

# Summative Evaluation for Cal Poly Humboldt's 2022 Summer Algebra Institute

## 01 Introduction: Regional Data, Context, & Research Question

### Introduction & Context

Cal Poly Humboldt and Educational Talent Search (ETS) partner to host Summer Algebra Institute (SAI) annually to serve students in Del Norte, Humboldt, and Mendocino Counties, which as seen in the BIPOC breakdowns per county, all are approaching 50% of BIPOC community members. Based on the data collected from EdData and CAASPP (please refer to Regional Data Graphs 1 & 2), A-G Completion rate across all counties in comparison to CA's State Avg. is below average, in particular for BIPOC students. In a similar trajectory, the CAASPP scores for 11th graders is below the CA' State Avg., with Del Norte County having the least percentage of 11th grade students meeting or exceeding math standards, and in relation to A-G % completion, BIPOC students show low trends of meeting grade level math standards.

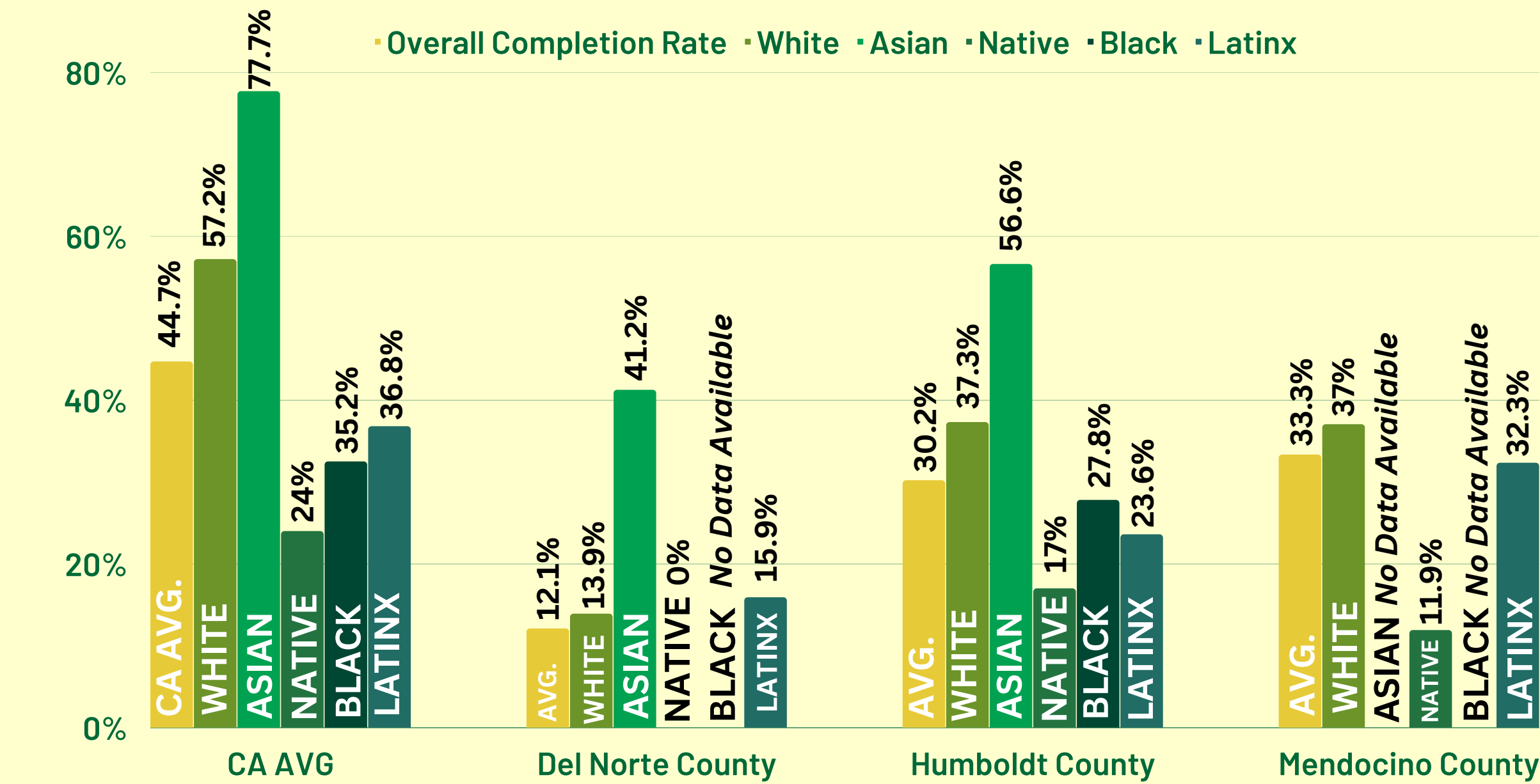
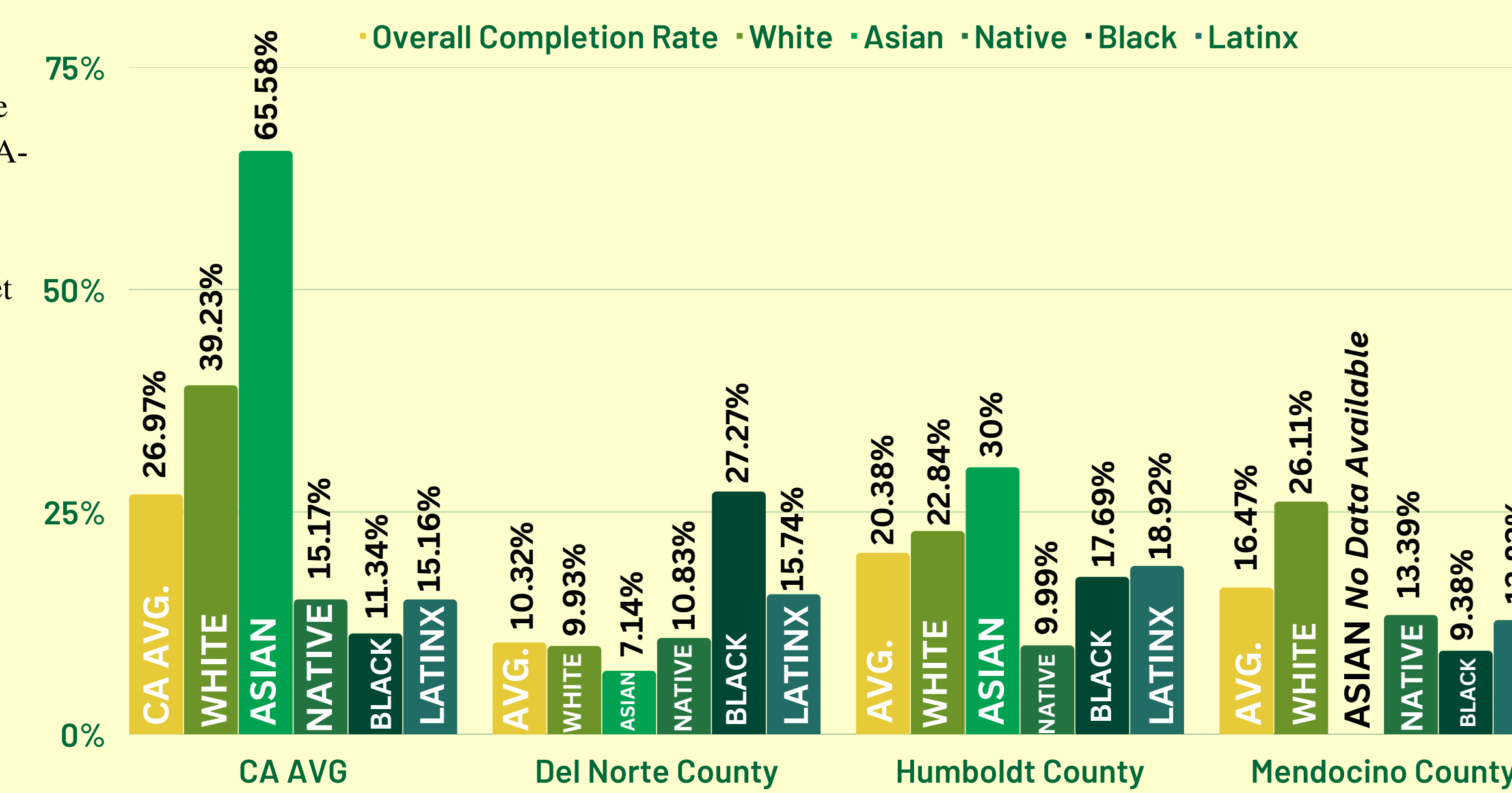
Summer Algebra Institute (SAI) serves as an additional Early College Outreach Program to meet the local educational needs to assist students to approach or meet and exceed math standards, and/or provide supplemental math support so students can graduate High School by passing Algebra 1. These goals are in alignment with California State University's (CSU) Summer Algebra Institute's goal to have students be math ready when they get to Higher Education Institutions, such as the CSUs.

