Data Literacy

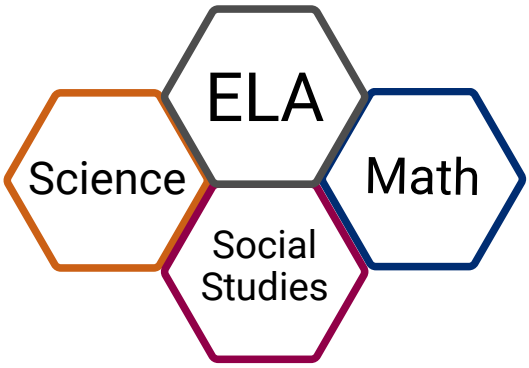
K-12 Academic Standards

Data literacy refers to the ability to read, understand, interpret, and communicate data or claims derived from data. It involves teaching students how to critically evaluate data, including understanding its origins, limitations, and potential biases, and effectively communicate data through visualizations and other means. These are crucial skills for students, as data literacy lays the foundation students need to make decisions, develop critical thinking skills, and understand the underpinnings of the data-driven world we live in, regardless of their role or industry, as they enter the workforce. **

Data literacy is a connector, an excellent way to connect concepts across disciplines rather than remaining isolated within a single discipline.**

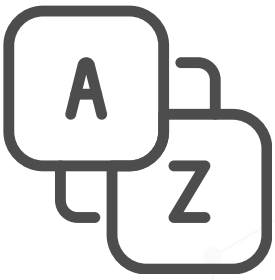
Content Specific Documents:

Use the links below to access the one-page documents of data literacy standards for each content area.



Cross-Content Vocabulary:

Understanding how vocabulary connects across subjects helps students build deeper comprehension and transfer knowledge between contexts. The link below



Data Displays & Analysis:

The table shows the grade level expectations for various content areas in the Arizona State Standards in reference to graphs and visual displays of data, as well as data analyses.

**ADE's working definition of data literacy has been adapted from the work of Data Science for Everyone.

Data Literacy
Social Studies

Using Inquiry to Analyze and Interpret Data

The Inquiry Arc is the framework in the C3 (College, Career, and Civic Life) Social Studies Standards that guides students through the process of inquiry. It consists of six elements: developing compelling questions, planning inquiries through supporting questions, gathering and evaluating sources and using evidence, communicating conclusions, and taking informed action. This approach helps students think critically, analyze evidence, and engage in problem-solving around real-world issues. The six components of the Inquiry Arc are found in the Arizona Social Science and History Standards through the Disciplinary Skills and Processes Anchor standards and appear at each grade level.

Social studies inquiry is a powerful approach for analyzing and interpreting data because it emphasizes asking questions, investigating evidence, and drawing conclusions—skills that align perfectly with data analysis. And of course, analyzing sources include the analysis of historical and modern data.

Anchor Standards for Disciplinary Skills and Processes
SP1: Chronological reasoning requires understanding processes of change and continuity over time, which means assessing similarities and differences between historical periods and between the past and present. *(Present in grades K-12)*
SP2: Thinking within the discipline involves the ability to identify, compare, and evaluate multiple perspectives about a given event to draw conclusions about that event since there are multiple points of view about events and issues. *(Present in K-12)*
SP3: Historians and Social Scientists gather, interpret, and use evidence to develop claims and answer historical, economic, geographical, and political questions and communicate their conclusions. *(Present in grades K-12)*
SP4: Thinking within the discipline involves the ability to analyze relationships among causes and effects and to create and support arguments using relevant evidence. *(Present in grades 2-12)*

Data literacy practices can also be found in the content anchor standards: Civics (C), Economics (E), Geography (G), and History (H).

Content	Content Anchor Standards that Support Teaching Data Literacy
Civics	C4: Process, rules, and laws direct how individuals are governed and how society addresses problems.
Economics	E2: By applying economic reasoning, individuals seek to understand the decisions of people, groups, and societies.
Geography	G1: The use of geographic representations and tools helps individuals understand their world. G3: Examining human population and movement helps individuals understand past, present, and future conditions on Earth's surface. G4: Global interconnections and spatial patterns are a necessary part of geographic reasoning.
History	H4: Patterns of social and political interactions have shaped people, places, and events throughout history and continue to shape the modern world.