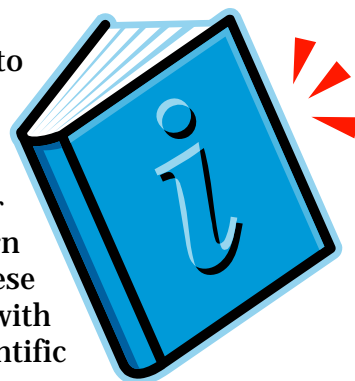


## Developing a Scientific Experiment

One of the major objectives of 9<sup>th</sup> Grade Lab Science is for students to gain an understanding of the scientific process. What do scientists do? How do they investigate questions? By the end of this course you will develop the ability to make detailed observations and to ask thoughtful, testable questions. You will practice basing your hypotheses on valid research and observations. And, you will learn to confidently design a controlled scientific experiment. All of these skills are integral to the scientific process and the journey begins with this major project: development of your own, unique scientific experiment.



A good experiment involves a person on a journey of discovery, driven by curiosity. So, what are you curious about? Is there a problem that you would like to try and solve? What plant, animal, sport, food, medical issue, hobby interests you? What issues and problems are important to society? What problems are currently in the news?

A strong project doesn't begin with a quick search on science fair ideas. It begins with research on current science issues and problems within your community and world.

### Part I: What topics are you interested in researching?

*Underline or highlight five of the topics below. You may also add an additional topic – ask your teacher.*

BIOLOGY

PHYSICS

EARTH PROCESSES

ASTRONOMY

TECHNOLOGY

MEDICINE/HEALTH

CHEMISTRY

GENETICS

MATH

CLIMATE

MIND/BRAIN

ANIMALS

PLANTS

MATTER

ENERGY

FOSSILS

TIME

MARINE BIOLOGY

ENVIRONMENT

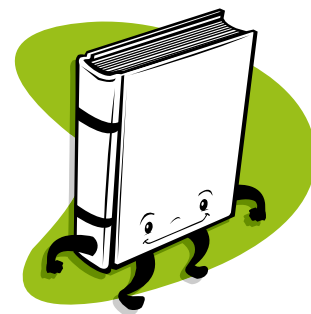
ENGINEERING

ANIMAL BEHAVIOR

BACTERIA

VIRUSES/PRIONS

EVOLUTION



## **Part II: What problems or questions are currently being studied in your areas of interest?**

*You will use several science news web-sites to identify at least two problems being studied in each of your five areas of interest (ten total). Remember, this is just the beginning of the design process: **identifying problems.***

*Use your class notebook to complete this assignment – gathering the information below for each of the news articles that you review.*

### **1. Article Title:**

**A. Web-site:**

**B. Source (Where will it or has it been published?):**

**C. Major contributing scientist(s):**

**D. Investigative Question or Problem:**

**E. Conclusion/Major Findings of the Study:**

## **Part III: Helpful Web-sites**

1. Science Daily
2. Science News
3. Science in the Headlines
4. Scientific American
5. New Scientist Magazine
6. Discover Magazine
7. Nature.com
8. Ocean World
9. NASA

*Your next step will be to focus on one particular problem, and to find background information on that topic. The more you know about a topic or problem the easier it will be to ask a relevant and interesting question. If you've really looked into a topic, and asked questions of current researchers, then you will be better able to identify questions that have yet to be asked or that need more research.*