WPHS Science Research Program

Graphing in Microsoft Excel
Part 2: Correlations

SWBAT: ***Use Microsoft Excel to create and edit a "Scatter Plot" and show a correlation.***

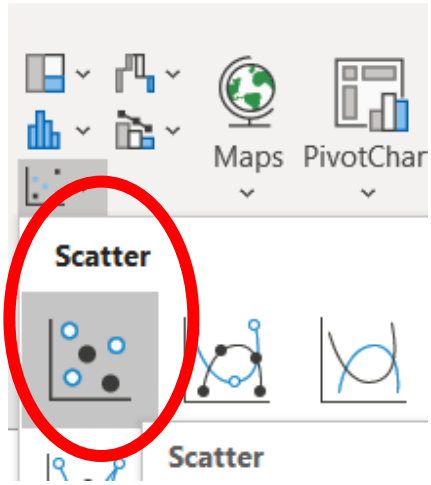
THESE DIRECTIONS ARE FOR A PC DESKTOP VERSION OF EXCEL.

MRS. FLEMING'S LIVE INSTRUCTIONS ARE FOR AN IMAC.

PLEASE SEE THE VIDEO TUTORIAL HERE FOR IPAD EXCEL:
https://youtu.be/fixEjHpDz4A

Video tutorial explaining the following are here (PC version):
https://youtu.be/nvRHVTdg7ZQ

Creating a Scatterplot graph:

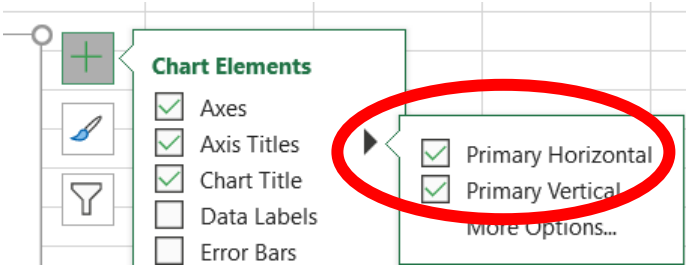


1) Download, save & open the Excel File "Correlation Student Practice". Open in the Desktop version of Microsoft Excel.
2) **Select all the data, including the headings**
3) Select **"Insert"** tab, then "scatter plot" icon
4) Choose "Scatter" (first option)

Creating an appropriate title:

5) Change the title to "The Relationship between Temperature (C) and Ice Cream Sales (US$)", Bold, Font size 16, Calibri

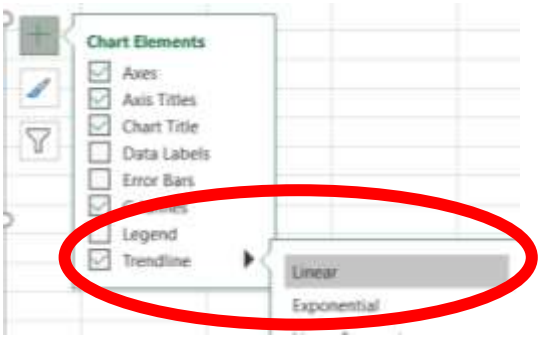
Creating appropriate labels for axes:



6) Select the graph/chart
7) Add in a title for the x-axis (horizontal). **Chart Elements:** Axis Title: Primary Horizontal
8) Change the title of the x-axis to "Temperature (C)" Font size 16, Calibri
9) Add in a title for the y-axis (vertical). **Chart Elements:** Axis Title: Primary Vertical
10) Change the title of the y-axis to "Ice Cream Sales (US$)", Font size 16, Calibri

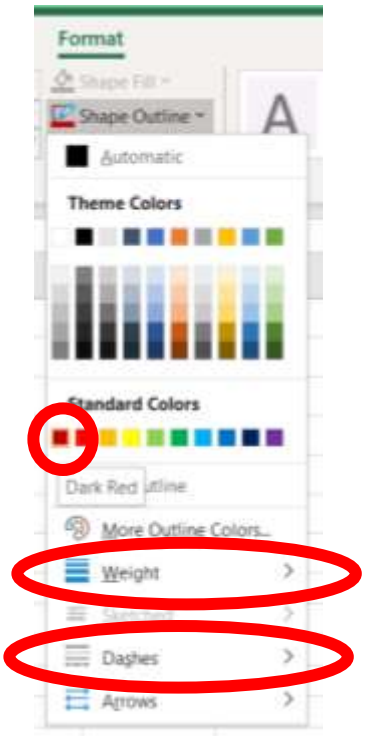
Adding a Trendline (Line of Best-Fit)

11) Select the graph, then choose **"Chart Elements:** Trendline".
12) Choose "linear". Line of Best-fit will automatically be added.



