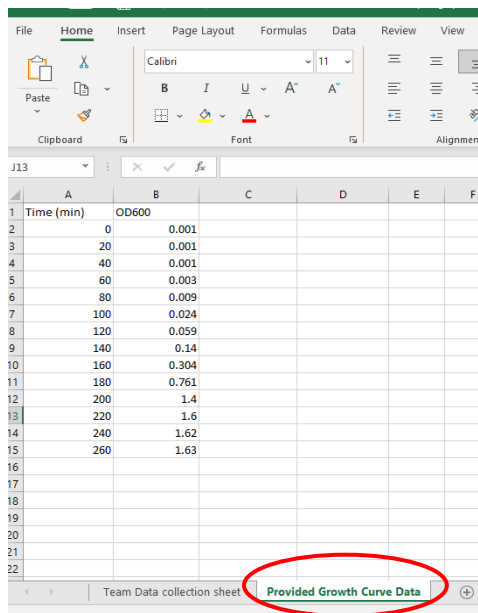


Graphing a Bacterial Growth Curve in Excel (PC)

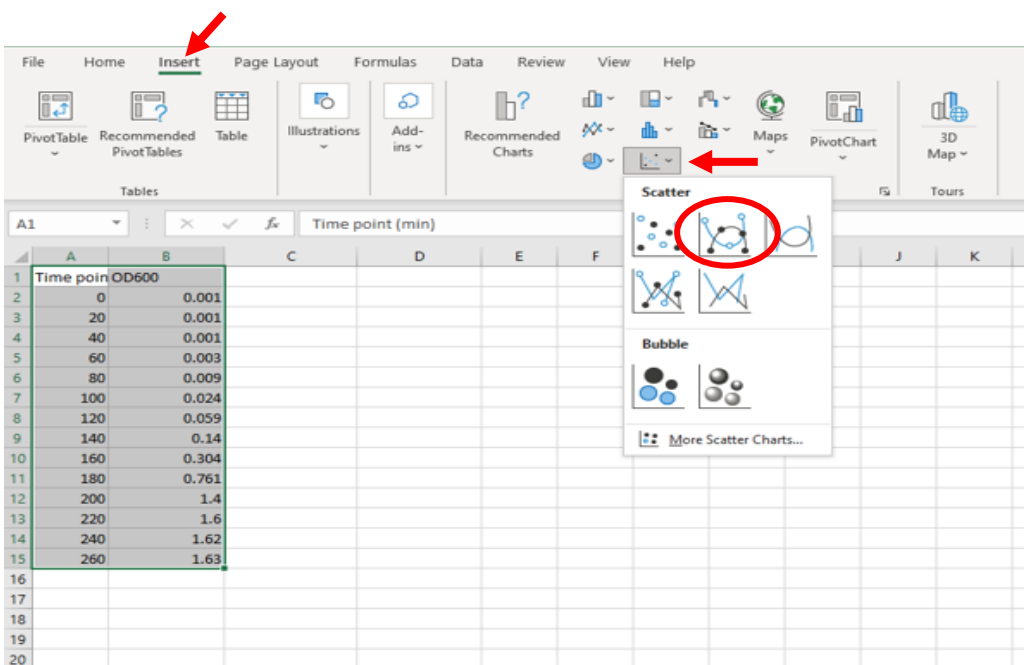
You will be creating a bacterial growth curve using the Excel program, a commonly used spreadsheet program.

1. Open the 'Bacterial Growth Curve Spreadsheet'.
2. Click on the tab labeled 'Provided Growth Curve Data'. This will open a spreadsheet that already has bacterial growth data entered. You can see that column A contains time point data, in minutes. Column B contains OD600 readings taken at each time point.



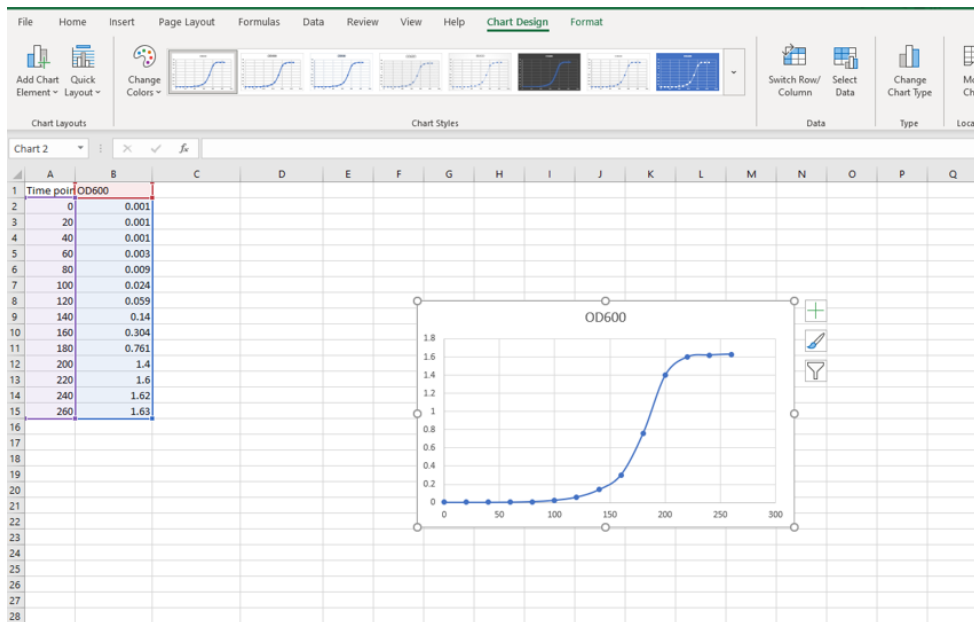
Time (min)	OD600
0	0.001
20	0.001
40	0.001
60	0.003
80	0.009
100	0.024
120	0.059
140	0.14
160	0.304
180	0.761
200	1.4
220	1.6
240	1.62
260	1.63

