AP Statistics 2 Name: _____

Unit 2 Project

Outcome	*Advancing*	*Meets*	*Exceeds*
Describing Relationships - Describe and analyze relationships between two variables.		Create scatter plots and use them to analyze the relationship between two variables and make predictions. 32 points on Part 1	*Meets* and use contextual evidence to justify when a prediction or interpretation is invalid. Meets and 6 points on Part 2

LAUNCH:

The esteemed student council of Brooklyn Frontiers High School is interested in finding ways to support students to earn credits and graduate. One area of study for the council is comparing attendance rates and the number of credits earned.

Hypothesis: Students with a higher daily attendance percentage will earn more credits.

Do you agree or disagree with this hypothesis? Justify your answer.

Part I: [*Daily Attendance vs Credits Earned*]

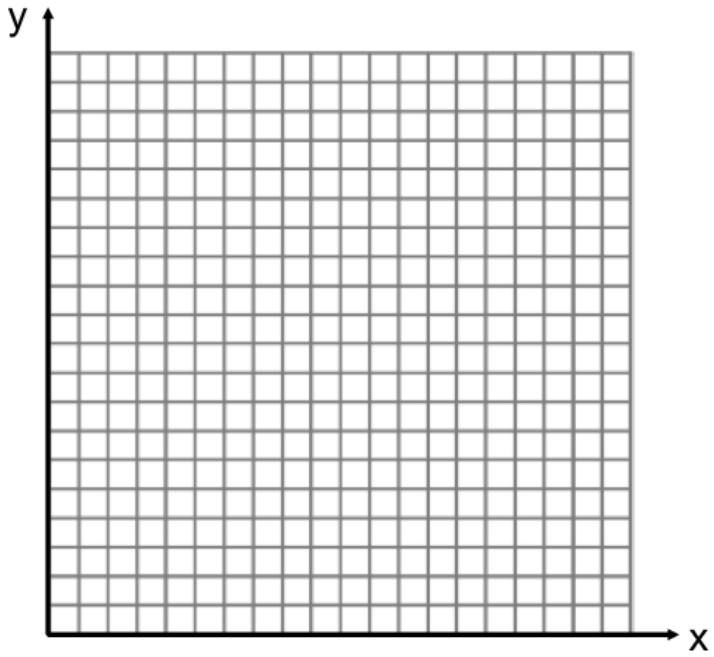
1) In Cycle 1, there were 148 students at Brooklyn Frontiers. Eddie and Eric selected the first 15 students so that we could see if there is a relationship between daily attendance rate and credits earned. Do you think that this was a good method of selecting 15 students? Justify your response. [2 points]

AP Statistics 2 Name: _____

2) Complete the table below using your data sheet. Round all values to *the nearest hundredth*. [1 point]

Student #	**Daily Attendance % (*x*)**	**Credit accumulation (*y*)**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

3) Draw and label a scatter plot on the grid below. Be sure to use consistent and appropriate scales. [4 points]



4) Are there any unusual points or patterns in your scatter plot? Explain. [2 points]

5) Determine the correlation coefficient, *r*, of this data. Round your value to the *nearest hundredth*. Explain what this value tells us about the relationship between attendance percentage and credit accumulation. [3 points]

6) Use your calculator to determine the equation of the line of regression for this data. Round all values to the *nearest hundredth.* [2 points]

7) State the slope of your line of regression equation. Interpret this value in the context of this data. [3 points]

8) State the y-intercept of your line of regression equation. Interpret this value in the context of the data. [3 points]

9) A new student arrives at our school who has a 58% attendance rate from their previous school. Use your statistician skills to predict how many credits they will earn in their first trimester at Brooklyn Frontiers. Show your work. [2 points]

10) Another new student arrives at our school who has a 100% attendance from their previous school. Use your statistician skills to predict how many credits they will earn in their first trimester at Brooklyn Frontiers. Show your work. [2 points]

11) Ask Eric or Eddie to share with you your current attendance rate for your time at BFHS this year.