### Summer Algebra Institute (SAI) Program Objectives

- Summer Algebra Institute (SAI) was intentionally created to increase BIPOC representation' accessibility to supplemental quality math instruction and support during the summer.
- SAI's virtual accessibility allowed BIPOC students across three counties to access an aligned summer school credit recovery requirement who failed math and required credit recovery to move on to the next grade level or to graduate high school.
- SAI served as an early intervention for incoming 6th and 7th graders and for high school students going into college, trade school, and the workforce, as a supplemental math support or further math preparedness to pass Algebra 1, a California High School Graduation requirement, or successfully complete 3 Math High School courses (A-G Requirements).
- An additional goal was to increase students' math confidence, abilities, and increase representation in STEAM fields within higher education through offering students this curriculum that they would not have otherwise.

$$y = mx + b$$

### Regional Data



% of Grade 11 Meeting Math Standard  
2021-2022 California Assessment of Student Performance and Progress (CAASPP) Smarter Balanced Summative Assessment  
(Graph 1)

A-G Completion % (Graph 2)

From DataQuest (2021-2022):  
dq.cde.ca.gov/dataquest/dqcons

From CAASPP (2021-2022):  
caaspp-elpac.ets.org/caaspp/DashViewReportSBcaaspp-elpac.ets.org/caaspp/DashViewReportSB/

## 02 Research Questions, Purpose, & Methodology

### Research Questions

1. How effective was 2022 Summer Algebra Institute in terms of math outcomes based on EdReady's Pre and Post Assessment?
2. Was EdReady an effective individualized math curriculum embedded into Cal Poly Humboldt's virtual summer program? What percentage of students increased in their math outcomes with at least 57 hours of CSU SAI programming?

### Purpose

In order to provide more impactful student experience, understanding students' experiences in this 4-week virtual setting, will support Cal Poly Humboldt's Summer Algebra Institute to further increase student experience, and academic success in supplemental, and non-district driven, academic programming.

### Program Evaluation: Summative Evaluation

From the 56 students, who fully participated (by completing the pre-and post math diagnostics) we collected the following data:

