

A STUDENTS GUIDE TO DOING BASIC RESEARCH

What is basic research?

Research is asking a question and then finding the information to answer it. There's nothing mysterious about it: it's a skill that anyone can learn. And it's one of the most important skills you can have.

Basic research is what most of us do in school or at work: it means looking for answers that someone else has already found or looking for information that will let us decide what the answer is. An example is looking in an encyclopedia or in reference books to find out where corn was first grown.

The other kind of research is scientific research, which involves conducting experiments or doing studies to answer a question.

The secret to doing research well is to do it carefully and follow a few basic rules. There are five steps to follow for basic research.

THE FIVE STEPS TO DOING RESEARCH

STEP 1: Select a topic

The topic is what you're asking a question about. It can be a particular animal, or a group of animals, for instance. Or it can be a kind of animal behavior or how animals can live in a particular place -- whatever interests you.

Make sure that you don't choose too large a topic. If tigers are what you're interested in, don't make animals your topic, or cats. Make it tigers.

STEP 2: Identify your research question

This is the most important step, because if you don't ask your question carefully, you may not be able to find the answer. If you're wondering why tigers have stripes, don't ask: "Why are animals colored like they are?" That's too general: there are many kinds of animals, so there are many possible answers to your question. Try to narrow your question down so that you can find one answer to it: ask, "Why do tigers have stripes?"

STEP 3: Decide where to look for the answer

There are so many places to look for information that it can be confusing. Start with your public or school library. Encyclopedias are a good first stop. There are general encyclopedias, like the Encyclopedia Britannica, and specialized ones, like Grzimek's Animal Life Encyclopedia, which has very detailed information about most of the



animals in the world. (In case you're wondering, Grzimek is pronounced Chee mek.) Some encyclopedias are available on CD-ROM, such as the Eyewitness Encyclopedia of Nature.

There are also many good books about animals, written at different levels, as well as special magazines and other resources. Some of the best magazines are Wildlife Conservation, National Geographic (and National Geographic World), National Wildlife, International Wildlife, Ranger Rick, Dragonfly, and Natural History.

A good tip: the best resource in the library is the reference librarian. Reference librarians are there to help people find things, and they know everything in the library. They can direct you to the right magazines and show you where to look for books. However, they are also usually overworked, so try to help them by telling them exactly what question you're trying to answer and listening carefully to their suggestions. And always thank them for their help.

If you have access to the Internet, you may want to use it as a resource. Remember that you must be very careful about using information you find there. Anyone can write anything and put it on the Internet, and much of what you can read there is wrong. Try to get your information from web sites sponsored by reliable organizations, universities, government agencies or libraries. If you do use the Internet, one way to start is with a search engine, which will go out to many sites and find ones that may have the information you want. Your teacher or reference librarian can direct you to some good search engines or web sites.

Any time you are doing research, you should be asking: Is this information reliable? Suppose you are asking a question about elephants' trunks. You may come across a story by Rudyard Kipling, called "How the Elephant Got Its Trunk". It's a wonderful story, but you will see right away that it is just a story, not a real explanation of how elephants got their trunks. Look carefully at where your information came from: is it based on real data, such as scientific studies? Is it written by an expert? Or is it just someone's opinion?

One good rule of thumb: if you don't know the source of a fact, you should confirm it by finding the same fact in at least three different places.

As you become a more experienced researcher, you will learn how to tell good information from bad. In the meantime, don't hesitate to ask your teacher or librarian.

STEP 4: Collecting Data

As you do your research, you will probably find much information that is interesting, but doesn't really help answer your question. Try not to get sidetracked. Keep careful notes: write down the facts that help answer your question and where you found them. It's very



important to document the sources of your information. If it's a book, write down the title and author, as well as the page numbers where you got your information. If it's a magazine, list the name and date of the magazine, the title of the article, and the author's name. For encyclopedias and other reference books, give the main title, such as Encyclopedia Britannica, and the topic you looked under. If it's a web site, give the URL, or web address, the name of the site, if it has one, and the date on which you got your information.

Collect all the information that may help you answer your question.

STEP 5: Decide the Answer

Once you have done your research, the answer may be obvious to you. Sometimes, though, there isn't a clear answer. Even experts may disagree, especially if there aren't enough data to give a definite answer. In that case, you should explain what the possible answers are and what information there is to support them. If you think that the information supports one answer more strongly than another, say so and explain why. Remember to list all the sources for your information.

Congratulations!! You're a researcher.