| Subject: Computer Applications  Grade: High School | Unit: Microsoft Excel  Lesson: Creating a line graph and scatter plot **(2 - 3 days)** |
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| **Essential Question(s):**   * How do you create a chart using data from a given source? * What information can you get from looking at a chart? * How do you read an Excel chart?   Learning Target/Objective(s) (SWBAT or “I can…”)   * Understand why businesses (or people in general) create charts in Excel * Understand what information it may contain and how to interpret a chart * Determining what charts can be used to send a message to the viewer   Guaranteed Outcomes:   * Students will be able to create a bar or line graph * Students will know how to collect data from a website quickly and effectively by changing the URL itself * Students will demonstrate a basic knowledge of how to read charts in Excel   Standard(s):  **CDOS (Computer Development and Occupational Studies)**   * Information management focuses on the ability to access and use information obtained from other people, community resources, and computer networks. * Integrated learning encourages students to use essential academic concepts, facts and procedures in applications related to life skills and the world of work.   **CCLS: Mathematics**   * AI-N.Q.1: Select quantities and use units as a way to: i) interpret and guide the solution of multi-step problems; ii) choose and interpret units consistently in formulas; and iii) choose and interpret the scale and the origin in graphs and data displays. * AI-N.Q.3. Choose a level of accuracy appropriate to limitations on measurement and context when reporting quantities. |
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| Do Now (Bell-Ringer):  Students will be directed by the whiteboard in front to open their Chromebooks and log in to both Google Classroom and their myTC3 portal.  Students will be instructed to complete the Google Jamboard activity, which may ask them to complete or perform a task in Microsoft Word.. |
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| Opening:  Mr. Lojacono begins by greeting the class and asking how they are. After some brief conversation, he asks students to log on to both myTC3 and Google Classroom. He instructs them to complete the scatterplot practice sheet posted on Google Classroom. As students do this, Mr. Lojacono monitors student progress by circulating around the room as well as using GoGuardian on his iPad. This allows him to answer any questions or clarify anything as they come up as well as keep on students who may start to go off-task.  This beginning task takes about 10 to 15 minutes at maximum. |
| Direct Instruction:  Mr. Lojacono briefly reminds students they will only have a minute or so left to complete the Jamboard activity. Once they are done, students are instructed to go into the TC3 accounts and open the spreadsheets they created yesterday in class. Some students may not have access to Office so they are allowed to use Google Sheets instead. Mr. Lojacono tries to accommodate both software during class so everyone is able to learn the concepts at the same time.  Mr. Lojacono asks students to open their spreadsheets from Thursday. This spreadsheet contains weather data from the beginning of Fall 2021 to February 8, 2022. Students learned how to insert or remove columns in a spreadsheet, as well as create header rows for columns containing specific information.  Mr. Lojacono students for both Excel and Google Sheets how to create a **trendline** based on the data in the dataset. |
| Guided and Independent Practice:  Students will follow Mr. Lojacono’s instruction. Mr. Lojacono will stop for a minute, allowing students to either catch up or ask if he could do the certain task over again so they could learn what to do next. Mr. Lojacono will be circulating on and off around the room to check if students are caught up or are hung up on something such as a formula error or incorrect setup of a graph.  Mr. Lojacono will have students create another scatterplot, this time using the High temperature column.  Once students are finished with this, Mr. Lojacono concludes the lesson with one more graph. He instructs students to go to the second tab in their spreadsheets. Here he will review what a **pivot table** is again, explaining that it is a table that conveniently summarizes a large collection of data. In this case we are going to create a pivot table to tell us how often we get what kind of weather in the Syracuse area.  Students need to remove the temperature columns, leaving just the date columns and weather description columns. Mr. Lojacono demonstrates to students how to create a **pivot table** of the data. The pivot table will help us organize and summarize the data quickly, showing us patterns that were not apparent to us right away. The reason why it is called a PIVOT TABLE is because it allows you to move different column fields to different spaces so that we can see what is going on in different ways.  Finally, Mr. Lojacono demonstrates to students how to create a bar chart based off of the pivot table. |
| Closing:  Mr. Lojacono will close class with a reminder of the upcoming Microsoft Excel Quiz. Students should know how to:   * Create a scatterplot * Create a line graph and bar graph * Interpret a given graph created in Excel |

| Assessment(s):   * Practice handout * Microsoft Excel Quiz early next week | Follow Up: |
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| Materials   * Google Classroom and Jamboard assignment * Chromebooks * Access to students’ myTC3 accounts * Access to students’ Microsoft Office Online or Google Docs | Bloom’s Taxonomy   | **X** | Knowledge | | --- | --- | | **X** | Understanding | | **X** | Application | | **X** | Create/Evaluate/Analyze | | Types of Learning   |  | Co-op Learning | | --- | --- | | **X** | Independent Work | | **X** | Small Groups | | **X** | Whole Group | | **X** | Hands On | |
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| Accommodations | Remediation | Enrichment |
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| Reflection: (How do I know)   * What data guided this lesson? * Were the objectives understood? * How are students responding to my instruction? * Who is doing the heavy lifting? How heavy? * When did I provide time for interaction? * How useful was my feedback? * Did I keep the lesson aligned? |  |
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| Additional Notes |
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