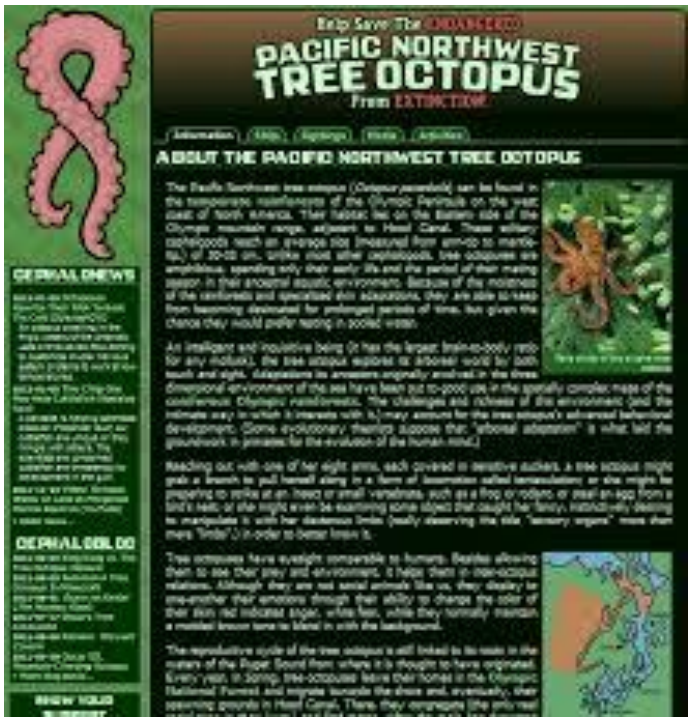
Standard Three - The information literate student evaluates information and its sources critically, then incorporate it into their current knowledge on the topic.

[v]Many students believe that if they find information on the Internet then it must be true. Unfortunately, much of the "information" posted on the Internet is faulty if not blatantly deceptive. Be on the alert for bias. You will need to practice your critical thinking skills.

Ask yourself these questions when determining whether a web site is valid and reliable:

1. Who wrote this page, and are they an expert?
2. Is there a bio on the author, and how can I find out more about them?
3. What does the author say is the purpose of the site?
4. What information is included, and is it different from other sites?
5. When was this site created, and when was it last updated?

Usually web sites with the URL ending in .edu or .gov are more dependable. Frequently, the first 10 web sites that show up on your Google search are dependable. The web sites listed in a search are ranked by how often the sites are visited, which can be an indicator of reliability. But, that is not always the case! For example, when you Googled "the octopus as an endangered species" the number one, top ranked site was The Northwest Pacific Tree Octopus.



Visit the site here: http://zapatopi.net/treeoctopus/[vi]

This web site is an excellent example of what is known as a "hoax"[vii] web site. Visit the site. What is it about this web site that makes it seem to be authentic? Does it have a professional appearance? Is the author named? Is there contact information for the author? Yes. Notice that (in the left column) the site includes links to very recent articles about this creature. It has images of the tree octopus! Are there other web sites that also list this creature? What do you find on the web site that tells you it is a fake?

Standard Four - The information literate student uses information effectively to accomplish a specific purpose.

You decided that the tree octopus web site is definitely not a resource you want to use.

However, you have discovered many other excellent web sites which are reliable. Now is the time to organize your information and then present it. You may want to create a web site, make a video, create a PPT to present to a group or build a database for others to use.

It depends upon:

- Your audience (e.g., classmates, President)
- The purpose of your project (e.g., persuade, prove a hypothesis)
- The type of information found (e.g., visual, statistical)

Here is an example of presenting information. This web site was created by Katie Lynn Koehn, a student at the University of Wisconsin at La Crosse. She conducted research on the Blue-Ringed Octopus[viii].

Her topic is well-researched and organized, including a map of where these octopuses can be found in Australia and an excellent list of her References, including image credits.

Standard Five - The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Whatever the product, students need to comply with copyright laws and issues of intellectual property, giving credit where credit is due. Go to CopyrightKids.org to learn more.

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[i] *Did You Know?* A video created in 2012 by educators Karl Fisch and Scott McLeod. Watch it for many more interesting bits of ***information*** about the world we are living in today. https://www.youtube.com/watch?v=C1LiJuUGpyY

[iiii] ALA, the American Library Association, Standards for Information Literacy, http://www.ala.org/acrl/standards/informationliteracycompetency

[iii] Image, Environmental Engineering Students in Lab, Drexel University http://www.drexel.edu/cae/

[iv] Kelly Tarlton Sea Life Aquarium, Auckland, NZ http://www.ke llytarltons.co.nz/visitor-info/latest-news/octographer/

[v] Image/Cartoon, Chris Pirillo, https://www.flickr.com/photos/lockergnome/500471584

[vi] Pacific Northwest Tree Octopus home page (image) http://zapatopi.net/treeoctopus/

[vii] Hoax web sites to practice web site evaluation, http://teachbytes.com/2012/11/01/test-website-evaluation-with-10-hilarious-hoax-sites/

[viii] Blue-Ringed Octopus web site by Katie Koehn, https://bioweb.uwlax.edu/bio203/s2013/koehn_kate/index.htm