

1.DA.2 Data and Analysis

The student will create representations of data to make predictions and draw conclusions. (a) Collect and organize data with or without a computing device. (b) Create tables, object graphs, picture graphs, and models using abstraction. (c) Identify patterns and describe trends in data visualizations of various formats. (d) Use data to answer questions, draw conclusions, and make predictions.



Integration Opportunities

Understanding the Standard

The collection and use of data about individuals and the world around them is a routine part of life and influences how people live. Data are pieces of information collected about people or things. These data can be recorded in tables and can be used to construct object graphs or picture graphs. Just as humans can observe, measure, and record data, digital devices can also collect store data over time. Computers, cell phones, digital toys, and cars can contain sensors to collect data from their surroundings. Both humans and computers can process data by organizing it (such as into a chart or graph), analyzing it (to determine if patterns or trends exist), and using the data to make predictions, make decisions, or draw conclusions.

Term	Definition
Data	Individual facts and information
Prediction	Making a guess of what will happen based on current facts
Table	A way of organizing and displaying data using horizontal rows and vertical columns.
Graph	A way of organizing and displaying data using images to represent the relationship between two or more types of data.

English 1.DSR.c, 1.RL.1 b,c,d Create a 3-column table (what the text says, what we know, what we infer) to track story elements and important events. Use the information from the first two columns to make inferences about the story, characters, and events.

Math 1.PS.1 Conduct a "favorite snack" survey in which students collect data from classmates, create tables and picture graphs to represent their findings, and read and interpret the graphs to make predictions about snack preferences.

Physical Education 1.3b,c Have students monitor and collect heart and breathing rates at different activity stations at various intensity levels. Use the data to create a table or graph and have students identify patterns or trends as intensity levels change.

Prerequisite Knowledge

Students should have a foundational knowledge of parts of a computer. They should have experience collecting and recording basic data from Kindergarten, but may need support with independently organizing the data into charts and graphs.

Summary of a Lesson

Students will explore different types of data and learn that (1) data is information we collect to learn new things and (2) we can use this data to make predictions. Conduct a class survey on a chosen category (e.g., birthdays or favorite animals), and record student responses on chart paper or whiteboard. Explain the importance of organizing data, and model creating a table with categories and corresponding data. Use the gathered data to create a picture graph, with pictures matching the categories. Then introduce the concept of object graphs and have students use objects like colored blocks or buttons to represent data. Using an online or paper template, provide a simple data collection scenario for each group of students, such as "favorite seasons, how you get to school, favorite pizza toppings, how many siblings do you have, etc". Students will collect data by surveying the

classmates in their groups and record the responses in a chart or graph to visually represent the data.