# Assignment Summary

For this assignment, you will conduct research on evolutionary history. Your research should focus on a single, broad group, such as aquatic mammals. For each source you find, identify the evidence presented for evolution. You will then evaluate the author’s claims in the form of an essay. You will also make a time line to represent the evolutionary history of the group you researched.

Background Information

Evolution is a theory that focuses on observing how populations of organisms evolve or change over time, from one generation to the next. These generational changes are influenced by both environmental changes and genetic variations. Genetic variations can come from gene mutations that alter either gene activity or how a protein functions. Because of these alterations, a change in the trait of an organism can occur. If the trait is advantageous, that means it helps an individual adapt, survive, and reproduce, especially if an environment is changing. The traits that are passed down to the next generation are called heritable traits. Only heritable traits lead to evolution.

Materials

* Computer with internet access and word-processing software
* Sheets of drawing paper
* Drawing supplies, such as colored pencils and markers

# Assignment Instructions

For this project, you are expected to submit two things:

1. An essay including the details outlined in step 7
2. An evolutionary time line

**Step 1: Prepare for the project.**

1. Read through the guide before you begin so you know the expectations for this project.
2. If there is anything that is not clear to you, be sure to ask your teacher.

**Step 2: Locate evolutionary research articles.**

1. Choose a subgroup to research. Examples include aquatic plants, arachnids, or birds of prey.
2. Locate three reliable evolutionary research articles focused on your selected group. Make sure these articles present enough scientific data and have methods outlined. Try to use articles that present data and information from a variety of scientific disciplines.

**Step 3: Identify evidence of evolution.**

1. For each source you locate, identify the evidence of evolution presented. Record this evidence in a way that you can easily access to write your essay.

**Step 4: Validate the claim made.**

1. For each source you locate, evaluate the validity of the author’s claim(s). Use the scientific data presented in the article to help justify your argument.

**Step 5: Create an evolutionary time line.**

1. Using reliable evidence, create an evolutionary time line for the group you researched from the time this group first appeared to the present day.

**Step 6: Draft a proposal for a new investigation.**

1. Write a statement for a new investigation into the evolution of the group you researched.

**Step 7: Write an essay based on your research.**

a) Include the following parts in your essay:

1) An introductory paragraph about the group you studied

2) A paragraph detailing each source, including the evidence presented and an evaluation of the author’s claims

3) A section about the proposed new investigation, including a purpose statement, hypothesis, method to evaluate the hypothesis, and summary of the types of data you would need to collect

4) A concluding paragraph that includes a prediction for the investigation

5) A list of your resources

**Step 8: Evaluate your project using this checklist.**

If you can check each box below, you are ready to submit your project.

* Did you choose a group to research?
* Did you find three articles that discuss the evolutionary history of the group?
* Did you identify the evidence for evolution within the article?
* Did you evaluate each author’s claim?
* Did you create an evolutionary time line of the group you researched?
* Did you write an essay that includes all your researched information?
* Does your essay include a new investigation into the evolution of your group?
* Does your proposal include a purpose statement, hypothesis, methods section, and summary of data that will be collected?
* Does your essay include a list of resources?

**Step 9: Revise and submit your project.**

1. If you were unable to check off all of the requirements on the checklist, go back and make sure that your project is complete. Save your project before submitting it.
2. Turn in your evolutionary time line and proposal for a new investigation to your teacher. Be sure that your name is included.
3. Congratulations! You have completed your project.