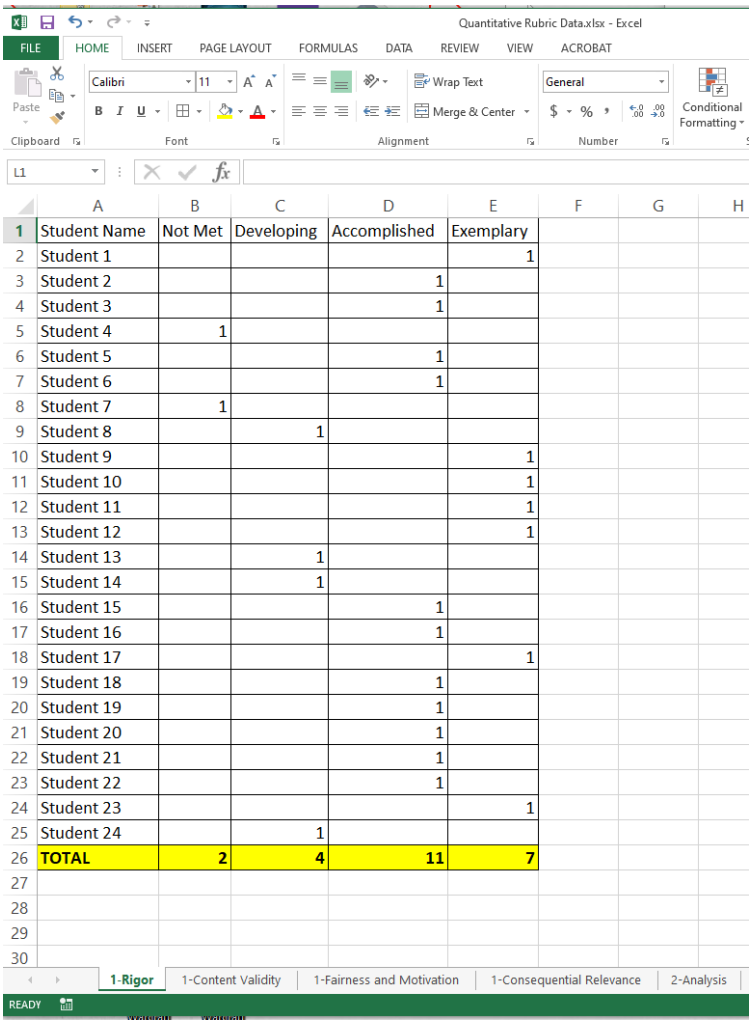
Analyzing and Transforming Quantitative Data

1 - Collected Data Setup

Because your data were collected from a grading rubric, your data will be setup using the criteria from the PBL summative assessment, and the proficiency levels you used to rate their performance.

In this case, you will create tabbed sheets for each of the criteria you have in your rubric. In this example, the rubric has four criteria (as seen in the tabs at the bottom), and this image is the first criteria, "Rigor". The setup of columns is the names of students and then the proficiency levels your rubric had.

The next slide describes what all the "1's" and totals mean.

