| ***21st Century Computer Applications: Unit 2 - Analyzing and Manipulating Data******6 Weeks - 29 Days*** |
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| **Targeted Standards** (Write the overall NJSLS standards that are most applicable to this unit.).**9.4.12.TL.2:** Generate data using formula-based calculations in a spreadsheet and draw conclusions about the data.  |
| **Rationale and Transfer Goals** : This unit introduces students to analyzing and manipulating data to be able to provide business insights. Students will learn how to use spreadsheet software as a means of storing, sorting, and presenting data to be used to analyze business trends and present information in an easier and more logical manner. Students will be introduced to proper spreadsheet formatting, learn common sorting and mathematical functions, capture data trends, and analyze statistics and sales data to provide business insights. Students will finish the unit with a “Bucket List” project that encompasses all skills learned. |
| **Enduring Understandings:** What are the most essential conclusions that students should be guided towards throughout this unit?Calculating data and generating charts and graphs facilitates the process of data analysis.Organizing data in a database allows for storing, sorting, and manipulating data which increases overall productivity.Data analysis is a very highly sought after, on demand skill in the 21st century. |
| **Essential Questions**:How does spreadsheet software simplify mathematical data calculations?Why is it easier to read and compare mathematical statistics when they are displayed in a chart?What types of mathematical functions do you utilize in your daily lives now? |
| **Content/Objectives** | **Instructional Actions** |
| **Content*****What students will know*** | **Skills*****What students will be able to do*** | **Activities/Strategies*****How we teach content and skills*** | **Evidence (Assessments)*****How we know students have learned*** |
| * Identify elements of a

spreadsheet.* Enter, format, and edit labels (text) and values (numeric entries).
* Create basic formulas/functions

using cell references.* Apply formatting, merging, cell alignment, and page formatting to a workbook.
 | * Identify elements of an Excel workbook.
* Enter, format, and edit data (values and labels) in an Excel workbook.
* Create formulas/functions with relative cell references.
* Format and edit charts.
* Identify data trends and sort and manipulate data in a logical manner.
 | * Create, format, and

edit spreadsheets.* Digital Scavenger Hunt.
* Formatting a spreadsheet activity.
* Smoothie Sales Chart activity.
* Capturing Data Trends activity.
* Bucket List Unit Project.
* View sample spreadsheets to use as templates.
* Real-life business examples related to spreadsheets.
* Spreadsheet activities with step-by-step instructions.
* Tip Sheets to reference for help.
 | * Daily class activities.
* Screen checks of class activities.
* Challenge Question participation.
* [Google Sheets Quiz](https://docs.google.com/forms/d/e/1FAIpQLSel_A3WIcQBts3C1TNug66if9hixzmoOnFb1e1KMHkz2MhH9g/viewform?usp=sf_link).
* Teacher observation and reflection.
* [Business Spreadsheet Bucket List final project](https://indd.adobe.com/view/59eef736-0c63-4212-929e-fcc038171e9a).
* Digital Presentations using Google Slides.
* Formal data from activities.
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| **Spiraling for Mastery** **Where does this unit spiral back to other units from this or previous years** **in order to ensure that students retain mastery of what they’ve learned?** |
| **Content or Skill for this Unit** | **Spiral Focus from Previous Unit** | **Instructional Activity** |
| * Analyzing data and identifying actionable business trends.
* Properly storing, sorting, and formatting data.
* Using mathematical formulas to aid in analyzing data.
* Using formatting tools to properly format a spreadsheet.
 | * Google Classroom and Google Drive familiarity.
* Formatting tools from word processing tools.
* Inserting tables, charts, and pictures from word processing tools.
 | * Challenge Questions.
* Mini Paragraphs/Sentence Starters.
* Use of Google Classroom and Google Drive applications.
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| **21st Century Skills:** What are the [21st Century Skills](http://www.p21.org/about-us/p21-framework) that are a part of this unit, and where are they experienced?CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP10. Plan education and career paths aligned to personal goals. CRP11. Use technology to enhance productivity. In the literacy block, students will be making judgments and decisions, implementing innovations, thinking creatively, work creatively, communicate clearly, collaborating with others, using visual literacy, applying scientific and numerical literacy, using cross-disciplinary thinking, applying basic literacy, accessing and evaluating information, using and managing information, creating media products, and applying technology effectively. |
| **Key resources:** What are the resources that are essential for this unit (may also be listed in “Activities/Strategies”)?* Quizizz
* Google Classroom
* Google Drive Applications (Docs, Sheets, Slides)
* Nearpod
* Internet use for research
* SMART Board for presentations
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| **Interdisciplinary Connections:****Computer Science and Design Thinking:** Students will learn about the advantages of organizing, manipulating, and analyzing data in spreadsheets/ 8.1.12.DA.2: Describe the trade-offs in how and where data is organized and stored.**English Language Arts -** Students will turn data into visual representations using charts and graphs/ NJSLSA.SL2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.  |