



Ocean Acidification Final Project Guidelines

Objectives

- Define ocean acidification.
- Explain how the addition of carbon dioxide to seawater lowers pH.
- Describe using chemical equations how adding carbon dioxide to seawater impacts ocean chemistry.
- Describe how OA impacts aquatic organisms, plant life, and humans.
- Identify potential solutions to OA and their impacts and feasibility.
- Report on a current topic in chemistry. Assess the pros and cons of this topic and its potential benefit/impact on the environment.
- Complete analysis of scientific findings on the chemistry of the current topic and explain any sources of possible bias and uncertainty found.
- Examine and analyze this selected study for underlying assumptions and/or bias on the researcher's part, suggest an alternative perspective that disputes it, and/or explains the issue, solution, or finding from at least two points of view.
- Discuss the impact on human health and the environment from the current topic.
- Explain, using supporting information, the student's opinion on the current topic, validity of the research conducted, and any long-term implications for the topic.
- Discuss the results of an experiment in oral and written formats, including predictions, graphs, and calculations.
- Perform an in-depth analysis of an experiment, including statistical error analysis, explaining the sources of error (% error) and uncertainty.
- Communicate lab procedures, observations, and results in the form of a laboratory notebook, written reports, and verbal presentations effectively.
- Interpret and analyze qualitative observations and quantitative results, incorporating graphs and tables as appropriate.
- Determine if a source is reliable.
- Evaluate a source for bias.
- Read scientific journal articles.

Introduction

You are required to complete a vlog or blog on ocean acidification (OA) as part of this course. Please see your semester schedule for the due date for this project. In addition, Brightspace provides a rubric for this project under Assessments → Rubrics → Ocean Acidification Final Project Rubric.

We will conduct this project in parts over the semester. This work will include reviewing scientific literature, incorporating lecture topics, and a final project on the background research and data-supported conclusions regarding ocean acidification.

You can choose to work in pairs or alone on this project. If you work with a classmate, you and your partner are expected to work equitably on this project to complete it. Please see me if there is no equitable sharing of work on this project. The maximum group size is 2. I will not allow groups of 3 on this project.

Whether working alone or with someone, you will need to register for a "group" in Brightspace for this project. To do this, go into Brightspace and click on *Communications* at the top of the screen. Select *Groups* from the menu that appears (Figure 1).

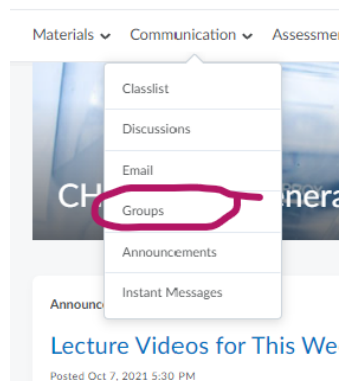


Figure 1

Groups	Description	Members	Actions
Water Quality Project			Start Date: Oct 11, 2021 12:00 AM Expiry Date: Dec 1, 2021 12:00 AM
Group 1		0/2	Join Group
Group 2		0/2	Join Group
Group 3		0/2	Join Group
Group 4		0/2	Join Group
Group 5		0/2	Join Group

Figure 2

You will see a list of appear on your screen similar to Figure 2. To join a group, just click the blue *Join Group*. Be sure to communicate with your partner so you both join the same group. I recommend you both sign up for a group at the same time to ensure you register for the same group. Please do not sign up to be in a group with someone in it unless they have agreed to work with you on this project. You must sign up for a group, even if you are working alone, by the due date or you will not be able to complete this assignment. If you want to work with someone on this project and are having trouble finding a partner, let me know and I can help connect you with someone.

Project Requirements

Part 1: What are the causes, impacts, and chemistry of ocean acidification

You can choose to complete Part 1 of this assignment as a vlog or blog. I have posted a video to Brightspace demonstrating how to use Kaltura and MediaSpace, both provided to all Riverland students, to create a vlog.

If you choose to write a blog, you will need to create a free account on <https://edublogs.org/>. This is a free blog website designed for teachers and students to use. You will write/create your blog post here. If you want to see a few examples of blog posts, you can check out my edublogs site at <https://chemmyslab.edublogs.org/>

- A summary of OA. This summary should introduce the reader to ocean acidification and provide them with a basis of knowledge that the rest of the final project builds on.
- A brief overview of the chemistry involved in ocean acidification, including the chemical equations for how OA occurs.
- Discuss any pros and cons for your topic of research.
 - If you are unsure how to identify the pros and cons of OA, please see your instructor.
 - Be sure to provide sufficient detail. Don't just bullet point the pros and cons and not explain each.
- Discuss possible benefits and impacts for OA on the environment, humans, and the economy. Some of these may appear to be pros and cons (and may be included in the list of pros and cons); however, details of these benefits/impacts should be outlined.
- Discussion of students' experimental findings on classroom research, including the experimental procedure developed, results, possible sources of error/experimental limitations, and how their findings/research related to the literature findings.
- Your final project should present a well-rounded view of your topic and needs to include at least one source that refutes OA and its possible impacts.
- Explain, using supporting information, your opinion on OA regarding its potential impacts outlined in the research and causes of OA. What do you think is going on? Are the proposed remediation options viable? Do you have any other ideas on how to address the issue?

Part 2: Citing and Assessing Sources

Below are the guidelines for citing and assessing sources. You will be using the information we learned about evaluating sources for reliability and validity from General Chemistry I.