3. Select the entries in both column A and B. Select the 'Insert' tab at the top of the page (indicated by the slanted red arrow). Then select the line graph icon (indicated by the horizontal red arrow). When that window opens, select the type of graph shown in the figure below (red circle).

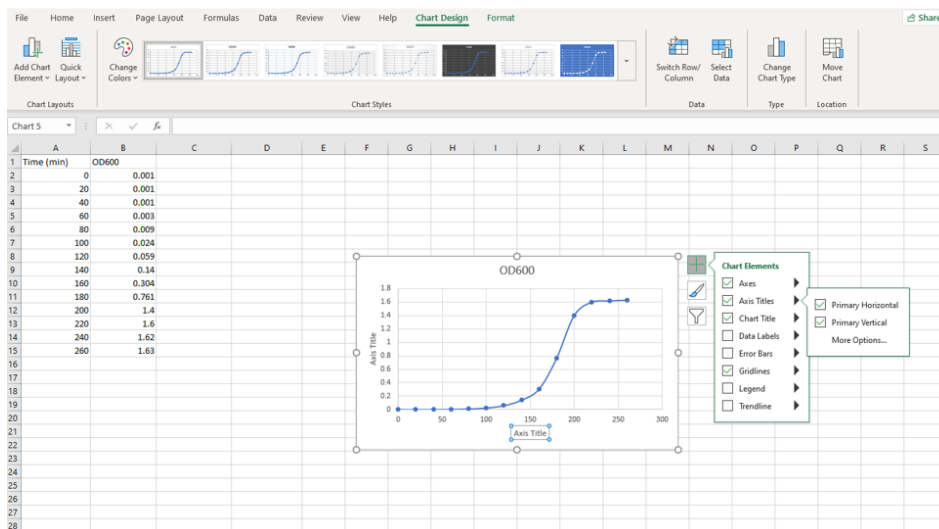


Module 2, Lesson 3: Graphing a Bacterial Growth Curve

- This will plot your data with the time points on the y-axis and the OD600 readings on the x-axis. The axes are not properly labeled yet and the graph title is incorrect.

