

# Creating Alternating Treatment Design

## Introduction:

This tutorial demonstrates how to construct an Alternating treatment design graph. An Alternating Treatment graph can be utilized for a study in which different treatments are applied in quick succession to efficiently identify the effects of individual treatments. In the practice of behavior analysis, you will see functional analysis graphed using an alternating treatment design.

## Part One: Setting Up the Data in Excel

The first thing you will do is open up Microsoft Excel and open up a new blank sheet. Next, type in your data. Under Column A, type in "Sessions" for the days of the intervention. Columns B, C, D, and E are where you will input your data. For the purposes of this graph, use the functional analysis conditions as your interventions. Under column B, type in Attention for your first intervention. Under column C, type in Demand for the second intervention. Under column D, type in Alone for the third intervention. Finally, under column E, you will type in Control for the final intervention. Notice that when you enter data into the fields, the data alternate from one condition to the next, and there is only one value entered per session line.

	A	B	C	D	E
1	<b>Sessions</b>	<b>Attention</b>	<b>Demand</b>	<b>Alone</b>	<b>Control/Play</b>
2	1	3			
3	2			9	
4	3		4		
5	4				1
6	5			8	
7	6		2		
8	7	2			
9	8				0
10	9			8	
11	10		3		
12	11	3			
13	12				0
14	13	1			
15	14			9	
16	15		3		
17					

Figure 1: This is what the excel file will look like with all the data entered.

## Part 2: Creating the Alternating Treatment Design Graph

**Step 1:** Highlight the data including the data labels on top (do not highlight the sessions or the day.)

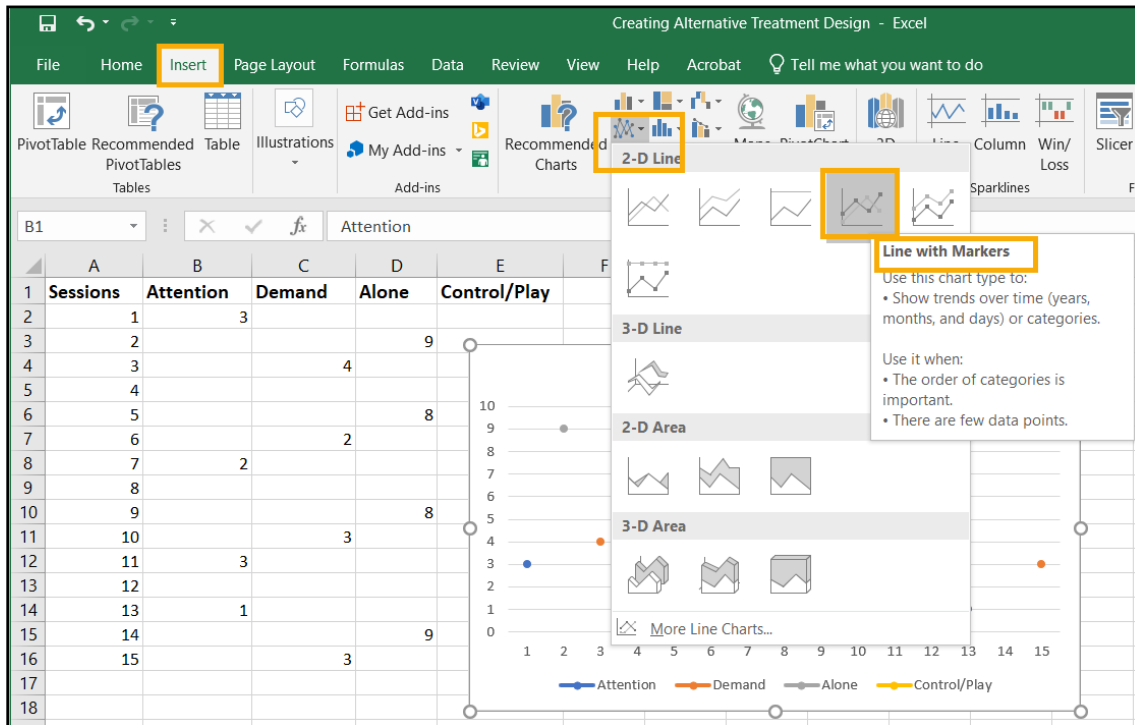


Figure 2: Select **Insert > Line Graph > 2-D Line > Line with Markers**. Excel will produce the graph based on the data that you've selected from your worksheet.

