

Date:  July 17	Topic: Introduction to Google Sheets	Time Required: 60 minutes
Learning Target/Objectives: <ul style="list-style-type: none">I can execute a variety of functions using Google Sheets including enter data, tabulate data, learn a few shortcuts, and create graphs/tables from data entered.		
 Vocabulary: <ul style="list-style-type: none">	 Guiding Questions: <ul style="list-style-type: none">What is manufacturing?How were items created in the past vs the present?What are some products that are manufactured?What were some of the major developments made in manufacturing?Provide some examples of the technology that has been created that benefits/is used in manufacturingHow has manufacturing developed over time?How were products produced in the past (when modern technology was not available)?How is robotics used in manufacturing?	
Color Legend: Red = Essential Blue = Enrichment Purple = In Depth		
 Lesson Design Details: Activity 1: Students will complete a scavenger hunt worksheet that requires them to follow steps for data entry, tabulation, and graph creation in Google Sheets. The final product will be a line graph based on the data they enter. Activity 2: Guided Practice - In pairs, students will practice entering sample data provided by the teacher. Monitor students as they work, asking guiding questions like: <ul style="list-style-type: none">"What happens when you change the data in this cell?""Can you show me how to format this data?"Offer support for students struggling with shortcuts or data entry. Activity 3: Independent Practice - Students will receive a scavenger hunt worksheet with specific tasks to complete in Google Sheets, including: <ul style="list-style-type: none">Entering a specified set of data.		

- Creating a line graph based on their data.
- Formatting the graph with labels and colors.

Activity 4: Extension Activity - Students who finish early can explore additional graph types (e.g., bar graphs, pie charts) and create a new graph from the same data set

Key Points:

- Begin with a brief discussion on how data is used in everyday life (e.g., budgets, sports statistics).
- Ask students, "How do you think data can help us visualize information?"
 - Introduce a fun fact about data visualization to spark interest
- Demonstrate the Google Sheets interface, highlighting key features.
 - Show how to enter data into cells and format it (e.g., bold, color).
 - Introduce shortcuts (e.g., copy, paste, undo).
- Explain how to select data for graph creation.
 - Common Misconception: Students may think that graph creation is only for specific types of data; clarify that any data can be visualized.

Materials/Resources:

- Digital Journal (Google Slides RECOMMENDED):

Closing (Check for Understanding):

- Discussion Review - students will share
 - Answers to Guiding Questions
 - Any surprises they experienced

Category	Standard Organization	Standard/Benchmark Code & Description
Data Analysis	NCSCOS (Computer Science)	6-8.DA.02: Collect data using computational tools and transform it to make it more useful and reliable (e.g., tabulating and formatting in Sheets).
Visualization	NCSCOS (Computer Science)	6-8.DA.03: Create visualizations (e.g., line graphs, bar charts) to help communicate data and support a claim.

Manufacturing Systems	ITEEA (STEL)	STEL-1L: Explain how manufacturing systems produce products in quantity and how they have developed over time.
Technological Tools	ITEEA (STEL)	STEL-8M: Use computers and specialized software (Google Sheets) to access, organize, and communicate key ideas.
Robotics in Industry	ITEEA (STEL)	STEL-1M: Analyze how robotics and automation are used to improve efficiency and safety in manufacturing processes.
Computational Thinking	ISTE (Students)	1.5.b: Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate decision-making.
Creative Communication	ISTE (Students)	1.6.c: Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations or models.
Foundational Skills	NCSCOS (Digital Literacy)	Digital Futures 2: Understand and practice effective data management, including entering, organizing, and securing information in cloud-based tools.