

SCIENCE COMMUNICATION ASSIGNMENT

Subject: Science and writing

Grades: 11-12

Background:

Scientific research is important to understand our natural world through thorough observation and careful experimentation. Communication is the next step in science. Being able to effectively communicate the findings of studies to the public is crucial in garnering public support and legislative change, especially for broad and complex problems like climate change or invasive species. Good science communicators should be able to make science accessible, capture the imagination and spark meaningful discussions.

Learning Objective :

- Students will be able to summarize a peer reviewed article and present it to a general audience, in both written and visual formats.
- Students will be able to apply their knowledge of invasive species to broader ecological concepts.

Instructions:

Students will select a recently published peer-reviewed article related to invasive species. They will then identify the key points of the article answering the following questions:

- What did the researchers in the study do?
- What were the main findings of the study/experiment?
- Why was this research important, and what is its broader significance to ecology and invasive species?

Students will then take these points and expand on them creating a short (maximum 500 word) summary with clear introduction, body, and conclusion. The summary must be written so that the general public can understand the purpose and significance of the research without presenting any misleading information.

Examples of such summaries can be found at [Outside JEB](#). This is a monthly feature in the Journal of Experimental Biology written by researchers summarizing their work in a more accessible format. It's recommended that students read through a few examples to get a feel for the level of writing and areas to emphasize.

To support this summary students will also create a 1-page infographic. This visual should highlight the most important aspects of the article and should stand alone with readers able to understand the article without the written summary to accompany it.

Infographics could be created using digital tools if available (Canva, MS paint, Photoshop) or drawn by hand. All sources including images should be cited appropriately including the article the student chose.

Tailoring to Grade Level:

This assignment requires some prior experience reading and understanding scientific articles, and to be familiar with basic concepts of ecology and invasive species.

This assignment could be easily adapted to compliment any other area of study that could be more relevance students knowledge base or interests.

This assignment could also be tailored to younger grades by:

- Breaking it up into multiple assignment (i.e. Identifying key questions, writing summary, creating infographic. With feedback between each stage)
- Assigning a single article to the entire class
- Provide the summary of an article to students and have them complete the infographic portion

Tips For Choosing Articles:

- Pick an empirical study with clear experiment or question. Broad studies or reviews can contain valuable information but may be more difficult for students to identify a clear objective and construct an engaging narrative.
- Make sure they understand the questions article answers and how the experiment was carried out.
- Consider emphasizing recent articles for the most up to date and relevant science. But exceptions could be made depending on the context of the assignment.

- Article should be able to be tied back to the broader concepts of invasive species prevention, management, or broader ecological implications.
- Many scientific articles can be blocked behind paywalls. Consider searching for open-access journals to ensure their accessibility.

Evaluation:

Title:

- Clear and concise
- Reflects main topic of article
- Original and catches reader's attention

Introduction:

- Introduces reader to research question
- Significance and relevance to society is very clear

Body:

- Effectively describes methods and results
- Interesting narrative

Conclusion:

- Clearly addresses the research question
- Provides perspective on broader significance of conclusions
- Drives reader to want to learn more about the topic

Language/Grammar:

- Accessible/plain language
- Spelling and grammar correct
- Article referenced correctly

Infographic:

- Accessible and visually appealing
- Accurately describes research articles and easy to grasp main message
- Article referenced correctly