Once you have produced the graph, you will notice that the data points are visible, but the data paths are not. For the purposes of this alternating treatment design graph, you need to select the option to include the data paths.

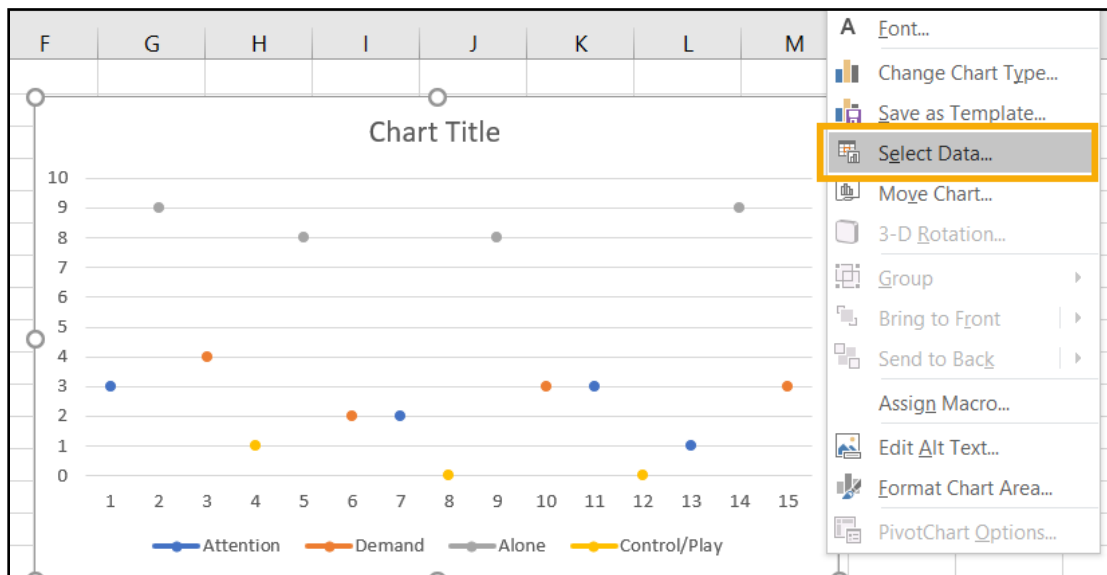


Figure 3: Right Click on the graph and choose "Select Data."

