Art Integration

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The Arts in STEM: Advancing Meaningful Integration

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Abstract

In this paper, I will describe how I could adapt a lesson I teach to include an art form. The art form I chose is photography and I will implement it into an Algebra 1 lesson about Sequences. This is an activity I have always wanted to do but have never worked out the details, so this will help me create the lesson so I can use it with my students.

Art Form

The art form I chose is photography. I chose photography for many reasons and think it is an art form most people find interesting. One of the reasons I chose photography is because in society today, most people take a lot of pictures and have a device with them at all times that is capable of taking pictures. I also chose photography because it is something my students enjoy to do and can express themselves through. I also think that because of how prevalent photography is in our society, that a lot of my students have an interest in it and strive to take the best pictures they can.

Lesson Enhancement

The art form of photography enhances the Algebra 1 topic of Sequences by bringing real world examples to something that does not usually mean much to students when they first start learning it. Within sequences is one called the Fibonacci Sequence. The Fibonacci Sequence is the sequence 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144…, which is typically a difficult sequence for students to figure out the pattern on their own, but is one that is prevalent in the real world more than many other sequences. The Fibonacci Sequence is commonly referred to as the Golden Ratio because it is found in a lot of plants and flowers and display a naturally occurring pattern that many find beautiful. The use of photography as part of this assignment will enhance this topic because the students probably do not realize how often the Fibonacci Sequence appears in nature and it will give them a reason to seek out things that do display it. The students will have to use photography to document items they find that show the pattern of the Fibonacci Sequence and then use those photos to present their findings to the class. By doing this, sequences will hopefully make more sense and not just be another topic they are told to learn about in math class.

My personal opinion on integrating the arts in the classroom is that it is an important aspect to consider and use as much as possible. I know it may be difficult to integrate it into every topic and every lesson, but the more it occurs the more successful it will be. I also believe that it gives another option for students with different styles of learning to use and be successful. WIthin every class, there are students who excel in different ways and by incorporating the arts, you are giving the students who enjoy expressing themselves through art a way to demonstrate their knowledge of a topic to you. I believe that integrating photography specifically into class gives students who may have a hard time expressing themselves with words a way to do so

with pictures. Photography is also a good way to switch up how to present their knowledge and I have found that change is good for both students and teachers.

My rationale for using photography is because it is very much accessible to almost everybody. Almost every student either has a cell phone or has a family member who has a cell phone they can use. Photography is used all the times in our day to day lives so this assignment will have students use photography in a more meaningful way than just taking selfies. This art form can be used across STEM content in so many ways. Students can take pictures of their results of an experiment in science, all forms of photography use technology (phones, cameras, etc.), photography can be used in engineering by taking photos of certain projects and adapting them to build your own piece, and can be used to photograph all the ways math is used in the real world.

Interdisciplinary Context

Photography can be used to connect different subjects in many ways. The first way that came to mind that photography can be used within all aspects of STEM would be looking at how cameras actually work. Students could research how a lense works, which integrates engineering by understanding what is happening when the shutter closes to snap the picture. The students could also research the different shutter speeds and look at the math behind how the shutter speed changes the type of pictures that are taken and how to know which speed is best depending on the desired outcome. Technology can be used with photography by looking at how the entire camera works along with using technology to look at and edit photos. Developing film the “old fashioned” way incorporates science by having to follow a process and use the right materials for the developing of photos to be successful. There is so much STEM content within photography that I don’t think most people realize and it is content that is accessible to many students, especially those who are very interested in the art form of photography.