Thursday 12/17/2020: X.9, X.10, X.11, X.12: I didn't find anything else interesting in my research, so I didn't have anything to do for that part of the plan. I wrote the assignment document, and the assignments were to create a 3D snowman and an open-ended final project. I wrote a couple hints for the snowman assignment, and then wrote my version of it. It took longer than expected, as I had to do some tweaking and trigonometry to get the snowman looking just right.

Wednesday 12/16/2020: X.7, X.8: I finished the materials section, and I actually had to go back to the lighting to section to add information about a function that I had forgotten about (it was about the specular lighting -- you control highlights with both the color of specular light and the specular property of the material).

Tuesday 12/15/2020: X.8: I worked on the materials section of the instructional document, but I took a while outside of actual writing testing different scenarios to see which one produced the most dramatic effect for each of the different material properties (so that I could show what each property did, as just saying, "This function controls the emissive lighting of the material" isn't very helpful).

Monday 12/14/2020: X.7: I finished writing the lighting section, which I thought was pretty cool, as lighting really made simple spheres and boxes seem much more realistic. Most of the functions were pretty similar however. I also wrote the section about the camera and changing where it is/where it's looking.

Friday 12/11/2020: X.6, X.7: I wrote the subsection about custom shapes both using vertices & composing 2D shapes in 3D. I strongly disliked both methods, which was a shame, as there isn't really any other way to make custom shapes. I also started working on the lighting section, since I had some time left over.

Thursday 12/10/2020: X.6: I finished the subsection on transformations in 3D and wrote the part about boxes (rectangular prisms) and spheres, which are Processing's only 'primitive' 3D shapes. All others must be custom made by the user.

Wednesday 12/9/2020: X.5, X.6: I wrote the instructional document section for using the 3D renderer (very short), and I started working on the section on basic shapes. I only got through using transformations in 3D though.

Tuesday 12/8/2020: X.3, X.4: I researched lighting & camera and material properties. I was unhappy to see that material properties essentially only interact with the lighting, but I thought that the lighting stuff was really cool (and there was kind of a lot of it also). Moving the camera was… complicated.

Monday 12/7/2020: X.1, X.2: I researched the 3D renderer and drawing shapes in 3D. The renderer is really easy to use, so that didn't take a while, but there was a fair amount of material to learn about for drawing in 3D.

Friday 12/4/2020: IX.5, IX.6, IX.7: I decided on the assignment for this week, which is going to be another rework of Pong. This time, the students have to display and keep track of points between the left and right players, and display a little message when someone wins a point. I wrote the assignment and solutions documents.

Thursday 12/3/2020: IX.4: I started and finished the instructional document section about using fonts in Processing. It's pretty simple (call one function to load a font and then another to set the font), so it didn't take that long.

Wednesday 12/2/2020: IX.3: I finished the instructional document section about basic text with three utility methods: one for determining the pixel width of text, and two more for controlling some basic properties of drawn text.

Tuesday 12/1/2020: IX.3: I wrote the introduction to the instructional document for text/fonts, and I worked on the instructional document section for displaying basic text. In addition, I was having an error that I'm pretty sure is a bug in Processing, so I spent a while debugging until I was 100% sure it wasn't my fault.

Monday 11/30/2020: IX.1, IX.2: I did the research for this module today, which is about text. It looks pretty simple in Processing, so this should be a pretty laid back week for me.

Friday 11/20/2020: VIII.9, VIII.10, VIII.11: The assignment for this week is a modification of the Pong program from earlier. They had to convert their math from the previous incarnation of Pong using the new functions and classes from the lesson, e.g. replace variables representing position and velocity components with PVectors, etc.

Thursday 11/19/2020: VIII.7: Some of these miscellaneous functions aren't really like anything else in Java, so I had to spend a longer time explaining their function than I would have otherwise, and I also provided examples for the one that I felt needed additional clarification. There were also just some familiar miscellaneous functions here too.