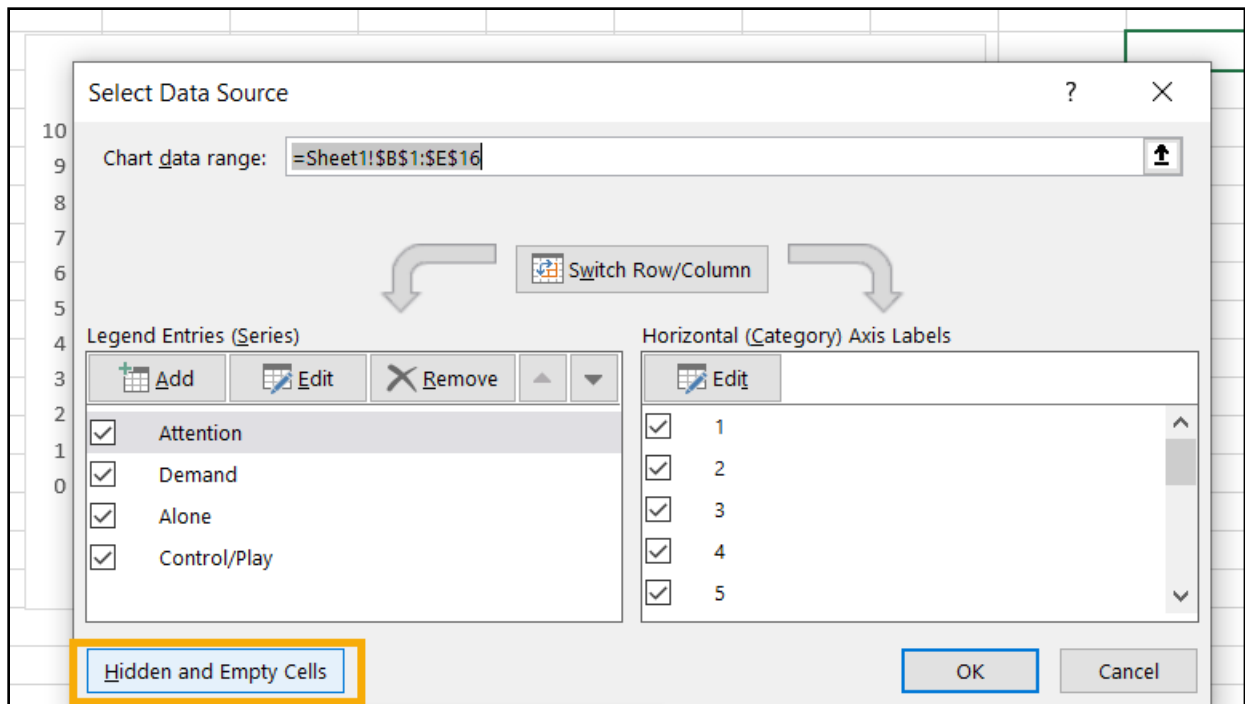


Figure 4: Select "Hidden or Empty Cells."

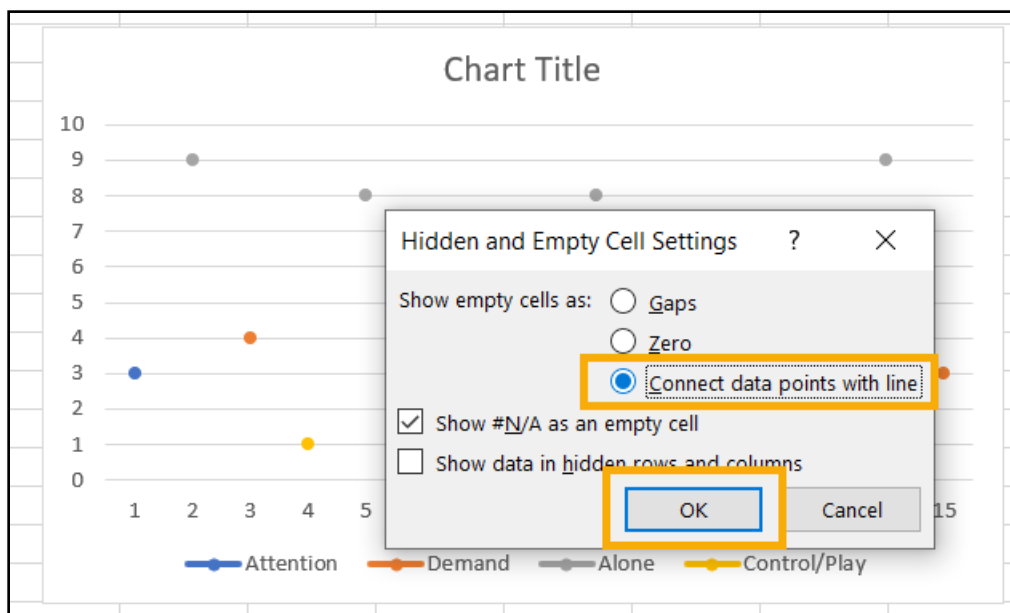


Figure 5: Select **Show empty cells as**> **Connect Data Points with Line**> then **OK**.

## Step 2: Remove Gridlines:

Once you have produced the graph, you are ready to format according to ABA style conventions. In order to format the graph, start by removing the gridlines from the graph. ABA graphs do not utilize the Gridline feature.

