

# Data Analysis Rubric

Category	1 Point	3 Points	5 Points	7 Points	10 Points
Data collection	Limited or no data collected.	Follows basic instructions, but data may contain errors.	Follows instructions well, collects relevant data with few errors.	Collects accurate and comprehensive data exceeding expectations.	Collects comprehensive and accurate data using advanced methods.
Data organization	Data is disorganized or not presented clearly.	Data is presented somewhat clearly but with minor inconsistencies.	Data is well-organized and easy to understand with clear labels.	Data is meticulously organized and presented for efficient analysis.	Data is exceptionally well-organized and presented using advanced methods (e.g., coding).
Variable identification	No variables identified or inaccurate identification.	Attempts to identify variables but with inconsistencies.	Accurately identifies relevant variables.	Clearly identifies all relevant variables and explains their types (quantitative/qualitative).	Accurately identifies and explains all relevant variables, including their types and potential scales.
Parts of a graph	Missing or inaccurate labeling of graph elements (title, axes, legend).	Labels some elements incorrectly or inconsistently.	Labels all elements correctly but with minor formatting issues.	Labels all elements clearly and correctly with proper formatting.	Labels all elements meticulously, uses proper formatting, and incorporates additional features (e.g., error bars, data points).
Construct a graph from data	Fails to construct a graph or graph is inaccurate.	Constructs a basic graph with significant errors.	Constructs a graph with some errors but conveys the general trend.	Constructs an accurate and well-formatted graph that clearly represents the data.	Constructs an exceptional and informative graph with effective use of technology and customization.
Relationships among variables	Fails to identify any relationships or misinterprets them.	Attempts to identify relationships but lacks clarity or overlooks key aspects.	Identifies basic relationships between variables but lacks detailed analysis.	Identifies and explains relationships between variables using appropriate language and terminology.	Provides a comprehensive and insightful analysis of relationships between variables, highlighting nuances and limitations.
Manipulation of variables (calculations)	Makes significant errors in calculations or fails to perform them.	Attempts calculations but with errors and limited understanding.	Performs calculations with some errors but demonstrates basic understanding.	Performs calculations accurately and demonstrates understanding of their purpose.	Performs complex calculations accurately and explains their significance to the analysis.
Trend identification	Fails to identify trends or misinterprets them significantly.	Attempts to identify trends but lacks clarity or overlooks key patterns.	Identifies basic trends but lacks detailed explanation or justification.	Identifies and explains trends accurately, considering potential limitations and alternative interpretations.	Identifies and explains complex trends including outliers and potential causes, considering limitations and alternative interpretations.
Using Technology (Google Sheets)	Limited or no use of technology for data analysis.	Uses technology with basic features but encounters significant difficulties.	Uses technology with some understanding but limited efficiency.	Effectively utilizes relevant features of Google Sheets for data analysis and visualizations.	Demonstrates advanced and innovative use of Google Sheets tools for complex data analysis and visualizations.
Verbal summaries of information on a graph	Inaccurate or incomplete description of information on the graph.	Description is partially accurate but lacks key details or clarity.	Provides a general understanding of the information depicted in the graph.	Provides a clear and concise summary of the information on the graph, highlighting key trends and relationships.	Provides a comprehensive and insightful summary of the information on the graph, including potential limitations and alternative perspectives.
Constructing graphs from obtained data	Fails to construct a graph from obtained data or graph is inaccurate.	Constructs a basic graph with significant errors from obtained data.	Constructs a graph with some errors but conveys the general trend using obtained data.	Constructs an accurate and well-formatted graph that clearly represents the obtained data.	Constructs an exceptional and informative graph with obtained data, using effective customization and advanced features.
More complex statistical analysis of data	Limited or no attempt at complex statistical analysis.	Attempts to use complex statistical analysis but makes significant errors.	Uses basic techniques for complex analysis with some errors and limited understanding.	Utilizes appropriate complex statistical analysis techniques accurately and explains their significance in the context of the data.	Demonstrates mastery of advanced statistical analysis techniques and utilizes them effectively to draw insightful conclusions.

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Continued development of using technology	Limited or no development in using technology for analysis.	Shows minor improvement in using technology but significant difficulties persist.	Shows consistent development in using technology with some limitations.	Demonstrates continued and significant improvement in using technology for data analysis and visualizations.	Continuously explores and implements advanced technological tools and methods for data analysis, setting an example for others.