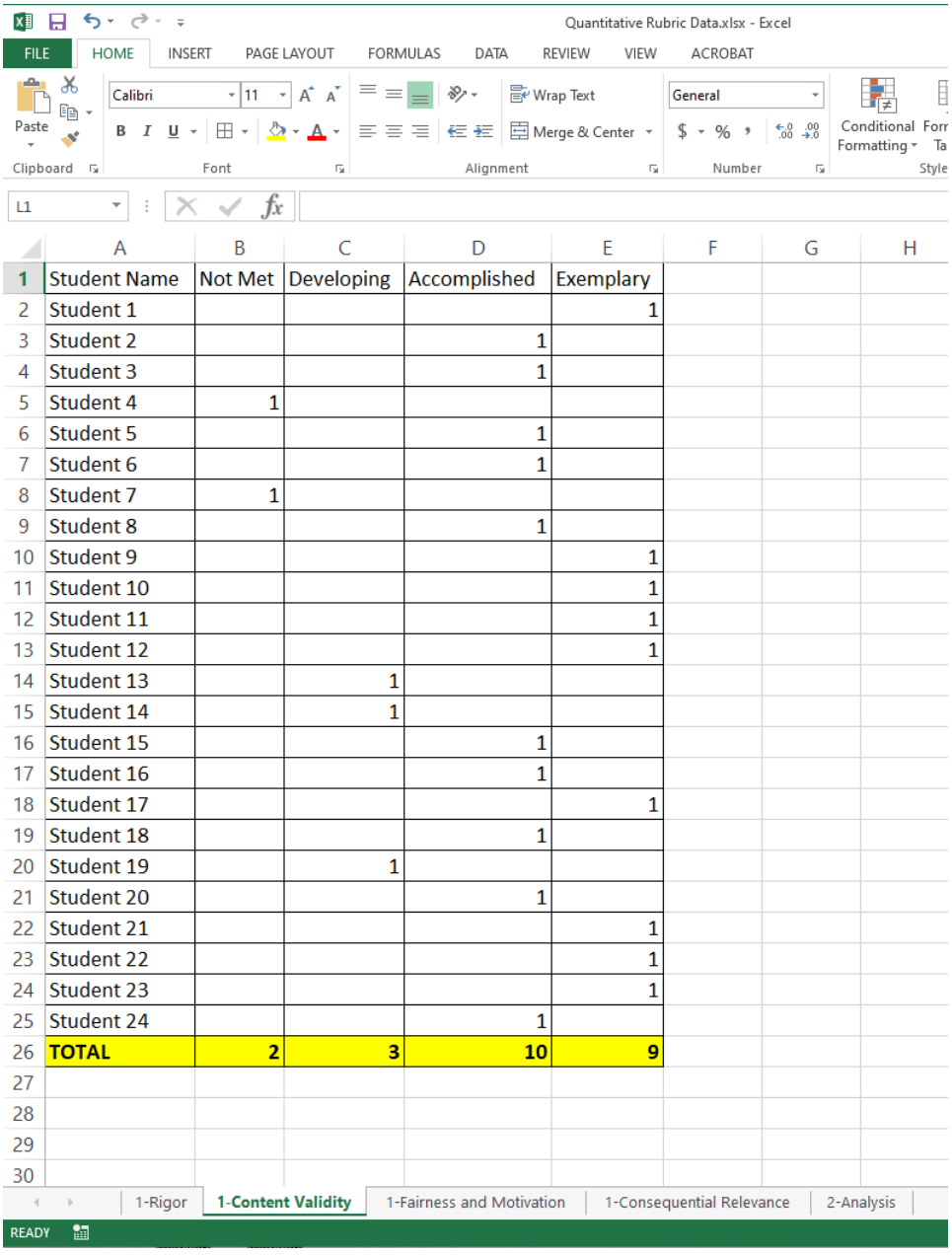


	A	B	C	D	E	F	G	H
1	Student Name	Not Met	Developing	Accomplished	Exemplary			
2	Student 1				1			
3	Student 2			1				
4	Student 3			1				
5	Student 4	1						
6	Student 5			1				
7	Student 6			1				
8	Student 7	1						
9	Student 8		1					
10	Student 9				1			
11	Student 10				1			
12	Student 11				1			
13	Student 12				1			
14	Student 13		1					
15	Student 14		1					
16	Student 15			1				
17	Student 16			1				
18	Student 17				1			
19	Student 18			1				
20	Student 19			1				
21	Student 20			1				
22	Student 21			1				
23	Student 22			1				
24	Student 23				1			
25	Student 24		1					
26	**TOTAL**	**2**	**4**	**11**	**7**			
27								
28								
29								
30								

1 - Collected Data Setup Continued

While you did use a rubric for each student to determine a grade, your rubrics likely had numbers for each proficiency level to indicate the amount of points a student could get for each rating. For this analysis, the specific number doesn't matter. What matters is that you count the frequency that each rating was giving, and that you set it up in such a way that it can be numerically counted.

