

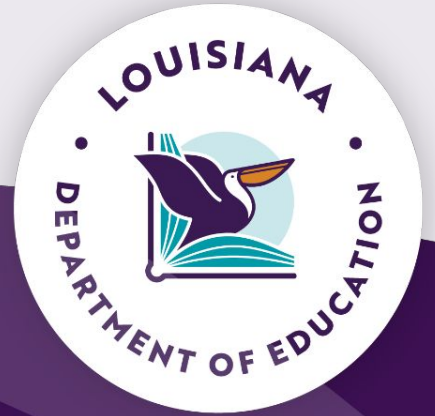
K-12 Computer Science Standards Writing Steering Committee

Claiborne Building | Thomas Jefferson Room 1-136 | 1201 North Third Street, Baton Rouge, LA 70802

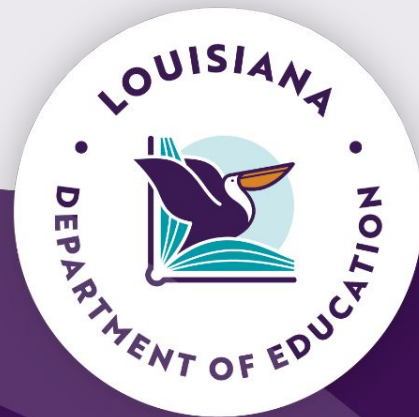


July 11, 2024

Call to Order



Roll Call



Agenda



Agenda

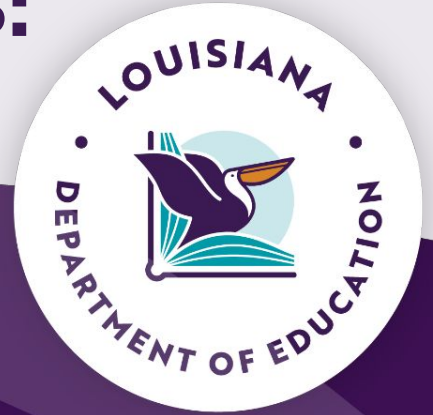
- I. Call to Order
- II. Roll Call
- III. Approval of minutes of the meeting held June 20, 2024
- IV. Consideration of a summary report regarding the grade band workgroup recommendations for computer science content standards on Concept 3: Data and Analysis
- V. Consideration of an update report regarding the work of the computer science grade band workgroups



Approval of minutes of the meeting held June 20, 2024



Consideration of a summary report regarding the grade band workgroup recommendations for computer science content standards on Concept 3: Data and Analysis



Overarching Themes

The discussion of data yielded the following:

- a focus on understanding the source, accuracy, reliability, and uses,
- representation formatting and structural attributes of data,
- the legal considerations for collection, storage, and ownership of data,
- the importance of backing up data in multiple ways,
- the usage of real-world data sets to give students personal connections to analytic practices, and
- glossary additions.



Core Concept 3 Data and Analysis

Overview:

Computing systems operate through the processing and storage of data. The amount of data generated by objects worldwide is ever-expanding, and so is the need to process the data accurately and effectively. The ways that data is collected and securely stored are essential to many aspects of a person's private and professional life. **Data Science** is the cross-disciplinary use of data to inform daily practices, test hypotheses, predict trends, and develop accurate models.



Subconcepts

- A. Data Representation
- B. Data Collection
- C. Data Storage
- D. Visualizations and Transformations
- E. Inference Models



9-12 Data Representation

1A. Evaluate how data is represented, propose ways to reconstruct it, and visualize it in multiple ways.

1B. Define and describe database structures to optimize the search and retrieval of data.

9-12 Data Collection

2A. Explain and describe the impacts of uncertainty and the limitations of data collection technology and tools.

2B. Describe the personal and legal impacts of collecting data (e.g., search histories, medical records, derived data) for given scenarios and propose the appropriate tools and techniques to achieve them.

9-12 Data Storage

3A. Explain and utilize the appropriate data structural organization system to collaborate and communicate data within a team or user group in given scenarios.

3B. Justify choices on how data elements are organized and where data is stored considering cost, speed, reliability, accessibility, privacy, and integrity (e.g., local storage, portable storage, cloud storage).

