

ENV 110 Future of Natural Resources Science Practices “3 Minute” Video Project

INTRODUCTION

Contrary to what many believe, the scientific endeavor is actually pretty difficult to make sense of and involves much more than just memorizing the five steps of the “scientific method”. In numerous instances during this semester, you will complete science activities by way of performing some of the science practices, in part to learn the science concepts addressed deeply. But also discussing how you did the investigation and how certain aspects of the science process helped you learn it also helps you develop a deeper understanding of how science gets done and is important for all learners to do. In fact there are numerous common misconceptions about how science gets done and their persistence prohibits learners from contributing effectively to issues related to the natural world. Thus we are addressing this topic on an equal level as the three main science content topics we address in this course.

A traditional approach to determining how well you understand the science process might be to ask you to list the steps of the scientific method, which is significantly oversimplified, or respond to an essay question. This project takes a less traditional approach engaging you in a variety of strategies, including: 1) the use of digital media for you to *show* how well you understand the science practices and how you performed them, and 2) very concise statements you compose describing how what you are doing in the video relates to a specific step in “doing” science as well as your understanding of the relevant science concepts involved. These two components will require you to use your brain in different ways through multiple steps and perspectives to make sense of the science practices.

To complete the video project, you need to capture yourself performing all of the practices in very short videos (maybe 10 secs each) and/or photographs; do this as often as you can throughout the semester so you have a library of digital images to choose from when you complete the project near the end of the semester. And you need to do this without being too disruptive as you complete our various assignments...students generally do figure out how to do this! In addition to the science activities that you will complete (and capture your performance in them), we will work through several steps to prepare you for completing the video project. They include:

- Evaluating an example of a video product;
- Studying the various science practices via learning experiences, readings and discussions;

- Collaboratively creating a grading rubric (or scoring list) *before* you complete the project so you can use it in the creation of your product;
- Consulting a final rubric as you construct your science practices “10 second” video

Towards the end of the semester, once you have numerous images and a deeper understanding of the science practices, your job will be to string images that you select together using any tool you are most comfortable with (e.g. iMovie). If you do not have experience combining images, consider one of many free video editing tools available. To your combined images, add titles, captions &/or audio to very concisely describe what you are doing in the video that relates to a specific practice as well as your understanding of the relevant science concepts involved.

Note that you will need to collect videos and photos before you can do anything with them so worry about collecting first! One hint: Keep your clips short if you can. Downloading and uploading times will be shorter for shorter video files, and storage space needed will be reduced. You also need to be able to download to a computer the video files from the device you recorded them on so that you can combine and edit videos you select for this project. There are likely many ways to do this; direct download using a USP charging cable might be the easiest. It is best to move files from your phone to either your computer or a google drive folder regularly so your images don't use up too much memory.

CREATING YOUR VIDEO PROJECT

Once you have the images, review them to find best 1-2 images for each of the 8 practices. Note that while they are listed in a specific order, the intro of the practices pointed out that they are not meant to be done in the sequence they are typically listed, and many can be done in conjunction with other practices. For example, you may engage in scientific argumentation during the design and implementation of an investigation to debate the best approach to an investigation, during the analysis of data collected as you decide n the best way to graph your results, and during efforts with colleagues to come up with an explanation for results given some of the science concepts we learn in class.

You can use any tool to create this product. Examples shown in class were made using VoiceThread free online, and MovieMaker, a PC app. However you produce the video, it needs to be shared in such a way that I and other members of the class can view it. If you make it offline, be in touch if you have any trouble submitting it. The most important thing to remember is that the video clips you select to include need to be very short....about 10 seconds; you can keep them short either by recording short clips, or by editing out parts of a longer clip.

Length: If you have for each of the 8 practices 1-2 video clips of 5-10 secs each, the total length of the videos threaded together should not be more than a few minutes; past videos have been on average about 2 minutes. Try to keep total length to max of 3 minutes. A minimum length should probably be about 1 minute.

Alternative Video options: If, when you start threading files together, you find you don't have a clip that you want to use for a particular practice and you need to substitute something else for what you are missing, use of the following would be acceptable when absolutely necessary:

- with their permission**⁺, video or photograph of a colleague performing a specific practice
- still photograph of yourself performing a practice*
- still image found in creativecommons.org that you think shows someone demonstrating a practice*[^]
- a cartoon showing a character (e.g. sponge bob!) performing a specific practice*[^]
- use a lesser quality file that you'd rather not use, and with audio or captions, explain what the problem is and what it would like if you were performing the practice correctly

*For these options, in most cases, you will need to add much more audio or text explaining how the practice is being performed than you probably will need to do when video is used.

+You will need to make it clear that you did acquire permissions.

[^]You will need to cite sources.

***Use the rubric we design in class to create your product and make sure the images you use actually match the annotations you add! For this assignment, you need to succinctly communicate everything you think is important to show you understand each of the science practices within the short video thread...so be thorough and concise! If you find that an image you planned to use does not show you performing a practice well, you can still use it...but add text/audio to explain what the issue is and what you would do differently whatever you were photographed doing to perform the practice better.

DUE DATES:

1. You will need much of the semester to collect video clips, and then some time to create your project. By 11:59 p.m. 12/7, complete your video and post it in 2 different locations in Canvas: 1) the SP Video Practices Project assignment site; 2) the designated Discussion Board *with comments about what you thought about this assignment and what you learned.*

2. During classes in our last week, you will present your video. Each of you will be assigned random "peer reviewers". You will each peer review three other students'

videos and offer professional, supportive, constructive feedback in the Canvas Discussion Board...what suggestions can you give them to help them improve the product if they were to revise. Consult the rubric to be efficient in offering feedback but consider other comments you might want to offer. "I like this video" will not be sufficient...if this is all you can offer, be specific about what you like about it and how the video shows that your colleague has successfully demonstrated that they understand the practices. Your peer reviews are due 11:59 p.m. on 12/13.

Any student who would like to use feedback offered by peers or from the assignment evaluation done by the instructor should contact the instructor to arrange before final grades are submitted. Recreating the video project will likely not be necessary.