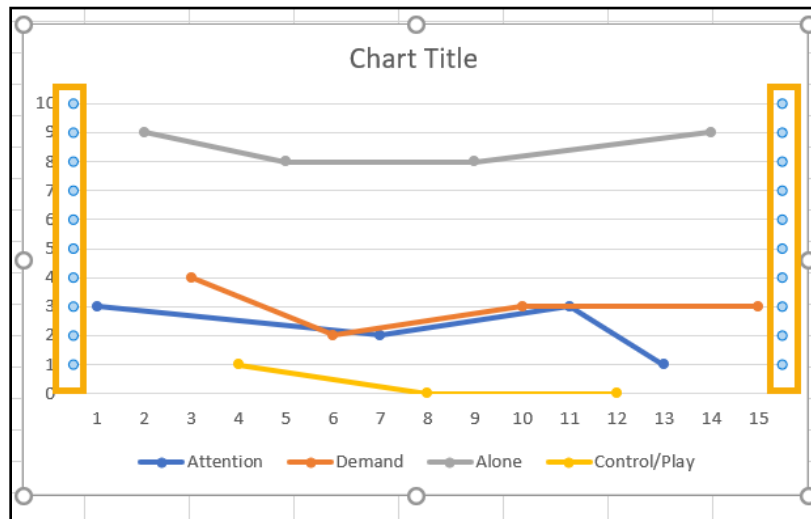


Figure 6: To remove the gridlines select them and hit delete button.

This will remove the grid lines from your graph. Next, label both the X and Y axes on the graph. All ABA graphs have the appropriate axis titles so that readers of the graph understand what the graph is representing.

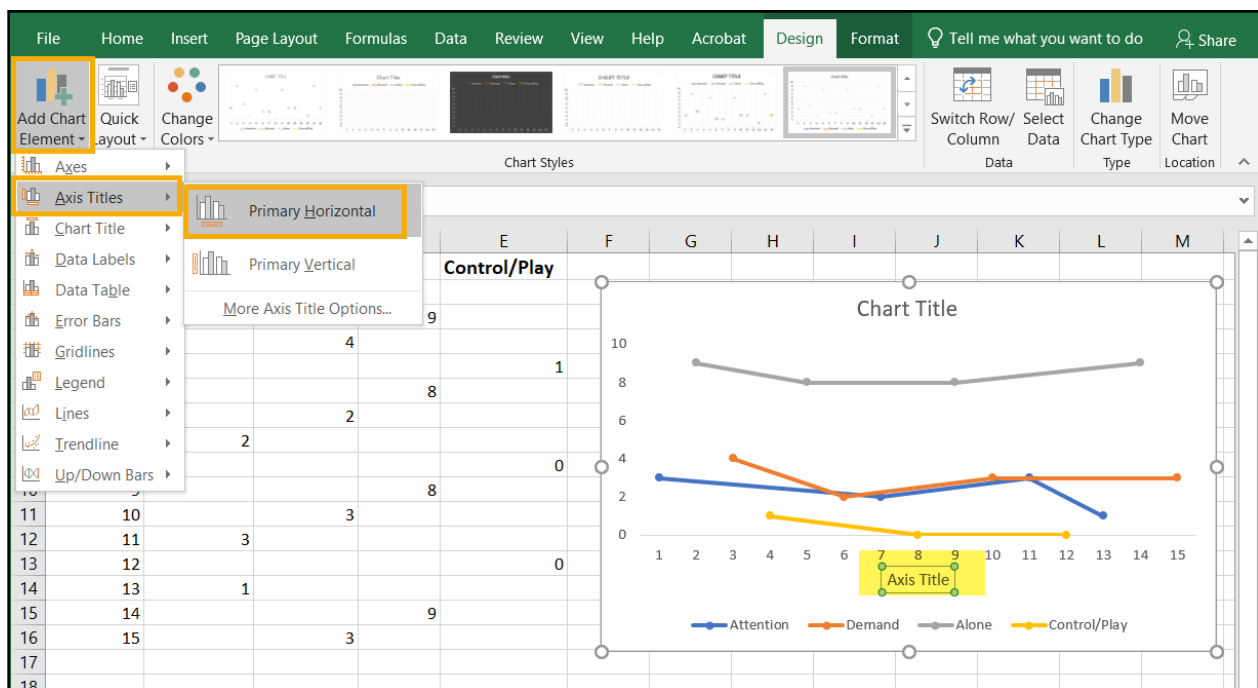


Figure 7: Select **Add Chart Element > Axis Titles > Primary Horizontal** and then type **"Sessions."**