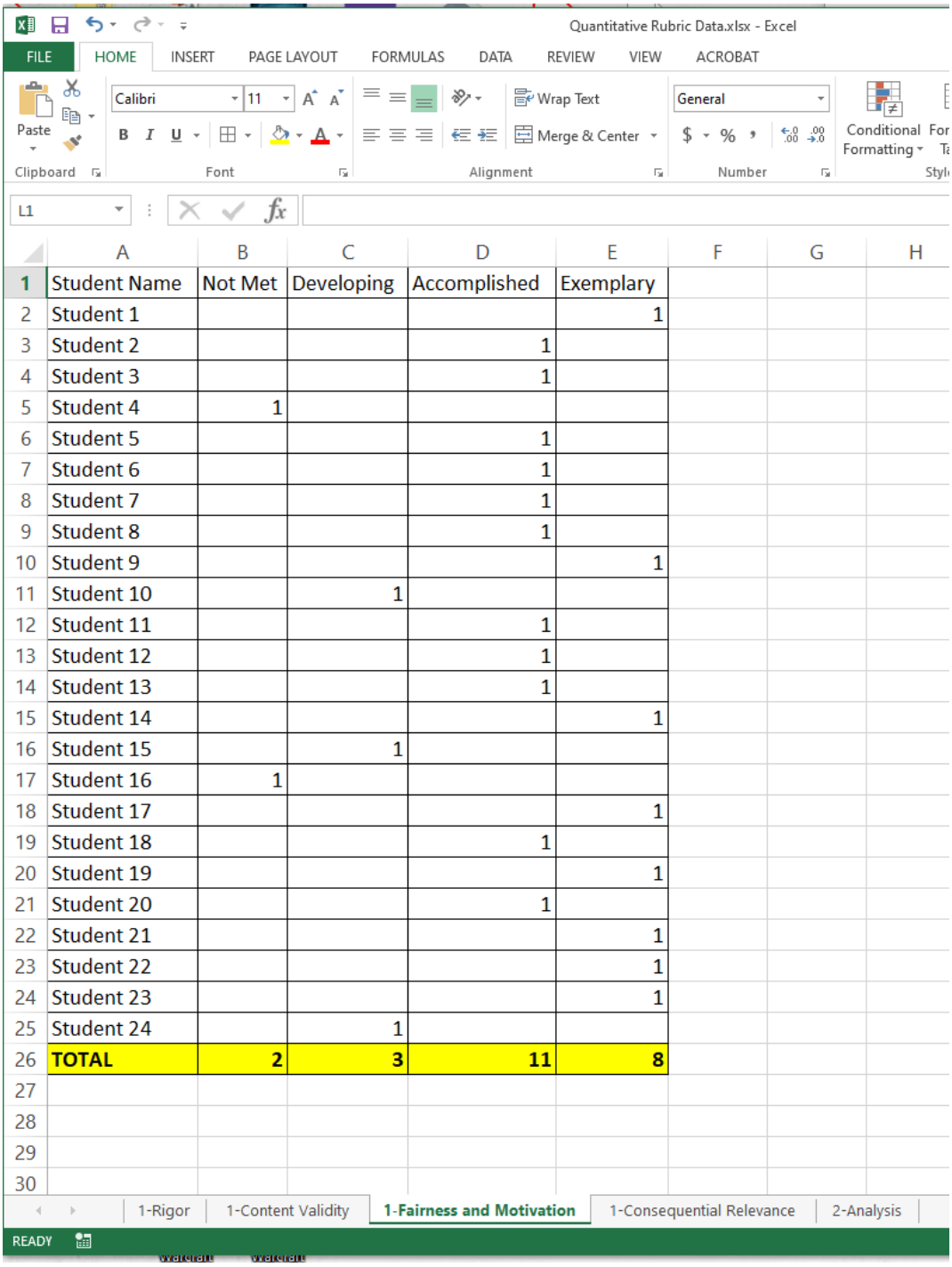
Therefore, you add a "1" for the rating the student get. In this fashion, each rating gets counted equally, as the example indicates. In order for that to happen, you need to also add a "TOTAL" row at the bottom of the list with a simple SUM formula, as the example shows.



