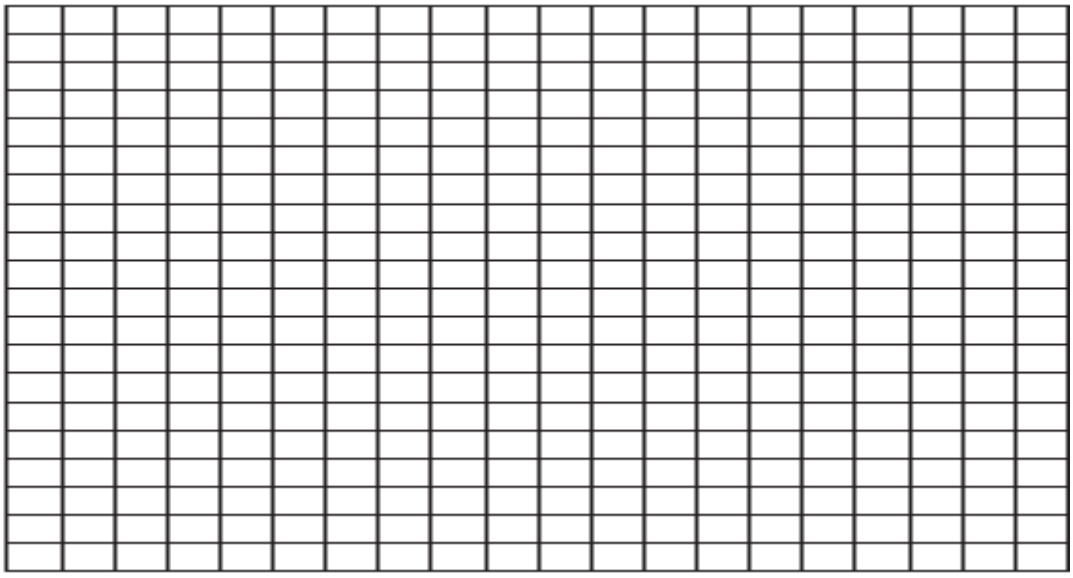
Objective: Students will be able to create a project that shows the chronological order of major battles of WW1 and the number of casualties of allied forces. The library resources used will find the name of each battle and the number of allied casualties in each battle. Students will then draw a chart of the where X represents each battle of WW1in chronological order and y represents the number of allied casualties. By using this information, students will construct a scatter plot and draw a line of best fit. Then with the use of their graphing calculator, students will write the equation of the linear regression of the data and find the correlation coefficient to show whether the correlation between the battle and number of allied casualties is strong or weak. By using the linear regression equation, students would be able to predict the number of casualties if a "nth" battle was fought.

For Example

Name of each battle in chronological order(X)	Number of Allied Casualties(Y) (In the thousands)
First Battle of the Marne (Sep 6-10 1914)	263,000
Battle of Tannenberg (Aug-Sep 1914)	122,000
Battle of Masurian Lakes (Aug-Sep 1914)	125,000
Battle of Verdun (Feb-Dec 1916)	400,000
Battle of the Somme (Jul-Nov 1916)	615,000
Third Battle of Ypres (Pssechendaele) Jul-Nov 17	325,000
Spring Offensive (Ludendorff Offensive, Kaisers Battle) Mar-Apr 1918	850,000
Hundred Days Offensive (Jul-Nov 1918)	1,070,000

Construct a scatter plot and draw a line of best fit



a. State the linear regression equation represented by the data table when $x = 0$ is used to represent each battle in chronological order and *y* is used to represent the number of allied casualties in the thousands. Round all values to the *nearest hundredth*.

b. State the correlation coefficient to the *nearest hundredth* and determine whether the data suggest a strong or weak association between the battle and number of allied casualties.

c. If a 25^{th} major battle is fought, based upon the linear regression equation, what would be the estimated number of allied casualties that would occur to the *nearest person*?

d. As the war progressed, what do you notice from the data and the graph about each battle and the number of allied casualties? What may be some of the reasons that with each battle some of the casualties may be higher than others?

e. Write down 10 interesting facts of one of the major battles that is of interest to you from the data you provided?