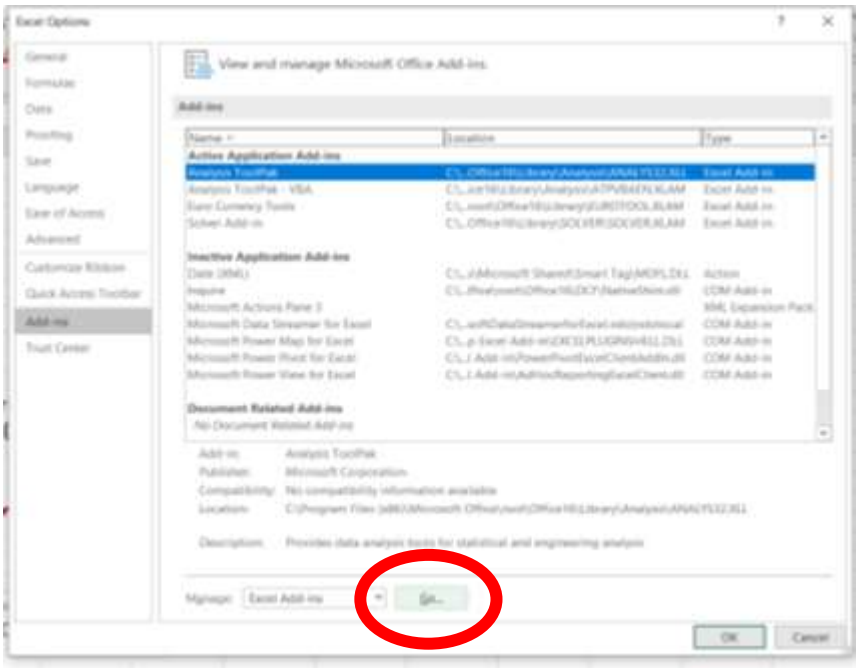
Editing the Trendline

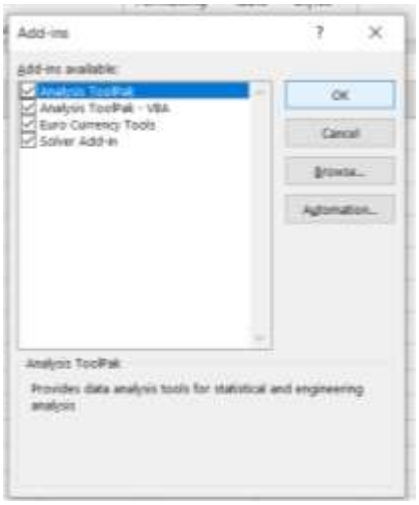
13) Select the trendline. Select "**Format:** Shape Outline".
14) Choose the style, weight & color of the trendline. Choose:
"Color: Dark Red" "Weight: 3 pt"
"Dashes: Solid " (first option)



Installing the Data Analysis Toolpak: PLEASE NOTE: The first time you use the data analysis tool it will have to be installed and therefore may not appear on the toolbar. To install:

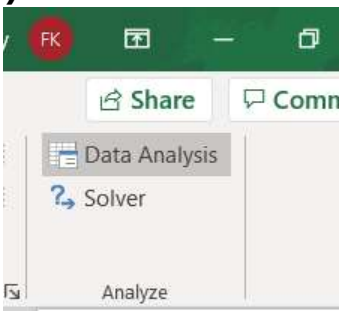
15) **File:** Options: Add-ins
16) Click on "Analysis Toolpak"
17) Select "Go" (not OK)
18) Check the box for "Analysis Toolpak" and click "OK"





