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Written Responses

2a. The computing innovation represented by my artifact is the digital keyboard. The keyboard is an electric piano. It is a musical instrument that can be played by people with experience playing the piano while giving them a variety to their sounds. My computational artifact illustrates the keyboard's purpose by showing the viewer the benefits of the keyboard and how it works. It compares the keyboard to a piano to show why someone would want to get a keyboard instead of getting a piano.

2b. I first started off making a rough draft of my computational artifact on paper. Once I decided on the design of the computational artifact, I got on a computer and decided on using paint the make my artifact. I gathered all the images I would need to make my artifact and began editing them in paint to fit into my artifact. I mostly used png images to avoid cropping out the images as much as possible. I added in a bit of text to clearly portray the meaning of each image. I then saved the artifact as a pdf file.

2c. The keyboard is beneficial in the fact that it is way cheaper than a piano. A piano can cost up to \$100,000. A keyboard can cost up to \$1000. The keyboard costs way less than the piano,

making easier to access and acquire. Furthermore, a keyboard usually comes with multiple different voices. So instead of just making the sound a piano makes, you can also make the keyboard sound like other instruments. A keyboard also takes up less space than a piano. A piano is very bulky and is not very easy to move. A keyboard can easily be moved around and can fit almost anywhere because of its much more compact design. The keyboard can't really be used without power, though. If you don't have a way to power the keyboard, you won't be able to play it. You also have to consider the fact that the keyboard isn't exactly like a piano. A piano will probably sound nicer than a keyboard most of the time, giving the keyboard a more robotic sound compared to the real thing. A keyboard (at the lower end of the spectrum at least) can't detect the difference between a hard keystroke to a soft keystroke. A keyboard also won't feel the same as a piano. Piano keys feel heavier to press than those of a keyboard, unless the keyboard has weighted keys. While the keyboard is a great instrument to start on when learning to play the piano, it is recommended to get a piano as soon as you can if you plan on becoming a serious pianist.

2d. The digital keyboard uses sample sounds that have been stored on it to produce sound when you press on a key. The quality of the sounds the keyboard makes depends on the quality of the sample sounds that were recorded. The keyboard can store multiple different sounds that allow the keyboard to sound like multiple different instruments. When a key on the keyboard is pressed, the pressed key completes a circuit that tells the circuit board what note needs to be played. The keyboard also checks to see what type of sound is being used. The keyboard then takes the appropriate sound file and plays it through the speakers. The keyboard can also store

music files on it in the form of midi files. These files can be played on the piano, which may be able to help you learn a piece of music a bit easier. One concern is the fact that you typically can't edit or add any more sounds than the keyboard already came with, unless you own a type of keyboard known as a synthesizer or a digital sampler. Otherwise, you have to work with the voices that your keyboard came with. Before getting a keyboard, you have to make sure it has all the software and features that you are looking for. There are many keyboards to choose from, so you have to make sure you are getting one that works for you.

2e. Hoffman, Joseph. "Choosing a Piano or Keyboard for the Beginning Student." *Hoffman Academy*, 5 April 2017, www.hoffmanacademy.com/blog/choosing-a-piano-or-keyboard-for-the-beginning-student/#digital-pianos. Source retrieved on 1 December, 2017

Kraemer, Brandy. "These 5 Tips Will Help You See If You Should Play Piano or Keyboard." *ThoughtCo*, www.thoughtco.com/learning-piano-vs-keyboard-2701061. Source retrieved on 1 December, 2017

Finney, Kaliyana. "Inside a Keyboard Image Gallery." *HowStuffWorks*, electronics.howstuffworks.com/gadgets/audio-music/inside-a-keyboard-pictures.htm. Source retrieved on 1 December, 2017