	A	B	C	D	E	F	G	H
1	Student Name	Not Met	Developing	Accomplished	Exemplary			
2	Student 1				1			
3	Student 2			1				
4	Student 3			1				
5	Student 4	1						
6	Student 5			1				
7	Student 6			1				
8	Student 7	1						
9	Student 8			1				
10	Student 9				1			
11	Student 10				1			
12	Student 11				1			
13	Student 12				1			
14	Student 13		1					
15	Student 14		1					
16	Student 15			1				
17	Student 16			1				
18	Student 17				1			
19	Student 18			1				
20	Student 19		1					
21	Student 20			1				
22	Student 21				1			
23	Student 22				1			
24	Student 23				1			
25	Student 24			1				
26	**TOTAL**	**2**	**3**	**10**	**9**			
27								
28								
29								
30								

1 - Collected Data Setup Continued

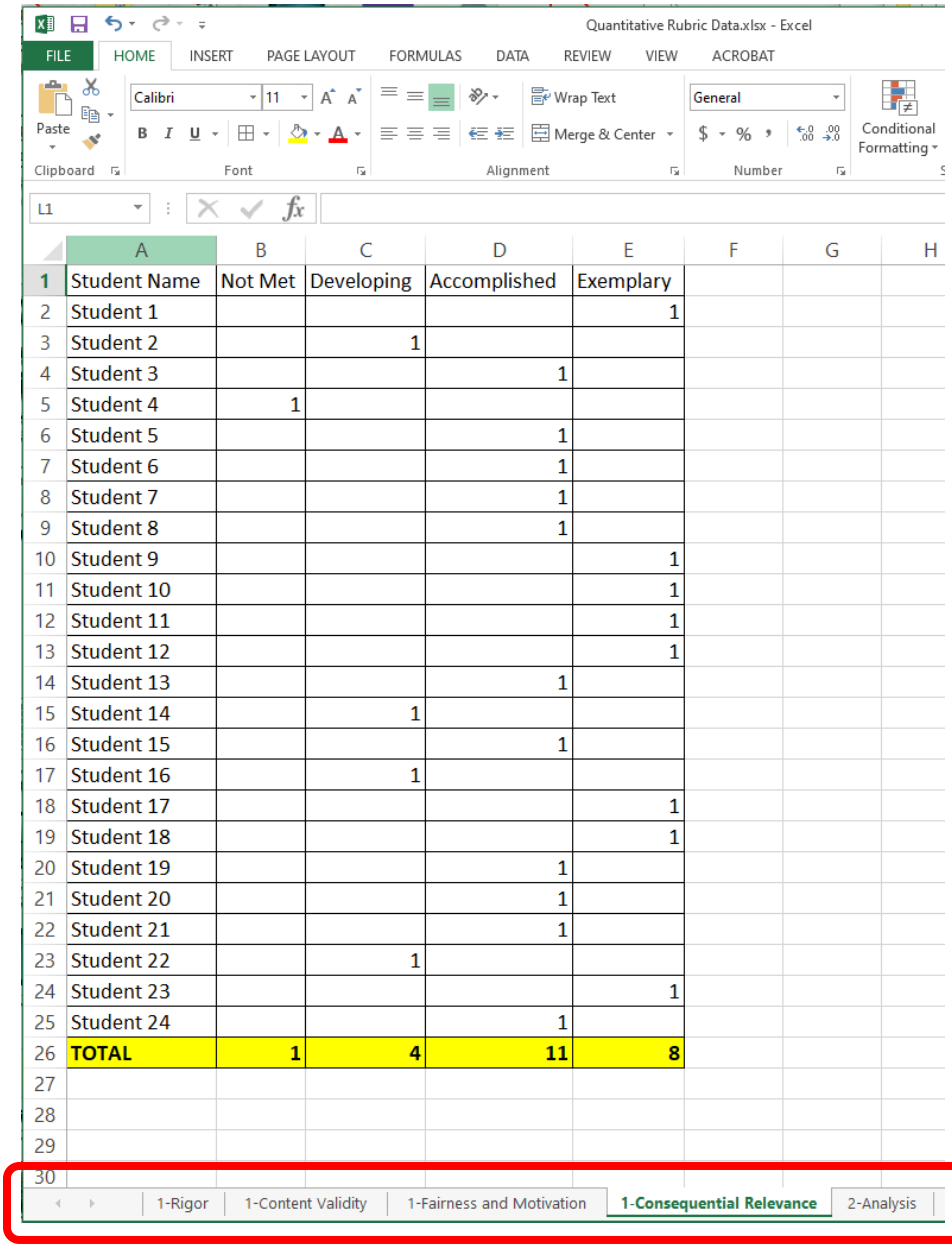
You will repeat the process for adding your data for each sheet in your spreadsheet that has a criteria from your rubric. In this example, the grading rubric had four criteria, and the image here is showing the third criteria with data and a totals row.



