

3.DA.1 Data and Analysis

The student will gather, store, and organize data to evaluate trends and identify patterns using a computing device. (a) Formulate questions that require the collection or acquisition of data. (b) Gather, organize, sort, and store data. (c) Examine a labeled dataset to identify potential problems within the data. (d) Discuss how data discrepancies or problems impact predictions and results. (e) Draw conclusions and make predictions based on observed data.



Integration Opportunities

History Skills c,e,g Using data relating to historical events, have students gather, sort, and store data along with drawing conclusions and making predictions about the data.

Math 3.PS.1 Take on the role of "data detectives": formulate questions about a topic, gather and organize data, and use pictographs and bar graphs to analyze trends. Identify irregularities in the data and discuss how outliers can affect conclusions drawn from their analyses.

Physical Education 3.3b-e Name and demonstrate one activity for each of the five components of fitness. Gather, organize, and examine data related to physiological changes (including heart rates) that occur when the intensity level increases.

English 3.R.1 a-e As a class, select a research topic and generate research questions. Conduct research using resources that include data sets and visual displays of organized evidence (i.e., chart, graph, table). Have students present their findings and share predictions/conclusions.

Understanding the Standard

Any time someone makes an assertion or argument, we expect them to use evidence to support that claim. Data are a form of evidence that can be used when answering questions or in making predictions, and computers are one medium through which individuals can access, represent, and analyze data. Students can use a computer to collect data through measurements, sensors, or surveys, explore existing data sets compiled by others, and organize data. 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. Students can then analyze and use the data as evidence to identify a pattern or make a prediction. The abilities to determine what type of data is needed to answer a question and use 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.
Analyze	Examine something closely to find patterns or connections.

Prerequisite Knowledge

Students should have a foundational knowledge of collecting and organizing data and using evidence to support their thinking.

Summary of a Lesson

In pairs, have students brainstorm a research topic or question related to a current unit of study. Data can be collected in class using methods such as surveys, tracking sheets, and observation logs, or data sets can be researched online (ex. Census Bureau, National Weather Service, etc). Once students have acquired enough data, model using a computer to create a table to organize the data. In small groups, analyze the information to

identify patterns or trends related to their original question or topic. Have students create a visual representation of the data, such as a graph or chart, and explain what they learned by looking at data in different ways.

