**Name:**

**Marine Science Pre-Research Assignment:**

Read the following pages on the introduction to research.

After reading complete the following two questions on a separate sheet of paper:

1. Write down three questions you still have about how to do research or how to develop a research question.
2. Practice developing a research question for one of the following these three topics.

Topic 1- Technology, Topic 2- Music, or Topic 3- Food

**An Introduction to Research**

**What is research?**

Research is a systematic inquiry that investigates hypotheses, suggests new interpretations of data or texts, and poses new questions for future research to explore.

**Why do we care about research?**

Without research, much of the information we have available to us today would cease to exist. Without research we wouldn’t know about various health hazards, environmental dangerous behaviors, or a general understanding about the world around us. In addition much of the technology such as computers or smart phones that we use on a daily basis would not exist as well.

Research is also very important to you, because it helps you develop skills that are necessary for further studies in college or makes you more prepared to solve real problems in the workforce and helps you make a discovery about something that interests you. Some of these skills that research helps you develop are: gathering background information, creating/performing independently designed experiments, critical thinking, writing research papers, presenting to an audience, and collaborating with others.

**How do you decide what to do research on?**

First, you will need to do background research to become knowledgeable about the general subject of research. When doing this general background research see what experiments have been done before, or what topics interest you. Once you have found a topic within the broad subject, you can further research that topic to find what experiments have been done, how they have been done, as well as other general information. The purpose of this step in the Research Process is to help you further refine your research topic. In order to do good research, you must have a clear understanding of what issues are important and which questions relate to the topic you wish to explore.

**How do you create a good research question?**

First off, what is a research question? A research question is a clear, focused question around which you center your research and can be answered by performing a controlled experiment. You should ask a question about an issue that you are genuinely curious about.

**Steps in Developing an Good Research Question**

1. Do the background reading as discussed above to understand the issues related to your topic. There are a variety of websites from your past web quests that you could use to look up information, there are several encyclopedias/databases (Proquest-Ocean Abstracts, Web of Science, BioOne, BIOSIS, EBSCO, Zoological Record, http://marinebio.org/search/), and you can always do a general internet search as long as you use scholarly articles [People Magazine, The Onion, Buzz feed are NOT a scholarly source, however Time or National Geographic ARE scholarly sources].

2. What exactly do you need or want to know about your topic? Ask yourself questions, because this research should be something that you are willing and want to investigate.

3. Your Research Question should only deal with ONE topic, but should incorporate at least TWO major issues or concepts. For example: What are the hereditary factors associated with schizophrenia? Your major topic is Schizophrenia, but your question is dealing with the issue of: schizophrenia and heredity.

4. Your Question should be open-ended, using WHAT, WHY or HOW.

5. Is your Question too broad, too narrow or OK?

You want to make sure that your question is not too general because you will have too much information to research as well as not too narrow because then you may not have enough to research or to experiment on.

The following examples of research questions are from the State University of New York (http://www.esc.edu/online-writing-center/exercise-room/research-question-broad-or-narrow/):

Question A: What marketing strategies does the Coca-Cola company currently apply This question is ok. Explanation: Your research to answer this question may include observation of print, television and radio advertisements as well as research into various current marketing theories and strategies. Both types of research are "do-able," and the question is focused enough to yield a fully developed research paper. Question B: What percentage of commercial airline crashes was traced to negligent maintenance during the 10 years immediately preceding and following deregulation? This question is too narrow. Explanation: It can be answered with simple percentages and cannot be developed into a full research paper. Question C: What marketing strategies has the Coca-Cola Company used in the past? This question is too broad. Explanation: "The past" covers a lot of time, especially since the Coca-Cola Company was incorporated in 1919.

\*This is one of the hardest parts of creating a good research question so feel free to look at the more of these examples provided on this website (http://www.esc.edu/online-writing-center/exercise-room/research-question-broad-or-narrow/):

6. Can this question be answered by a controlled experiment and does this question provide you with enough information (academic journals, magazines, books, government documents, professional association websites?) you need to generate a hypothesis (predict an answer) for your research question.

[Sources for this Introduction to Research:

* <http://www.district196.org/rhs/library/formulatequestion.cfm>
* <http://www.fcps.edu/CentrevilleHS/programs/writing_center/getting_started/how_to_write_a_research_question2.html>
* <http://urp.ucsd.edu/for-students/what-is-research.html>
* <http://www.esc.edu/online-writing-center/exercise-room/research-question-broad-or-narrow/>]