



# LogicDS is a logic based framework for unifying data science foundations in computing, math and statistics

Data science is revolutionizing academia and industry, and there is a strong demand for a workforce fluent in data science, particularly in support of the burgeoning world of artificial intelligence .



## Progress

### Curriculum Development

- Established a collection of datasets and problems based on popular modern concepts (that are thought to interest high school aged students) and mainstream courses on data science
- Established a “universal language” centered on mathematical logic unifying computing, math and statistics subjects
- Developed a sequence of introductory data science concepts into a virtual, asynchronously delivered course
- Created 17 lessons. 6 lessons have been used in a pilot study

#### Funding



This work was supported by a grant (Award # 2201393) from NSF. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

### Pilot Study

- Full PD course conducted summer 2023
- Workshops & virtual supplemental materials created in 2024
- Week of Data Science (WODS) study conducted in April, 2024
- 110 participants signed up, with the majority completing the study
- Focused primarily on rural, underserved communities (30% declared that they were from either rural or small town/city communities)
- 20% of 93 participants who answered were African American/Black; 27% were LatinX/Hispanic

### INITIAL RESULT: Enhanced familiarity with data science

Before joining the pilot study, only 3 out of the 93 respondents answered, “I know a lot about it (data science).” (3%)  
After completing the lessons, 28 out of the 65 respondents answered, “I know a lot about it (data science).” (43% of respondents)

### INITIAL RESULT: Students enjoyed LogicDS lessons

“I really enjoyed the learning I did in these lessons” - 75% of those who answered (64) either agree or strongly agree

### Future Work

Two additional rounds of testing are planned for the LogicDS course in the near future; finalized course materials, associated virtual Professional Development classes and supplemental information will be made available for use by the general public, following the completed research and usability testing session.

More information about this project, including draft curricular materials, and details about our team, approach and relevant publications is available on [logicds.engagescience.org](https://logicds.engagescience.org). Please be sure to visit.