- You will need to cite at least eight sources for this assignment.
 - Two must be primary, scientific journal articles from peer-reviewed scientific journals.

- You must use data from the [NOAA OA project](#) in your report regarding pH and carbon dioxide levels. I will provide additional information on this requirement via a video posted to Brightspace.
- At least one of your sources should refute OA, its causes, and/or potential impacts.
- You should have at least one other non-internet source (i.e., newspaper, a secondary source in a scientific publication, etc.).
- None of your sources can be Wikipedia.
- Analyze your research for any underlying assumptions or bias on the part of the source. This refers to your resources, not your personal bias. If bias is found, suggest an alternative perspective that disputes it or explain the issue, solutions, or findings from at least two points of view. If no bias is identified, then you must say so. Include this information below the citation for your reference.
- Explain any areas of uncertainty (i.e., questions raised) identified in your research. If no areas of uncertainty were raised, then you must state so.
- Is this source reliable? Explain your reasoning using the information we discussed in General Chemistry I regarding identifying reliable sources. Include this information below the citation for your reference.

NOTE: Citing your sources on your final project is required for this project. If you do not cite your sources, I will consider your project plagiarized, and you will receive a zero for the entire project.

Riverland's library provides students access to databases containing journal articles at <https://www.riverland.edu/student-services/library/databases/full-text-databases-a-z/>. You are encouraged to use the Riverland library to find sources for this project. You can also use your local library or internet at home/campus to obtain research materials for this project.

Be sure to properly cite your sources using APA or MLA format in a word document. If you need help properly citing your sources, see Purdue's Online Writing Lab (OWL) www.owl.english.purdue.edu or the University of Auckland Reference page https://www.cite.auckland.ac.nz/2_8.html.

Other requirements for your final project include:

- There must be an artistic aspect to your submission that contributes to the effectiveness of your final project. This can include images, diagrams, tables, charts, etc., in your final project to help explain your topic. At least some of these items should be directly used to describe your topic.
- Your submission should be organized and titled. Arrange the information about your topic in a logical manner that is easy for someone to follow and understand. (i.e., chronologically, topically, etc.). The reader/viewer should clearly understand your topic and the information you are trying to communicate.

- Everything should be aligned correctly in your submission if you write a paper or use PowerPoint. Text and images should not run over each other or run off the side of a slide. Everything should be neatly and carefully arranged in your final project.

Submitting this Assignment

Submit the following items to the assignment folder titled *Ocean Acidification Final project Assignment Folder* in Brightspace:

- Part 1 - Please include a link to your vlog or blog at the top of your list of sources and their evaluation (Part 2) or copy/paste it into the text box provided for the assignment folder.

In edublogs, you can access this link by clicking "Permalink" on the right side of the page and copy/paste either two links that appear in the highlighted areas in Figure 3.

In MediaSpace, be sure to "Publish" your video by setting the status to "unlisted" and saving before copy/pasting the link to your video. I explain how to do this in the video posted on how to use Mediaspace to create a vlog.

I recommend testing your link to make sure it works. Email it to a friend or family member and ask them to test the link. It is your responsibility to make sure your link works. If I am unable to access your blog/vlog because your link doesn't work, you will receive a zero on Part 1 of this project.

- Part 2 - Citation and assessment of sources. You must type the list of citations and their assessment using a program such as MSWord or GoogleDocs. This document can be uploaded as a .pdf, .doc, or .docx file.

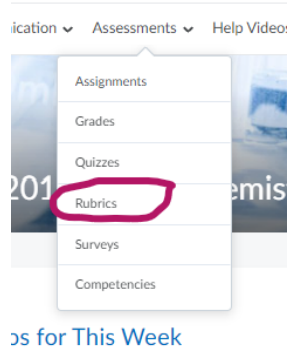
If you upload a file format other than the ones listed above, I may not be able to open your submission. If I cannot open your submission, you will receive a zero for the portion of the assignment I cannot open.

It is ok to upload multiple files for this assignment.



Figure 1: Obtaining shareable link from Edublogs.

Assessment



os for This Week

Figure 4

This project will be assessed using a rubric. The rubric for this assignment is available on Brightspace. Go to *Assessments* → *Rubrics* (Figure 4) and select *Ocean Acidification Project Rubric* (Figure 5) from the list.

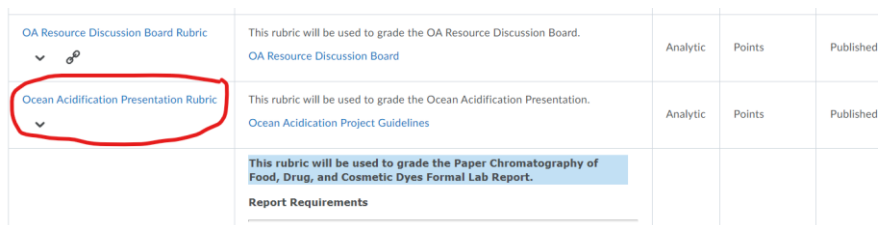
A screenshot of the Brightspace Rubrics list. The table has three columns: Rubric Name, Description, and Status. The 'Ocean Acidification Presentation Rubric' is highlighted with a red circle. Below it, a blue box highlights the text 'This rubric will be used to grade the Paper Chromatography of Food, Drug, and Cosmetic Dyes Formal Lab Report.' and 'Report Requirements'.

Figure 5

If you have any questions at any time, please see your instructor for guidance. I am happy to help.