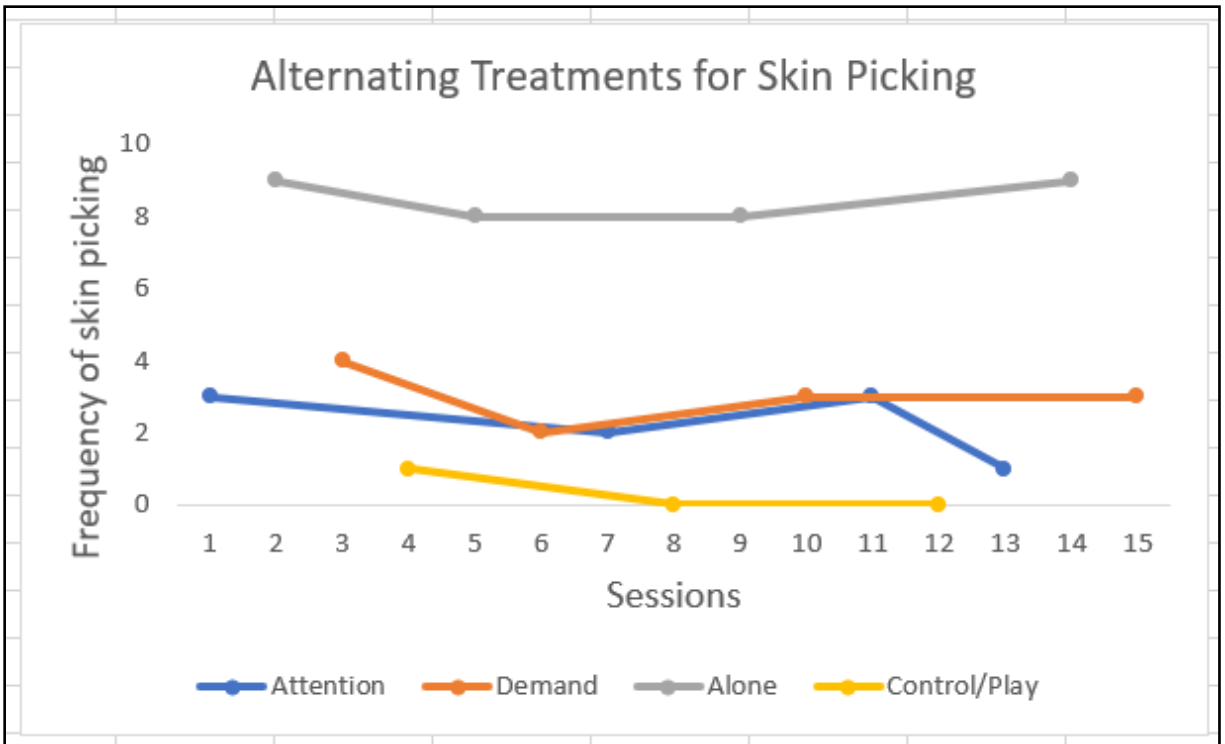


Figure 8: Repeat the same steps in order to add the title to the Y axis, “Frequency of skin picking.” Add title “Alternating Treatments for Skin Picking.”

### Part 3: Formatting the Data Series

Now, make sure that your data path and data points also meet ABA graphing conventions by making them black. Properly formatted ABA graphs do not use colorful data paths like the ones that naturally show up in the Excel program, so you will need to manually change the color of both the paths and the points.