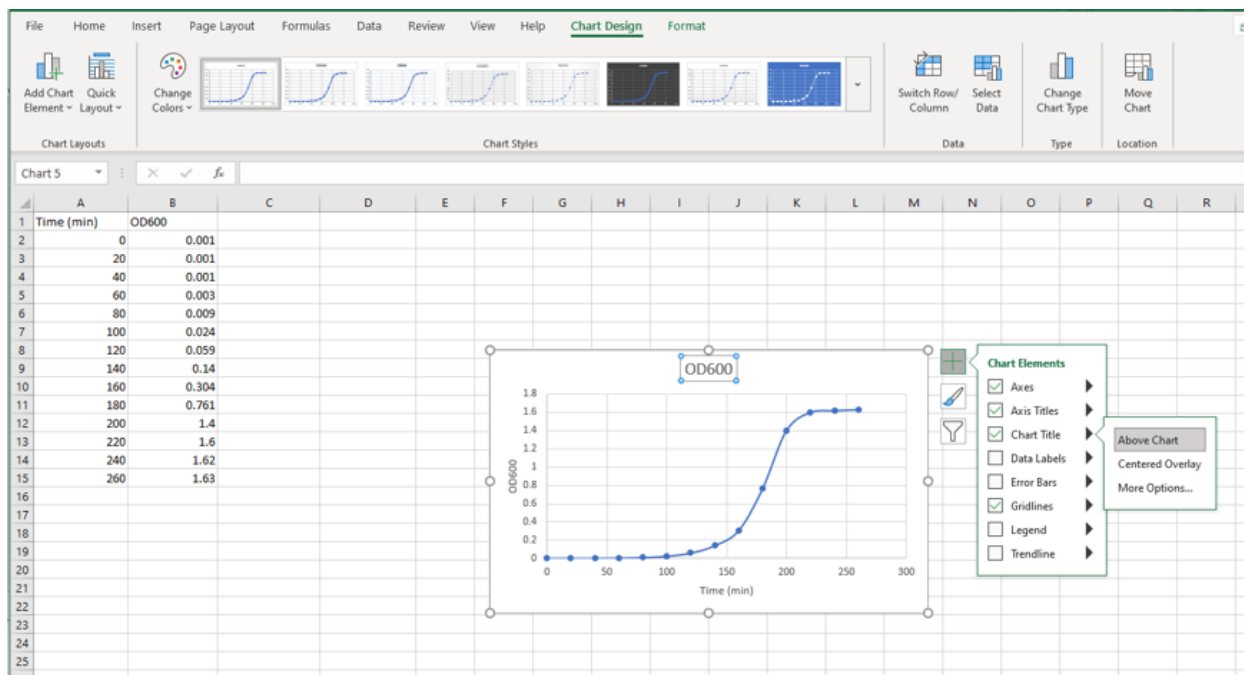


- Click inside of the graph box to make the 3 icons appear to the right of the graph box. Click on the '+' icon. Make sure the 'Axis Titles' box is checked. Click on the arrow next to 'Axis Titles' and 'Primary Horizontal' and 'Primary Vertical' choices will appear. Make sure both of those boxes are checked. Now the axis labels will be activated and you can click on them and rename the axes.

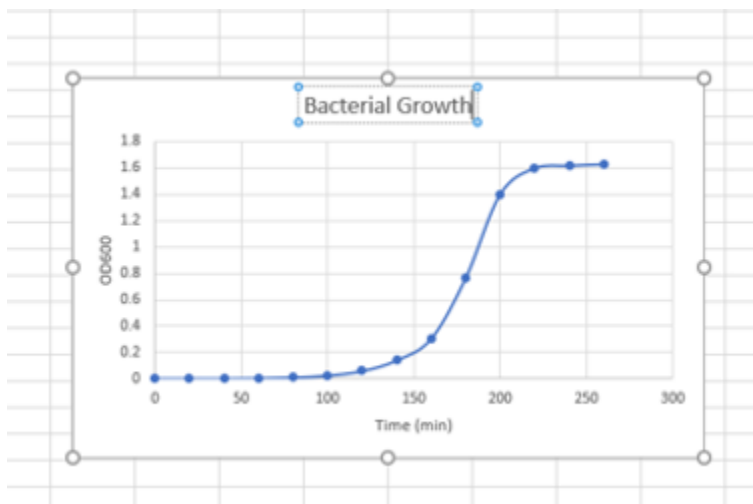


Module 2, Lesson 3: Graphing a Bacterial Growth Curve

- Change the x-axis label to: Time (min). Change the y-axis label to: OD600. Now the graph should look like this. The chart title will still be incorrect. Click on the '+' icon again. Make sure the 'Chart Title' box is checked. Click on the arrow to the right of the 'Chart Title' box. This will open a window with choices for where the title appears. It also activates the chart title text. Click on the chart title text and change it to: Bacterial Growth.



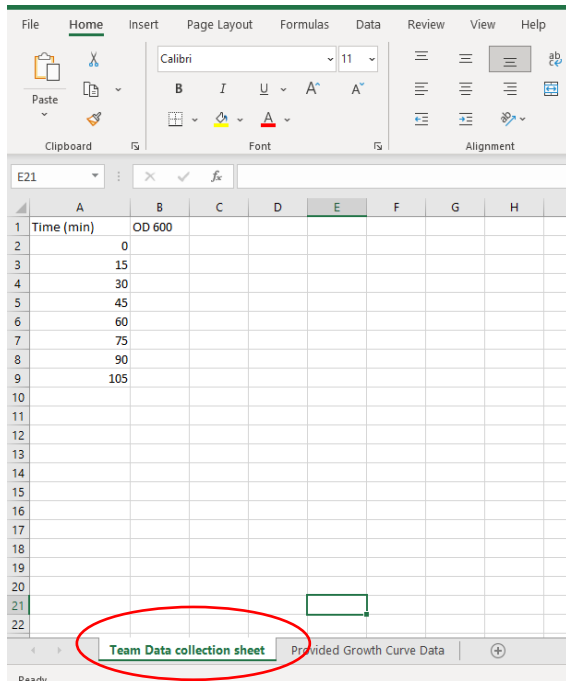
- Now your graph should look like this.



What phases of the growth curve can you see?

Module 2, Lesson 3: Graphing a Bacterial Growth Curve

- Next click on the tab labeled 'Team Data Collection Sheet' to open up a spreadsheet where you can input your own bacterial growth data. Change the time entries as needed. Input your OD600 readings. Create a graph using the protocol you have just used.



- Which phases of the growth curve can you see in this graph?