Wednesday 11/18/2020: VIII.8: I realized this after I did the work, but apparently I was supposed to miscellaneous functions before vectors. Oops. In any case, I wrote the instructional document section for vectors. I didn't explain the mathematical side of vectors, like what a dot or cross product is, as there are already many quality explanations on the internet.

Tuesday 11/17/2020: VIII.5, VIII.6: I wrote the instructional document introduction as well as the sections on trigonometry in Processing, which is pretty simple, and the randomness functions.

Processing actually has some other random functions beyond the obvious, like a random number from a Gaussian distribution and Perlin noise.

Monday 11/16/2020: VIII.1, VIII.2, VIII.3, VIII.4: I did all of my research on math in Processing today. This included the trig functions, functions for producing random numbers & noise, some miscellaneous methods (pretty interesting and not in Java), and the PVector class & its related methods.

Friday 11/13/2020: VII.4, VII.5, VII.6: I decided on what my assignment should be for this lesson, and I ended up with making students design another reusable class that represents another GUI element, like a set of radio buttons, checkbox, or scrollbar. There were no hints for this assignment. I then wrote my example solution for a set of radio buttons.

Thursday 11/12/2020: VII.3: I didn't do any work in class, as I had an eyedoctor appointment. However, I did finish working on my button classes after school in my own time. I then pasted the code into the instructional document and explained where I felt it necessary.

Wednesday 11/11/2020: VII.3: I finished my classical animation class and explained certain parts of it in the instructional document. I then started working on a class to represent a button, which is a common GUI element. I'm making two different types of button classes: one that takes images for each of its states, and one that takes functional interfaces for each of its draw states.

Tuesday 11/10/2020: VII.2, VII.3: I wrote the section about general animation in Processing, which turned out to be the shortest section known to man, since animation apparently amounts to "put different things on the screen by changing what you draw in the draw function each frame". I also started working on a 'classical' animation class, in which a series of images are displayed sequentially.

Monday 11/9/2020: VII.1: I started and completed all of the research necessary for the next section, which is about animation. There's not much to research for this topic, as the core idea is very simple. I looked at what sort of reusable classes I wanted to write as examples.

Friday 11/7/2020: VI.5, VI.6, VI.7: I wrote the assignment, which I had decided was to write a version of Pong in Processing. There weren't any hints to be given in this section, but I did expand on exactly what I wanted for this project. I then wrote the solution document and pasted in the example solution for a simple Pong game that I also wrote today.

Thursday 11/6/2020: VI.3, VI.4: I covered how to use the event listener functions to interact with the keyboard and mouse finally. This section was pretty quick, since they are easy to explain and understand. In addition, there are only a few functions that are necessary to know.

Wednesday 11/5/2020: VI.4: I wrote the section about interacting with the keyboard. Once again, this was specifically about using variables in the draw function, as opposed to using event listeners. This section was longer than the previous section, as I had to write about ‘coded keys’, which are keys like shift, control, alt, etc.

Tuesday 11/3/2020: VI.3: I wrote the section in the instructional document about interacting with the mouse through variables in the draw function. The section that specifically deals with event listeners for both keyboard and mouse will be dealt with in a later instructional document section.

Monday 11/2/2020: VI.1, VI.2: I started my next module, which is about interaction with the keyboard and mouse. I did all of my research for the section today, as the functions and variables are pretty similar and easy to understand.

Friday 10/30/2020: V.7, V.8, V.9: I finished writing up the assignment document and wrote a couple of hints about it. Then, I wrote the solution document, which included the example Processing program I made today (about artistic movements in Germany).

Thursday 10/29/2020: V.7: I spent most of my time trying to think of a good assignment for this lesson, and I finally settled on making the student create a chart that shows the progression of something (incorporating images). For example, they could make a storyboard using images, describe how the artistic movements of late 1800s Germany influenced each other, etc.

Wednesday 10/28/2020: V.5, V.6: I re-researched the tint method and wrote about it in the displaying images section of the instructional document. I also wrote the section about exporting to PDF and SVG formats. Unfortunately, both are pretty limited in what they can do.