#### Step 1: Change Color of the Data Path

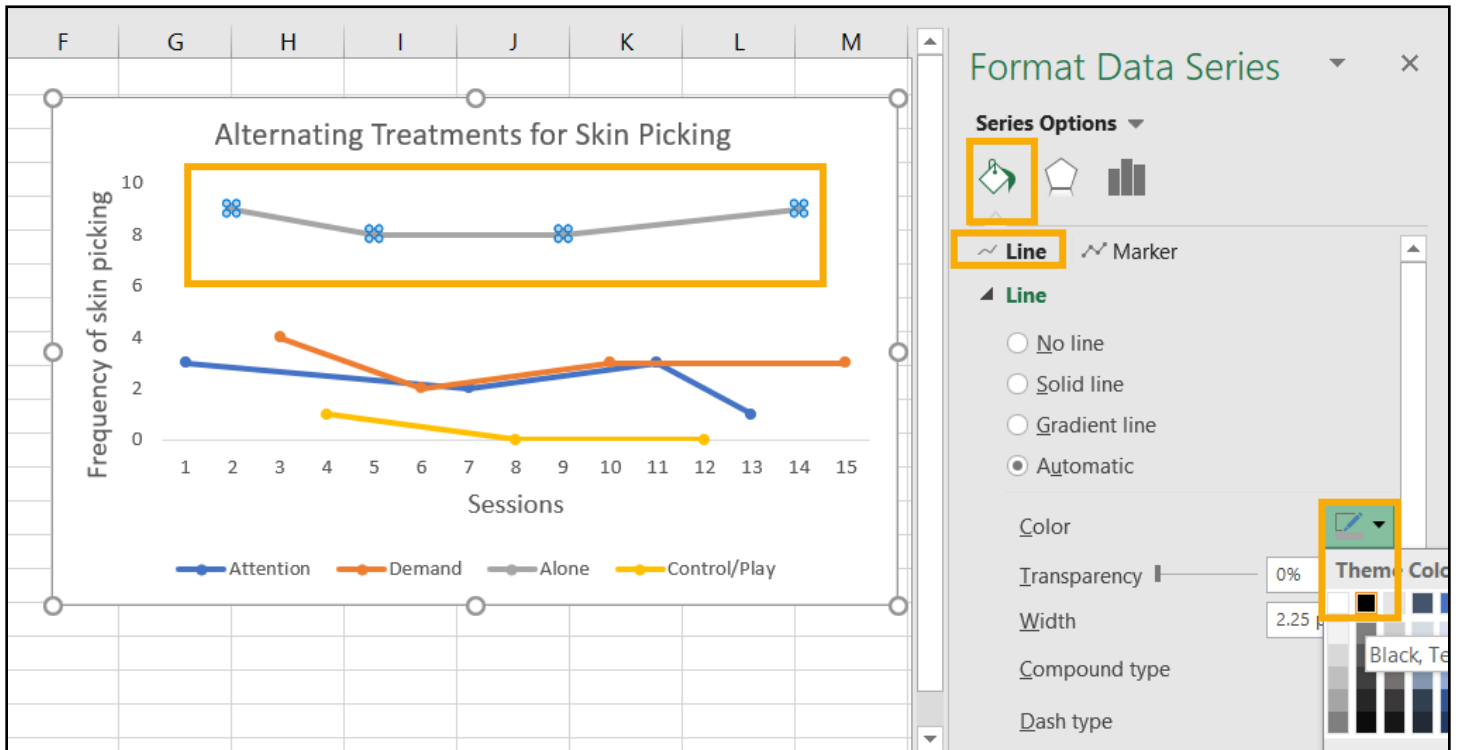


Figure 9: Click directly on the path in the graph, **Format Data Series** opens> **Paint Can** symbol> **Line** button, color selection icon> change default color to black.

Next, you'll need to change the data point, or what Excel calls the marker. There are two steps to changing the marker. The first step is to change the fill. Repeat the same steps used for changing the line. Next, you want to select border, and again choose black from the color palette in order to ensure that the outline of the Data point is also black.

One final thing that we need to do is change the shape of our data points so that our legend can help the reader of the graph discriminate which condition they are looking at. Follow the same process to change the color to black.

