

What are appropriate sources for your written answers in this course?

The key is that your sources should not reflect personal opinions but are based on observations/ data and peer reviewed (reviewed by independent experts in the field).

This applies to primary literature: Articles published in scientific journals like "Science" or "Nature". These focus on the results and application of new research. Some government reports publish research results as well and these reports usually underwent an internal review process, which is acceptable but considered less rigorous.

In secondary literature an expert summarizes the published results of research groups (state of research) or gives an overview of a topic based on the primary literature (review articles). These can be published by science journals like Scientific American, Science Magazine, Popular Science etc. Some museums have websites with this kind of information. This secondary literature is the level of literature you will likely find most useful for this introductory course. You always need to cite the source, in this case the author of the review article, not the authors of the primary literature. Some Wikipedia articles are similar to these "review" articles (in this case the Wikipedia article has a long reference list with the primary literature). Since most Wikipedia articles do not have an author listed, it is hard to track who is responsible for the content and to check for potential biases. This lack of transparency makes Wikipedia a less reliable source (and not accepted for this course). It is much better to use Wikipedia to start your research and read the sources listed at the bottom of the Wikipedia entry.

Junk science or posts by influencers are not a credible source of information, they may only be used as examples for shortfalls.

What is junk science? Presented as science but lacking in one or several key elements of the scientific process e.g. no peer review, not using complete data sets, ...

How to recognize junk science? Ask questions: how reliable are the sources, what kind of data does this refer to, what is the source of the data? What is the source of the funding for the research? Was there an impartial peer review? Do the conclusions match the observations? Do the results/observations match other similar studies?

Acceptable sources for this course are:

- Scientific publications (journals by a science publisher: include a peer review process)
- Summary or review articles in scientific magazine (e.g. Scientific American, Popular Science, Science Magazine...)
- Government reports (including international institutions like UN, WHO, IPCC, UNEP)
- Websites and reports of established publicly funded museums, e.g. Natural History Museum, American Museum of Natural History, Royal Alberta Museum, ...
- Websites of research institutions associated with universities, e.g. Birds of the World- Cornell Lab of Ornithology, Alberta Monitoring Institute, ...
- Websites and reports of reputable not for profit science association e.g. National Geographic or other national or international science organizations
- For written assignments written resources (s.a.) are appropriate sources, lecture or youtube videos are not.