Tuesday 10/27/2020: V.4, V.5: I finished the instructional document section that I started yesterday and wrote the section about displaying images once they have been loaded. It was pretty quick, since there’s pretty much just one function that displays an image, so I think that I’ll actually add in one of the other functions I researched tomorrow.

Monday 10/26/2020: V.3, V.4: I researched how to export a sketch/write a sketch to an image or pdf, and I started writing the section of the instructional document detailing how to load an image into Processing to use.

Friday 10/23/2020: V.1, V.2: I spent my time researching for the next section about images, specifically how to load and display images in Processing. I also looked at some image editing functionality, but I don’t think I’ll be putting that in my instructional document, since I didn’t plan for it.

Thursday 10/22/2020: IV.11, IV.12, IV.13: I wrote the assignment document and solution document. There weren’t really any hints to give, so I didn’t give any hints on this lesson. I

wasn't entirely certain what to put for the coding exercise for this lesson, since it covered such a broad range of topics, so I left it up to the student to make something of their choice (but using one of those topics) in Processing.

Wednesday 10/21/2020: IV.10: I finished the instructional document section about using the Processing library and functions in pure Java. It took me less time than I had anticipated, which I was appreciative of.

Tuesday 10/20/2020: IV.9, IV.10: I started and finished the section discussing the usage of Java libraries in Processing, since there are actually 0 changes between Java and Processing in this area. Then, I started work on the long-awaited section about using the Processing libraries in pure Java. I'm providing screenshots and specific directions for NetBeans, but users with other IDEs or setups can follow the general directions to achieve the same effect.

Monday 10/19/2020: IV.7, IV.8: I finished the section on functions and included a pretty simple example. I also started and finished the section on using generics in Processing. It was pretty quick since generics are the same as in Java, but I did want to elaborate on generic functions/methods, since I myself was unfamiliar with them.

Friday 10/16/2020: IV.6, IV.7: I finished up the section talking about classes with a discussion on inheritance and interfaces in Processing. I also had to discuss the active and static modes of Processing. I then started the section about functions.

Thursday 10/15/2020: IV.6: I continued work on the section about classes, objects, etc. in Processing. I explained how Processing works (in basic terms), and provided some interesting and relevant effects of this on classes. For example, this means that classes written in the PDE cannot use static variables/methods, and that private only really restricts access to the file, essentially.

Wednesday 10/14/2020: IV.5, IV.6: I researched how to use Processing within a standard Java environment. For the instructional document, it'll probably be specific instructions with NetBeans and general instructions for other IDEs. I started working on the instructional document section about writing classes in Processing.

Tuesday 10/13/2020: IV.1, IV.2, IV.3, IV.4: I finished my research on the subject of classes in Processing today, and started looking at standalone functions in Processing and how they function. So far, it appears that most of the class and function stuff is very similar to how it works in Java. I also looked at using generics in Processing, which also seems to be the same as in Java. Finally, I looked at how to use Java libraries in Processing, which appears to be the same as in Java as well.

Monday 10/12/2020: N/A

Friday 10/9/2020: III.9, IV.1: I finished the first sample solution and then wrote up my answer to the second question for this section. After I finished with that, I started looking into how classes, inheritance, access modifiers, etc. work in Processing.

Thursday 10/8/2020: III.7, III.8, III.9: I wrote the assignment for the lesson, and there weren't really any hints necessary, so I started working on the sample assignment solutions.

Wednesday 10/7/2020: III.6: I started and finished the instructional document section about transformations. I included all of the previously discussed transformations, as well as the pushMatrix and popMatrix commands, which allow you to reset transformations (which are additive in Processing).

Tuesday 10/6/2020: III.5: I finished writing the section about color, stroke, and fill. I've gotten a lot better at transferring code in between the Processing IDE and Word, while maintaining the formatting.