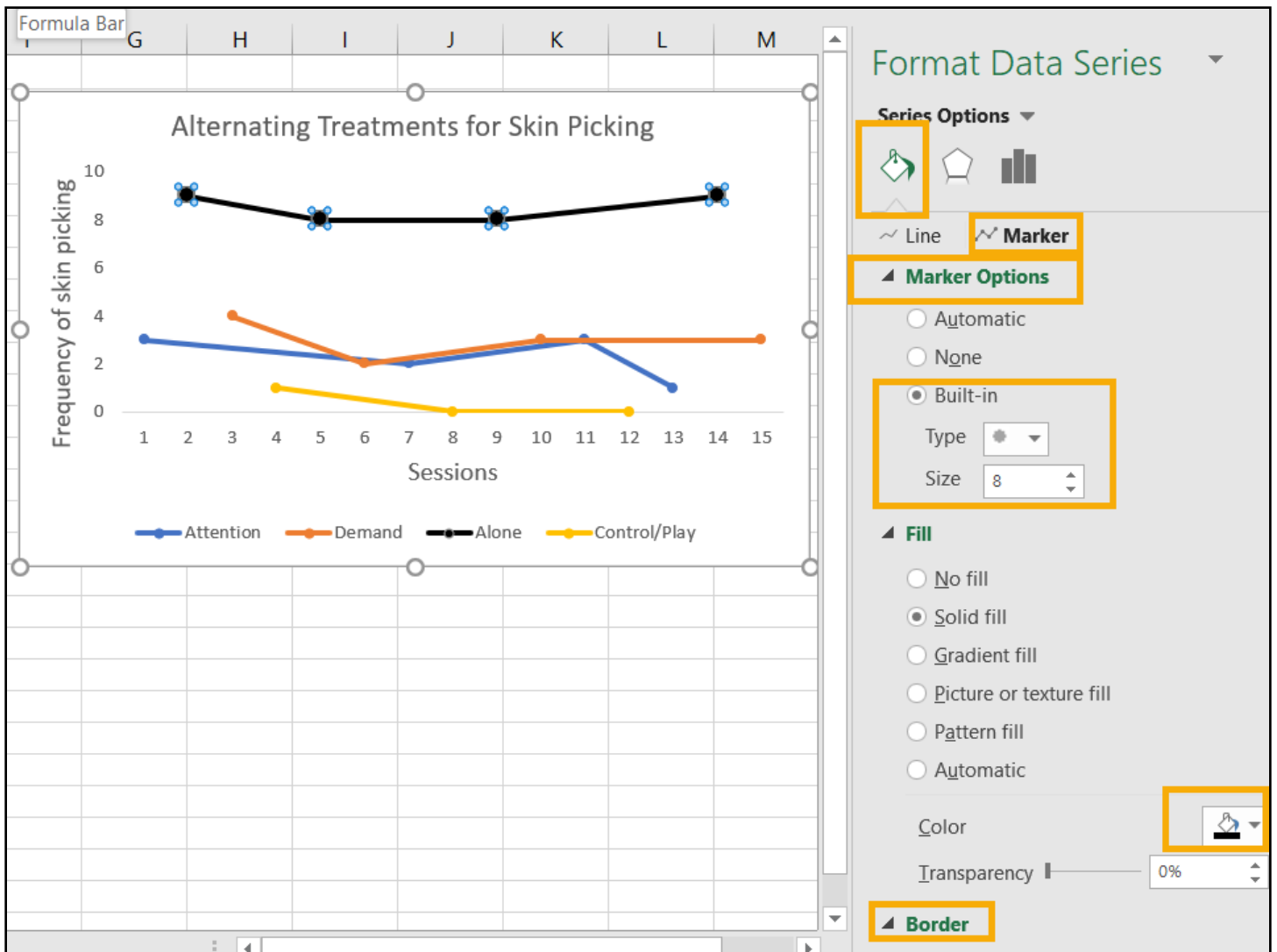
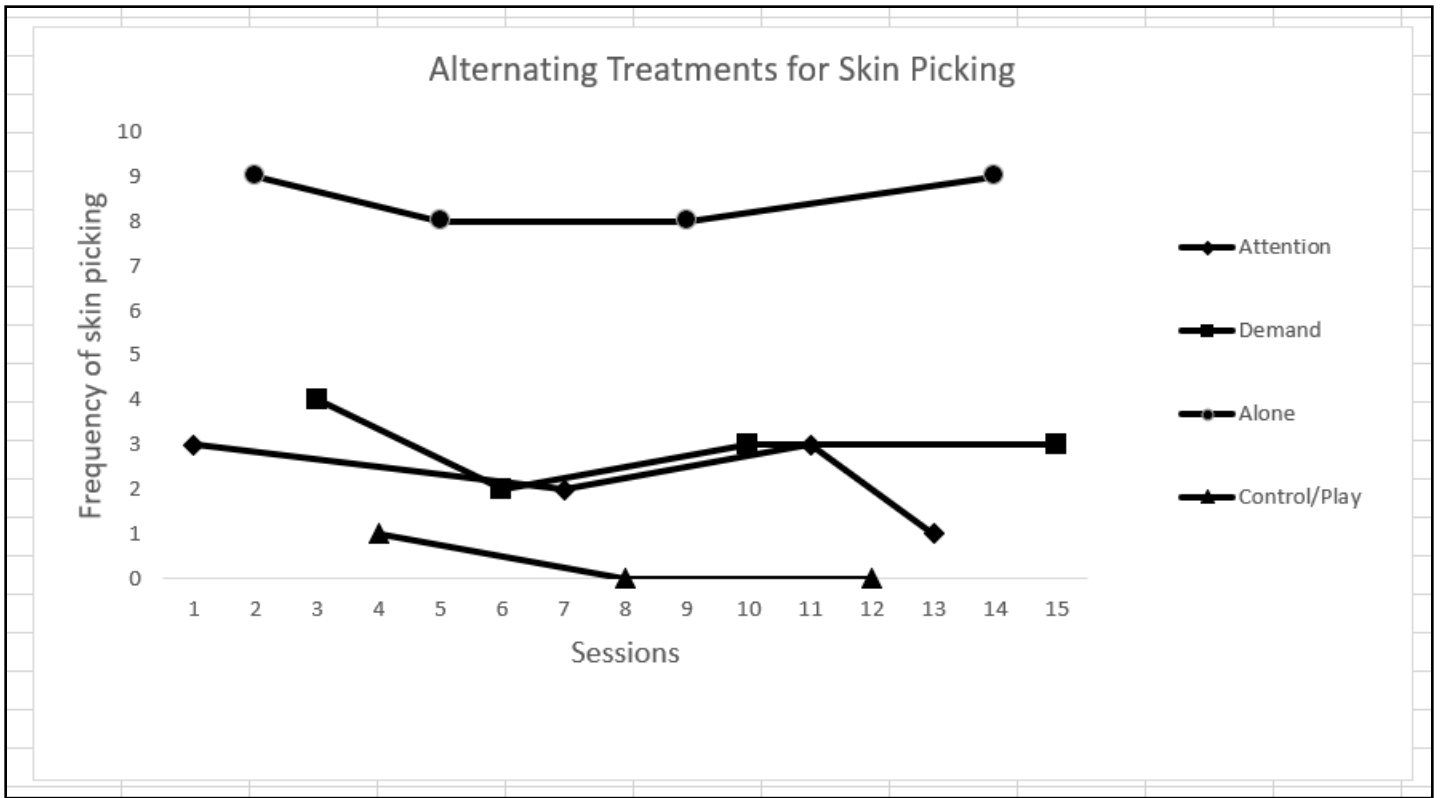


Figure 10: Following the same steps as before, Select **Marker**> **Marker Options**, click **Built-in**> **Circle**> Size 8> **Fill**> Color **black**. Do the same steps for each line.

Follow the same process with the remaining data paths. Place the legend on the side of the graph. **Note:** Make sure all your data points are consistent in size but in four different shapes.



*Figure 11: All data points and data paths are all black; the legend has moved to the side and reflects the data marker option for each condition.*

At this point, you have now finished the creation of you Alternating Treatment Design Graph. Thank you for taking the time to review this graphing tutorial! Happy Graphing!