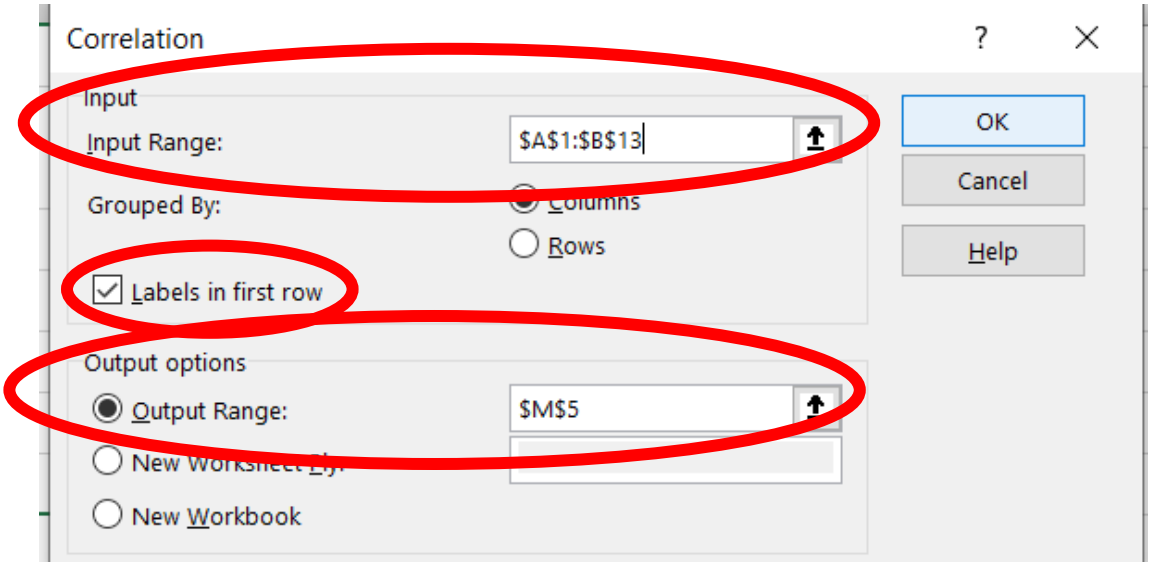
Calculating an R-value (Pearson's Correlation Coefficient)

19) Make sure you have NOT selected the graph or data (click off of it)
20) Select "**Data:** Data Analysis" (follow instructions above if you do not have this tab)
21) Select "**Correlation**" and click "OK"
22) For "Input Range": Click so your cursor is in the box to the right of the words "Input Range".
23) Move your mouse to the data and select all of the data, including the headings (same thing you did for creating the graph)
24) Make sure "Columns" is selected
25) Check the box for "Labels in first row"



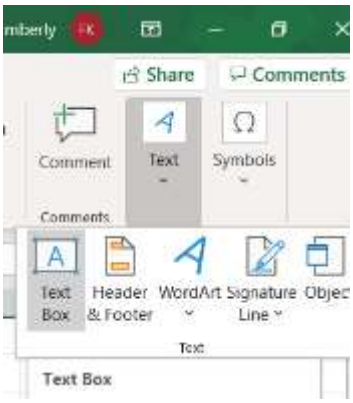
26) Check the box for “Output Range”: Click so your cursor is in the box to the right of the words “Output Range”.

27) Move your mouse to the area of the spreadsheet that you want Excel to display your data. Select only one cell.



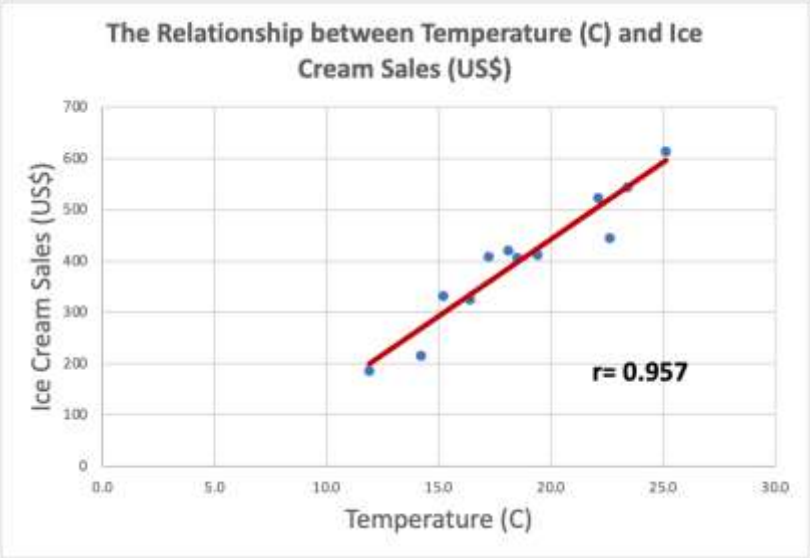
28) Click “OK”. If you get an error message, start again as you probably missed a step.

Add a text box to display the R-value



29) Click on the “Insert” tab. Select “Text”, then “Textbox”. Type or copy & paste the R-value into the textbox.

30) Format appropriately and move the textbox into the graph so they are together.



Be sure to save your work! Save file as “Your first and last name Correlation 1 8 21”. Upload Excel file to Schoology by Monday 1/11/21