5.DA.2 Data and Analysis

> *The student will create multiple data representations to make predictions and conclusions. (a) Formulate questions that require the collection or acquisition of data. (b) Collect data to use in creating charts, graphs, and models. (c) Analyze data as evidence to draw conclusions and make predictions. (d) Propose solutions to problems or questions based on data analysis.*

Understanding the Standard

Computers can be used to create tables or graphs that help students observe data in different ways and identify the type of data needed to address a problem or question. Once data has been collected and organized into a chart or graph, it can be analyzed to determine if a pattern exists. The pattern can be used to make predictions or answer questions. Determining what type of data is needed to answer a question and using a computer to access, organize, and analyze this data are skills needed in many career and academic fields.

Term	Definition
Data	Individual facts and information
Prediction	Making a guess of what will happen based on current facts
Graph	A way of organizing and displaying data using images to represent the relationship between two or more types of data.
Analyze	Examine something closely to find patterns or connections.

Prerequisite Knowledge

To engage with this standard, students need to have an understanding of how to collect and sort data as well as how to use evidence to support their thinking.

Integration Opportunities

History USI Skills a,b,c,e,f Use data, charts, and graphs from US history to 1865 to understand events and propose solutions in US history.

Math 5.PS.1 Students record daily temperature data for a week, use line plots and stem-and-leaf plots to display the information, analyze trends and variations, and discuss what the data might suggest about future weather conditions or seasonal changes.

English 5.RL.1c Collect evidence from narrative text to create a visual representation of character development. Make predictions using the representation and explain how the represented data points impact the plot.

Physical Education 5.4d Have students gather evidence of events that elevate personal stress levels. Then have students make a visual representation and analyze the data to draw conclusions and make recommendations for decreasing stress levels.

Summary of a Lesson

In groups, students will use computers to collect, organize and analyze data compiled in the classroom during a set period of time (topics will vary based on content). Data can be collected using surveys, logs, tracking sheets, or polls. The data will then be entered into a spreadsheet and organized to make it easier to understand (e.g. alphabetized, sorted, merged, categorized). Students will create, compare and contrast two visual representations of the data collected using tables, bar graphs, line graphs, etc. and determine how parts of the same data can be emphasized and interpreted differently using differing visuals. Groups will share their

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collection, organization, and analysis methods with the class. *Note: This lesson summary also aligns to 5.DA.1*

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