Current attendance rate: _____

12) Based on your current attendance rate, predict how many credits that you will earn this trimester. Show your work. [2 points]

13) Do you think that the prediction that you made above is accurate? Explain why or why not. [2 points]

AP Statistics 2 Name: _____

14) Complete the residual table below. [7 points]

Student Number	Attendance rate x	Actual Credits Earned, y	Predicted Credit Earned	Residual
1				
2				
3				
4				
5				
6				
7				
8				
9				
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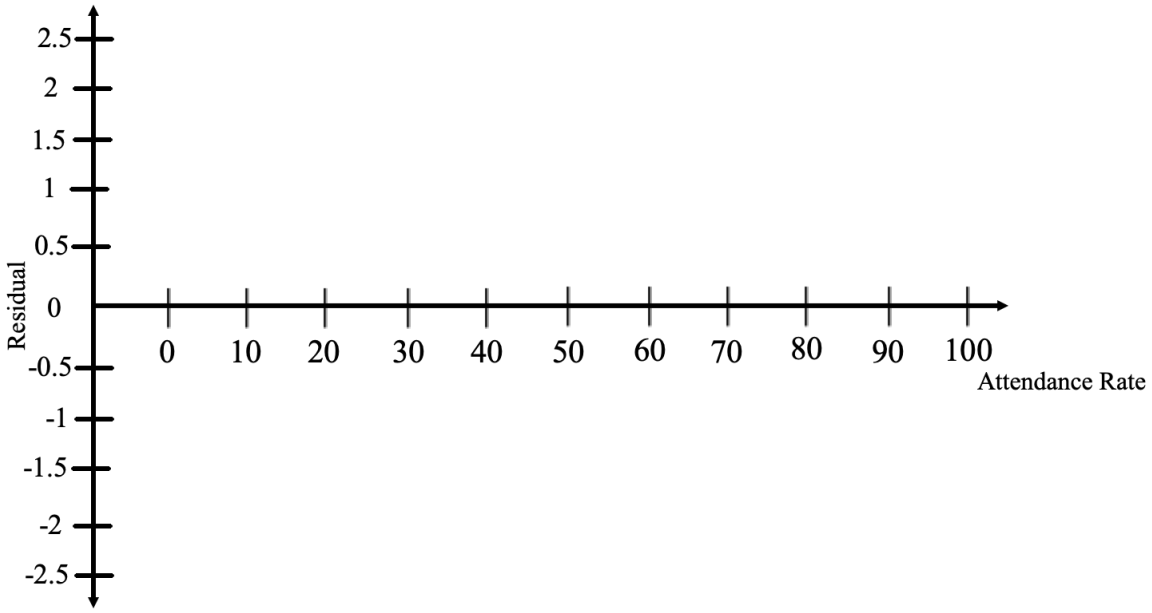
11				
12				
13				
14				
15				

15) Create a residual plot based on the residual table above. [2 points]



16) Based on the residual plot, is a linear model a good fit for this data? Justify your response. [2 points]

17) How might we address what we learned in this project as a school? What can we do to improve the number of credits that students earn each trimester? List as many ideas as you can think of. [2 points]

18) In your opinion, what are some things we could do as a school to improve daily attendance? List as many ideas as you can think of. [2 points]

19) Pick one item from the list that you created above that you feel is the *most* important for improving student attendance. This is what will be given to the student council. What makes this an important way to improve student attendance, in your opinion? [2 points]

Part 2 - Exceeds

20) There is a student in the data set who had a 100% attendance rate in Cycle 1 but earned 3 credits. Does this person's data represent an influential point? Justify your response using information from the equation of the line of regression. [3 points]

21) There is a different student in the data set who had a 76% attendance rate in Cycle 1 but earned 5 credits. Does this person's data represent an influential point? Justify your response using information from the equation of the line of regression. [3 points]