9-12 Visualizations and Transformations

4A. Create interactive data visualizations using software tools that explain complex data to others.

4B. Utilize data analysis tools to process and transform data into applicable, relevant data (extract, transform, and load).

9-12 Inference and Models

5A. Apply and evaluate data analysis techniques to identify patterns represented in complex systems.

5B. Analyze patterns in data visualizations, then select a collection tool to test a hypothesis and communicate the relevant information to others.

5C. Create a model utilizing data to simulate, with the appropriate variables, so that predictions for real-world phenomena can be developed.

5D. Evaluate the impacts of the variables and the model on the performance of a simulation to refine a hypothesis.

6-8 Data Representation

1A. Translate between different encoding representations of real-world phenomena such as letters, numbers, and images.

1B. Analyze and explain the correspondence between data sets and their graphical representations (e.g., graphs, histograms, scatter plots).

6-8 Data Collection

2A. Compare and contrast how data is collected using computational and non-computational tools and processes.

2B. Analyze scenarios and computing systems to determine the appropriate data entry format for the proper tasks.

6-8 Data Storage

3A. Evaluate the most efficient and effective ways to arrange, collect, and visually represent data to inform others.

3B. Propose methods for securely backing up data and the appropriate practices for data risk management.

6-8 Visualizations and Transformations

4A. Utilize tools and techniques to locate, collect, and create visualizations of large-scale data sets (e.g., paper surveys and online data sets).

4B. Collect and transform data using computational tools to make it functional and reliable to test a hypothesis.

6-8 Inference and Models

5A. Describe and evaluate the accuracy of a model representing a system by comparing the model's generated results with observed data from the modeled system.

5B. Refine computational models based on data generated by the models.

K-5 Data Representation

1A. Classify data types (e.g., digital, non-digital, numerical, text-based, audio, visual, and video) and describe the attributes used to sort data.

1B. Organize and present data visually (e.g., charts, graphs, tables) to highlight relationships and support claims.

K-5 Data Collection

2A. Select the appropriate data collection tool and technique to gather data to support a claim or communicate information.

2B. Describe and collect data utilizing the appropriate units of measure and discuss how data format impacts a computing system.

K-5 Data Storage

3A. Compare and contrast ways to store computational data.

3B. Explain how to name, search for, locate, retrieve, modify, and delete information using a computing device.

K-5 Visualizations and Transformations

4A. Organize and present data visually in at least three ways to highlight relationships and evaluate a claim.

4B. Evaluate data quality and clean it when indicated using the criteria of validity, accuracy, completeness, consistency, and uniformity.

K-5 Inference and Models

5A. Analyze data for patterns and relationships.

5B. Utilize data to create models, answer investigative questions, and make predictions.

Progression of Concept 3 Data and Analysis

Data is used in all of our K-12 Math, Science, and STEM courses. Computer Science adds to this tapestry through a student's understanding of how data can be used to tell a story for learning, building personal and public understanding, business and research interests, and entertainment.

Through data, students build knowledge and higher order thinking skills as they transform and visualize information.



Recess



Consideration of an update report regarding the work of the computer science grade band workgroups



Schedule of K-12 Computer Science Standards Writing Committee Meetings

Date and Time	Meeting and Location
May 7, 2024, 9 a.m. - 4 p.m.	Meeting 1 - Claiborne Building, Baton Rouge
June 7, 2024, 9 a.m. - 4 p.m.	Meeting 2 - Claiborne Building, Baton Rouge
June 20, 2024, 9 a.m. - 4 p.m.	Meeting 3 - Claiborne Building, Baton Rouge
July 11, 2024, 9 a.m. - 4 p.m.	Meeting 4 - Claiborne Building, Baton Rouge
July 30, 2024, 9 a.m. - 4 p.m.	Meeting 5 - Claiborne Building, Baton Rouge
August 13, 2024, 9 a.m. - 4 p.m.	Meeting 6 - Claiborne Building, Baton Rouge
August 27, 2024, 9 a.m. - 4 p.m.	Meeting 7 - Claiborne Building, Baton Rouge

Please contact STEM@la.gov

