

# Stained Glass Art Project

By Arya S.

How does math and art relate to each other? There are many ways that they could relate to each other. One example would be a stained glass project my class has done. We built a graph on a large sheet of paper with our own variation of X and Y-axis. Then we had to determine where the equations that were given to us would go and through that we got a layout of what our design has to follow. An example of one of the equation would be  $Y = -\frac{1}{2}X - 4$ . Through that equation we made a line with a slope of  $-\frac{1}{2}$  and a Y intercept of  $-4$ , meaning it would start from  $-4$  on the Y-axis. After that we had to rely on our creativity to guide us through the rest of the art project.

All the pieces of art had their own unique way of expressing how the creators felt. Some were random some were carefully manipulated. Our class had to look at all the different types of art and understand what we felt about it. One specific piece of art intrigued me the most because it showed the machines that soared through the sky. That piece of art told me that there was a whole new world in the sky. The art itself was joyful and colorful because they had used bright colors to paint the beautiful sky. That piece of art also reminds me of my travels through many different countries and how I got there.

One of the most important parts of this project was when we had to graph the equations that were given to us. The equations that were given to us consisted of a slope, Y-intercept, and an X variable, an example of one would be  $Y = \frac{1}{2}X - 8$ . The slope is  $-\frac{1}{2}$  so it would mean that it would go up 1 and over 2 to the left because it is a negative. The  $-8$  in the equation is the Y-intercept meaning the slope would have to pass that number to continue. Through those steps my group and I were able to graph the layout of our project

In all of the pieces of art there was at least one chevron that could determine if the artist had either used Y increments or X increments. I learned that if you have more numbers on the Y-axis then the chevron would be altered in a way so it would be a smaller in height than the one before. In my group's project we had a Y-axis of 18 and a X-axis of 12 and our project's chevron was large but harder. Another project that had a rainbow as a chevron but they're chevron was smaller and easier to see than ours. The project with the rainbow had used more numbers on the X and Y-axis than ours so that was why it was much more easier to see.

Through all those many days of constant working my group and I learned the relationship of math and art. The actual formula for a line is  $Y=MX+B$  M being slope and B being Y-intercept. That formula of the line had been mentioned a few times throughout this essay like  $Y=-\frac{1}{2}X-4$  and  $Y=\frac{1}{2}X-8$  but they both meant the same thing. Another thing we learned was if an opposite slope crossed the Y-axis it will be a reflection. Through this project we have also learned that tables could be turned into equations because you can see the slope by the distance between the X variables and you can see the Y-intercept by looking at where the Y variables start. Tables can also be graphed if you just find out where the X and Y values are. Tables, Graphs, and Equations all are just different ways to show the same data.