	A	B	C	D	E	F	G	H
1	Student Name	Not Met	Developing	Accomplished	Exemplary			
2	Student 1				1			
3	Student 2			1				
4	Student 3			1				
5	Student 4	1						
6	Student 5			1				
7	Student 6			1				
8	Student 7			1				
9	Student 8			1				
10	Student 9				1			
11	Student 10		1					
12	Student 11			1				
13	Student 12			1				
14	Student 13			1				
15	Student 14				1			
16	Student 15		1					
17	Student 16	1						
18	Student 17				1			
19	Student 18			1				
20	Student 19				1			
21	Student 20			1				
22	Student 21				1			
23	Student 22				1			
24	Student 23				1			
25	Student 24		1					
26	**TOTAL**	**2**	**3**	**11**	**8**			
27								
28								
29								
30								

1 - Collected Data Setup Continued

This example shows the fourth criteria from the rubric with data translated to "1's" and a totals row with sums for each proficiency level the rubric used. Please make note that your proficiency levels may look different, depending on the age of the children and how you have chosen to rate the levels of quality in a project.



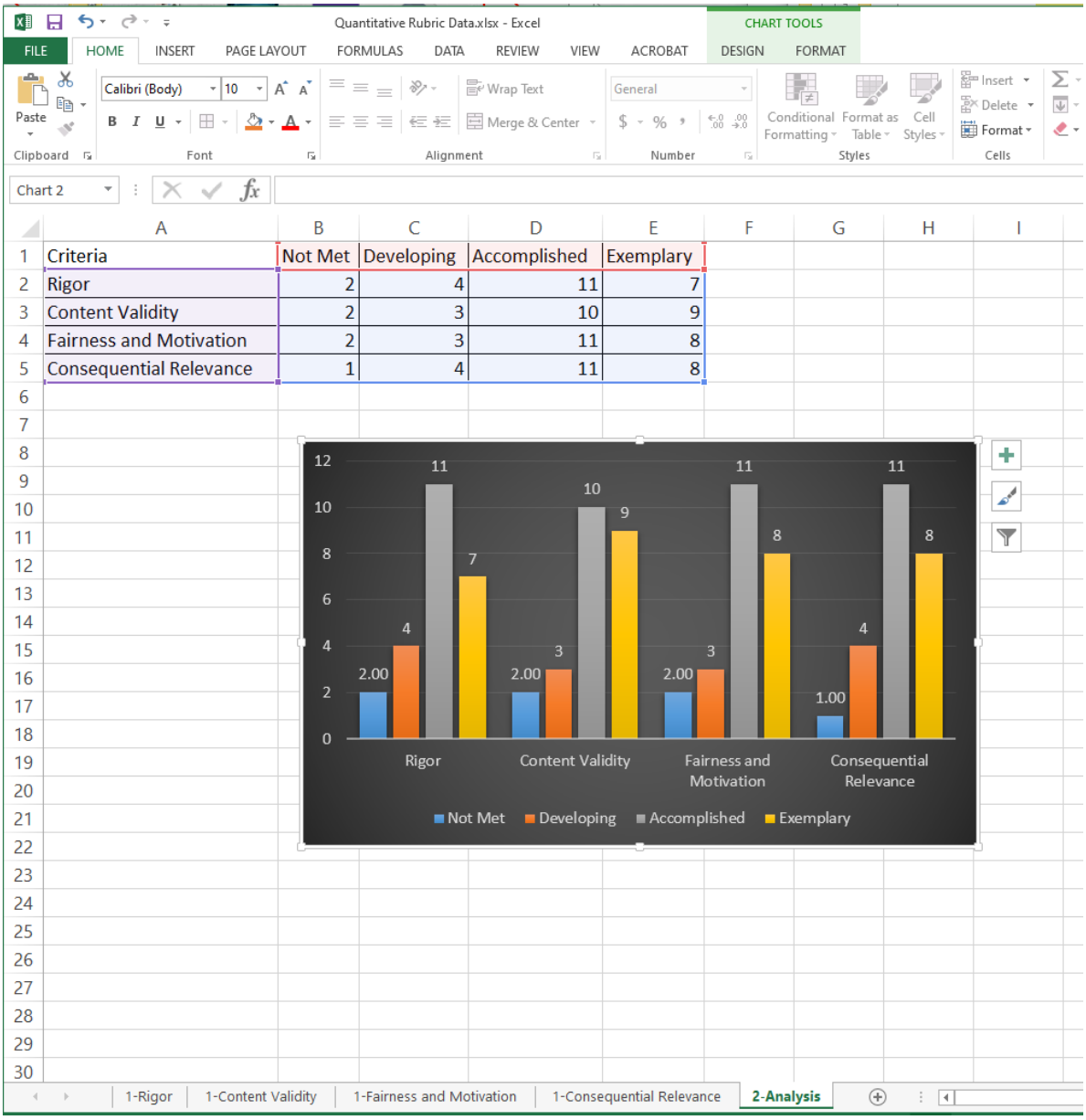
	A	B	C	D	E	F	G	H
1	Student Name	Not Met	Developing	Accomplished	Exemplary			
2	Student 1				1			
3	Student 2		1					
4	Student 3			1				
5	Student 4	1						
6	Student 5			1				
7	Student 6			1				
8	Student 7			1				
9	Student 8			1				
10	Student 9				1			
11	Student 10				1			
12	Student 11				1			
13	Student 12				1			
14	Student 13			1				
15	Student 14		1					
16	Student 15			1				
17	Student 16		1					
18	Student 17				1			
19	Student 18				1			
20	Student 19			1				
21	Student 20			1				
22	Student 21			1				
23	Student 22		1					
24	Student 23				1			
25	Student 24			1				
26	**TOTAL**	**1**	**4**	**11**	**8**			
27								
28								
29								
30								

Please note that all the spreadsheets shown as examples above are all found in the same file, only in different tabs, as indicated above.

2 - Data analysis

Once you have your collected data setup, it is time to de-identify it by removing student names, and graphing the overall achievement levels.

As shown in this example, you setup your first column with the criteria from your rubric. The next columns contain the proficiency levels you used in your rubric. Once the columns are setup, then you can transfer your totals to each of the cells as indicated in this example. This will allow you to do a quantitative analysis and a graphical representation of it.



2 - Data Analysis Continued

In the previous slide, you saw this same example, and it provided you with instructions for entering data sums. Now you will generate an appropriate graph to visually summarize your analysis of your quantitative data like the one in this example.

This is just the design I used, but you will have multiple options. It should be noted that all graphs are found in the Insert tab of Excel, and the design, color, orientation, labels and numerous other options are available for your graph. These will be personal choices you make.