

Biology Independent Study Project

Due date:

Project theme: This is a 12 week research project on a topic in biology which can include plants, animals, microorganisms, the environment, animal behavior, biotechnology or other topics that involve the study of living things.

Step1. Project mode and topic selection: You have one week to pick a topic, write a title and description. Plan to keep a journal of your work on the project. It will come in handy for data collection, and proof that you are making progress on your research. It will be collected every 3 weeks. Plan to set up your research project in class, not at home. At home projects are not allowed unless you have an advisor- supervisor. If you are totally stuck then ask for suggestions.

Step 2. Research and design phase: This is the part where you must find out in detail about your topic through research in books, magazines, people, internet or whatever it takes for you to become an expert on your topic. Keep careful records of all the information and reference all the places you find information. All this goes in your journal. You will be required to hand in this information. **You must write a proposal and have it approved before you can begin.**

Step 3. The "do it" phase: this is where you set up your experimental variables, and collect data. Keep a digital record of your experimental progress, by taking digital pictures of each significant stage of the experiment. If your data collection is quick enough, you can recheck your experiment to see if you get the same data.

Step 4. The presentation stage: This is the pay off. This is the reward you get for all your hard work! Although you will be graded on individual steps(20%), this step is where 80% of your grade is accessed. You must help others understand and learn about what you have spent so much time on, using the most creative innovative techniques you can think of.

You are responsible to hand in proof of your work at the following stages and approximate dates:

Within 2 weeks : A one page title and description of your topic, which includes: what you will do and why this topic interests you; what is the science behind your project? what do you intend to show in your 3 months of research? Your description must include what you intend to find out; what do you think might happen; how does your topic relate to other life processes or practical applications in the real world.

Before 3 weeks: Hand in preliminary bibliography and your journal to show your progress. Journal shown contain 4-6 dated entries, of research, data, and reflections.

By week 5: Update to show a progress report on your project. Hand in your journal and a list of any problems or question you are having trouble finding out about your topic. You should show that you are 50% completed. You should have digital pictures of your project.

Week 6: Hand in your journal with 10 -12 dated entries of research, data and reflections.

By week 9: Write an abstract of your project stating what you are doing, what you intend to show and what significance your project has. Hand in your journal and pictures you have of your project.

By week 12: Be prepared to give your presentation. Make a trifold exhibit for display of your project. The display must have background, experimental design, procedure/ materials, results or data, conclusions, attractive display.

Present your project in the Science and Engineering Expo. Register at www.nhsee.org

Advantages of presenting in the expo:

A chance to show your scientific creativity.

Awards on the school and state levels.

Achievement that shows on your school records, great for college acceptance.

A chance to practice real science.

A chance to go to the state competition.

Overall Grading:

Timely and periodic updates, including your journal: 20%

Presentation skills: 10 %

Individual knowledge and content shown on this topic: 20%

Experimental design, controls, data collection: 20%

Visual display on the project: 20%

References in proper format: 10%

Ideas for biology projects:

Visit these web sites for ideas:

<http://www.isd77.k12.mn.us/resources/cf/SciProjInter.html>

[http://school.discovery.com/sciencefaircentral/scifairstudio/handbook/scientificmethod.ht](http://school.discovery.com/sciencefaircentral/scifairstudio/handbook/scientificmethod.html)

[ml](http://school.discovery.com/sciencefaircentral/scifairstudio/handbook/scientificmethod.html)

<http://www.sciencebuddies.org/>