Monday 10/5/2020: III.4, III.5: I actually finished this section today, as I had decided to add Bezier curves and vertex() on Friday, but I hadn't actually done the work for those shapes last week. So today, I just worked on those shapes and started working on the color section.

Friday 10/2/2020: III.4: I finished the section of the instructional document on basic shapes. I also decided to add in Bezier curves and the general vertex() function to add some variety. It still takes a while to write a subsection on a particular shape, but I'm starting to get faster with embedding code.

Thursday 10/1/2020: III.4: I was able to achieve a lot more today than yesterday, but it's still taking a considerable amount of time to write the documentation for each shape. Hopefully I'll be able to finish tomorrow and continue on to the rest of the instructional document.

Wednesday 9/30/2020: III.4: I started writing the instructional document for basic shapes, and it seems to be taking much longer than I thought it would. For each different shape, I have to write a description, show the syntax, and then a small example and the output of that example. For some reason, Word keeps converting the embedded documents (these hold my code samples) into pictures, which messes with the formatting. In addition, I discovered, after a lot of trial and error, that I have to manually resize each embedded document, otherwise the paragraph spacing around each code sample is messed up.

Tuesday 9/29/2020: III.1, III.2, III.3: I researched the three sections for this module: basic shapes, color, and transformations. I'm including all of the shape 'primitives', as well as one other method that allows you to create polygons with more freedom. In addition, I learned about the various types of stroke and fill in Processing.

Monday 9/28/2020: II.5, II.6, II.7: I wrote the assignment for this section, which was essentially pseudocode using only a couple of shapes and transformations. It was a creative assignment, so I didn't provide any hints, but I did provide an example format. I also created an example solution, using a frowny face drawing I whipped up in Processing.

Friday 9/25/2020: II.4: I wrote the entire section about 2D transformations and used the graphics I had made previously as examples.

Thursday 9/24/2020: II.3: I wrote the entire section on the introduction to computer graphics concepts, like color and location. I incorporated some of the graphics that I had made.

Wednesday 9/23/2020: II.2: I created more graphics to illustrate the 2D transformations. These are a little different than the traditional transformations, as these transformations are applied to the axes, instead of a shape. I did them this way because in Processing, transformations are also applied to the axes, instead of a shape.

Tuesday, 9/22/2020: II.1, II.2: I researched online about the way graphics are represented for computers in a 2D space, and I looked at 2D transformations. I started creating graphics for the instructional document, showing the differences between the normal Cartesian coordinate system and the one used by most computer graphics systems.

Monday, 9/21/2020: I.5, I.6, I.7: I wrote the assignment for this lesson, which was pretty short, in addition to the hints I wanted to give. Finally, I wrote the solutions to the assignment exercises. This was pretty quick, since the assignment was light and entailed following directions and experimenting on your own.

Friday, 9/18/2020: I.3, I.4, I.5: I reviewed a sample Word document with styles for code, and integrated some of the styles into my document. I also started working on the styling of assignments.

Thursday, 9/17/2020: I.4: I finished my introductory programs in the beginning of the period, and then I worked on writing my introduction to Processing, with the programs I wrote as examples. I explained the relevant sections of each program, while also leaving the Processing specific information for later in the course.

Wednesday, 9/16/2020: I.2 and I.3: I continued working on my introductory programs (as mentioned below) for the chapter. I also wrote the installation section for the chapter, including screenshots and notes to provide an easy-to-follow 'installation' guide.

Tuesday, 9/15/2020: I.2: I looked at more Processing tutorials for introduction-worthy materials. In addition, I thought about and decided on what sort of first programs to include. I'm going to include both the classic "Hello, world" program, and a visual twist on "Hello, world", to provide quick examples of how to work with Processing in the beginning.

Monday, 9/14/2020: I.1 and I.2: I researched the installation process for Processing, and it was a lot simpler than I thought it would be. Essentially, you don't even have to traditionally install it; it's just extracting a zip file. I then looked at some of the Processing tutorials for a sense of what to write for my introduction. I worked on the style of my Word documents as well.