In this project I investigated how I could mathematically:

1. Show the change in sodium through the steps of bread making by describing the slope through piecewise functions.

2. After finding the perfect loaf of bread I found the baker’s percentages to share with others.

3. Channelled my inner Euclid to construct with a straightedge and ruler.

In weeks 5 through 10 we needed to create a recipe and make changes to it each week until we made it perfect. My group decided on making a sourdough loaf. We have a 44% hydration percentage and .9% salt.

After we had perfected our sourdough we tried to make it special and create sourdough cinnamon rolls. The cinnamon rolls use the same baker’s percentages for the dough, but we roll it out and spread half a cup of butter and prinkle brown sugar and cinnamon.

For my challenge option I decided to construct the flag of Nepal (Nepal is the only country that includes construction instructions for the flag in the constitution). I constructed the flag using a straightedge and compass. To construct this I needed to be very precise. As you can tell I didn’t do it exactly correct because the borders interfere with the sun and moon. During my construction process I struggled with understanding the directions because somethings were implied and not said but I am very proud of my final product.
Sodium Through the Steps

By Lauren Niegocki

From seed to grass the slope is positive. This means that the amount of sodium went up. This also happens from sheave to flour. From grass to sheave the slope is negative. This means that the amount of sodium goes down. This also happens from flour to dough. From dough to baked bread the amount of sodium does not change. This is because you don’t add any more salt after making the dough.

\[ s(t) = \begin{cases} 
  t-1 & , 1 \leq t \leq 2 \\
  -t+3 & , 2 \leq t \leq 3 \\
  .75t-2.25 & , 3 \leq t \leq 4 \\
  -.25t+1.75 & , 4 \leq t \leq 5 \\
  .5 & , 5 \leq t \leq 6 
\end{cases} \]