

SCI 100 Discovery Science Science Practices “10 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 discussing how you did science and how certain aspects of the science process helped you learn it also helps you develop a deeper understanding of how science gets done. A traditional approach to determining how well you understand the science process might be to ask you to respond to an essay question. This project takes a less traditional approach engaging you in a variety of strategies, including the use of digital media for you to *show* how well you understand the science practices and how you performed them using video &/or still photos. By doing so, you will be using 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 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 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 using “puppy practices”
- 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 select video &/or photographs

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 you select together using any tool you are most comfortable with (e.g. iMovie). If you do not have experience combining images, consider Voicethread.com (free online tool; see <https://voicethread.com/new/myvoice/#thread/8381/61448>). To your combined images, add some titles, captions &/or audio to indicate the specific practice and the specifics of

how you are successfully performing the practice (or if you could do it again, how you would do a better job of performing the practice). The puppy practices video was meant as a fun example demonstrating how this can be done. You will not be given an example of what a real science practices because part of the exercise is to make sense of the practices to the point that you can show good performance of them in digital images.

When you read this for the first time, note that you will need to collect videos and photos before you can do anything with them so worry about this task first! One hint: if you are not familiar with editing video and think you might use Voicethread, it will probably be easiest if you keep your video clips short, under 10 seconds primarily, because Voicethread will not allow you to download longer videos (although exact size of files remains a bit of a mystery!).

Once you have the images, review them to find best 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 listed in informational resources, 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, during the analysis of data that comes from the investigation, and during efforts with colleagues to come up with an explanation for results given some of the science concepts we learn in class.

CREATING YOUR VIDEO PROJECT

You can use any tool to create this product...VoiceThread was provided for the puppy practices video as an example of an easy online option for anyone who has not done this sort of thing using some other option (like iMovie, MovieMaker, etc.). 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. If you want to try VoiceThread, you'll need to create your own free account; be in touch if you need help. Once you have one, view the following short explanation of how to combine videos and images, and add audio &/or text:

<https://voicethread.com/new/share/8381/>. The most important thing to remember: your videos need to be very short....just a few seconds. This program only allows very small videos to be uploaded. It will also take photographs.

Length: There are 8 practices, and if you have for each of the 8 1-2 video clips of 5-10 secs, the total length of the videos threaded together should not be more than a few minutes; past videos have been on average about 2 mins. So try to keep total length to max of 4 mins. A minimum length should probably be about 1 min.

Composition: Ideally you would include very short video clips! However, if when you start threading files together, you find you don't have a clip that you want to use for a

particular practice...if you find you need to substitute something else for a video clip you don't have, 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 designed in the 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 how you would do differently whatever you were photographed doing to perform the practice better.

Composition hint: students are most convincing that they understand a specific practice and performed it well (or can explain how they could better perform it) when they add supplemental text either in writing or in audio. Just titles are often not sufficient to be complete. *Think through* what it will take for you to *succinctly* convince a viewer that you understand and successfully performed.

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.