1. EdReady Data: Academic Student Quantitative Math Pre & Post Data

## 03 Summative EdReady Data Analysis

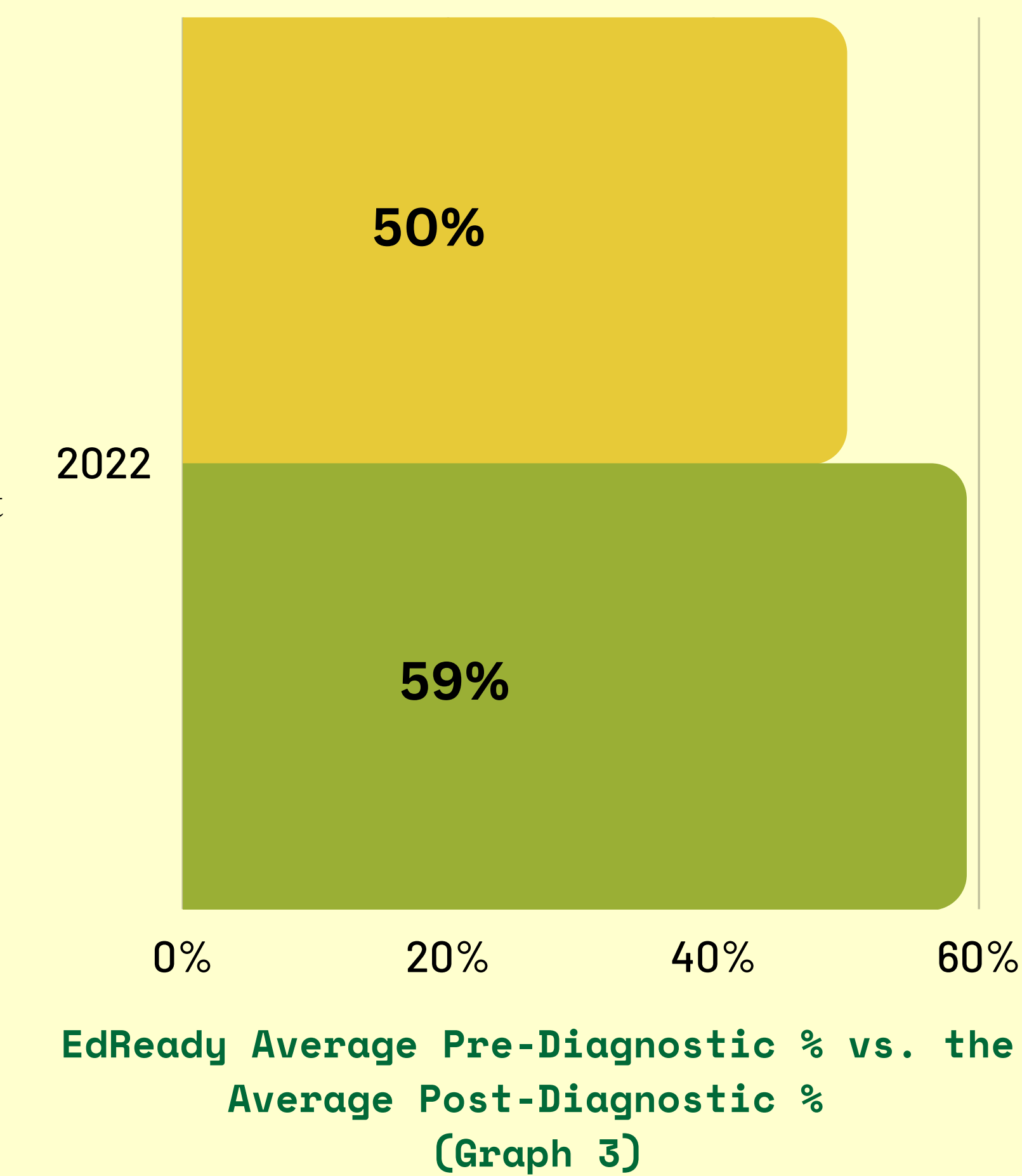
### Summative Evaluation Data Analysis

Based on the EdReady Results, EdReady Math Individualized Curriculum proved to be effective for this 4-week virtual program. As shown in the EdReady Average Pre-Diagnostic % vs. the Average Post-Diagnostic % (Graph 3), there was an average increase of 9% points improvement from the 56 students who completed both EdReady's Pre and Post Math Diagnostic. Students pre-Diagnostic showed that on average they scored at 50% on their math track. Following the four-week supplemental math summer program, students on average were scoring at 59% on their math diagnostic.

47 students improved on their math skills based on the pre and post diagnostics. 83.9% of students on average, improved their math scores. In accordance 5 students, tested out of their beginning math track, and advanced to a higher math track.

EdReady resulted as an effective individualized math model for students to increase and gain additional math competency throughout the 4-week virtual math programming.

■ Average Pre-Diagnostic %  
■ Average Post-Diagnostic %



EdReady Average Pre-Diagnostic % vs. the Average Post-Diagnostic % (Graph 3)

## 04 EdReady Data Findings

From a Summative Evaluation Approach, we found the following:

1. EdReady is an effective math programming based on the 83.9% math improvement rate.
2. Curiously, 9 students did regress on their math score compared to their pre and post diagnostic. It would be interesting to understand why these students did not improve?
3. Moving forward for Cal Poly Humboldt's SAI 2023, we will be implementing EdReady.
4. Klamath-Trinity Joint Unified School District signed on EdReady during the academic school year 2022-2023, which was integrated into their math program to complement their current math curriculum at the Middle School and High School level.

## 05 Conclusion

Cal Poly Humboldt's Summer Algebra Institute will continue to integrate EdReady. Moving forward with Cal Poly Humboldt's SAI teachers, TAs, and staff will encourage students to participate in completing more EdReady modules, and having all students who have registered, and confirmed their participation in the program to complete both EdReady's pre and post diagnostics. Our following goals based on this summative evaluation, is the following:

- Increasing Del Norte students to participate in SAI 2023, since Del Norte's average student meeting or exceeding 11th grade math standards are 10.32%, the lowest math county average that this Cal Poly Humboldt SAI serves.
- Ways to encourage our school and community partners to apply and use EdReady as a supplemental math resource, since students meeting math standards are low.

Our next research project for Cal Poly Humboldt's SAI 2023, will be understanding students who receive a D/F in a math class from a Case Study using a Community-Based Participatory Research Community-Based Participatory Research approach.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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**CAL POLY HUMBOLDT**  
**SUMMER ALGEBRA INSTITUTE**  
**ROBOTICS**  
**MATH • ARTS • CULTURE**

**FREE Four-Week Virtual Program • July 5<sup>th</sup> - 29<sup>th</sup> • 8:30am-12:30pm**  
**Orientation Dates June 27<sup>th</sup> - 28<sup>th</sup>**

- Improve your skills in basic to advanced mathematics & earn 5 math credits towards graduation (60 hours)
- Discussion on cultural knowledge and contributions to the field of mathematics
- Topics include EdReady math learning systems, environmental science, & robotics and coding
- Optional: College Knowledge field trip to Cal Poly Humboldt

Open to 9<sup>th</sup> - 12<sup>th</sup> graders. Robotics set, art & math supplies, calculator, and gifts are yours to keep!

Scan QR code or visit [tinyurl.com/cph-robotics](http://tinyurl.com/cph-robotics) to register

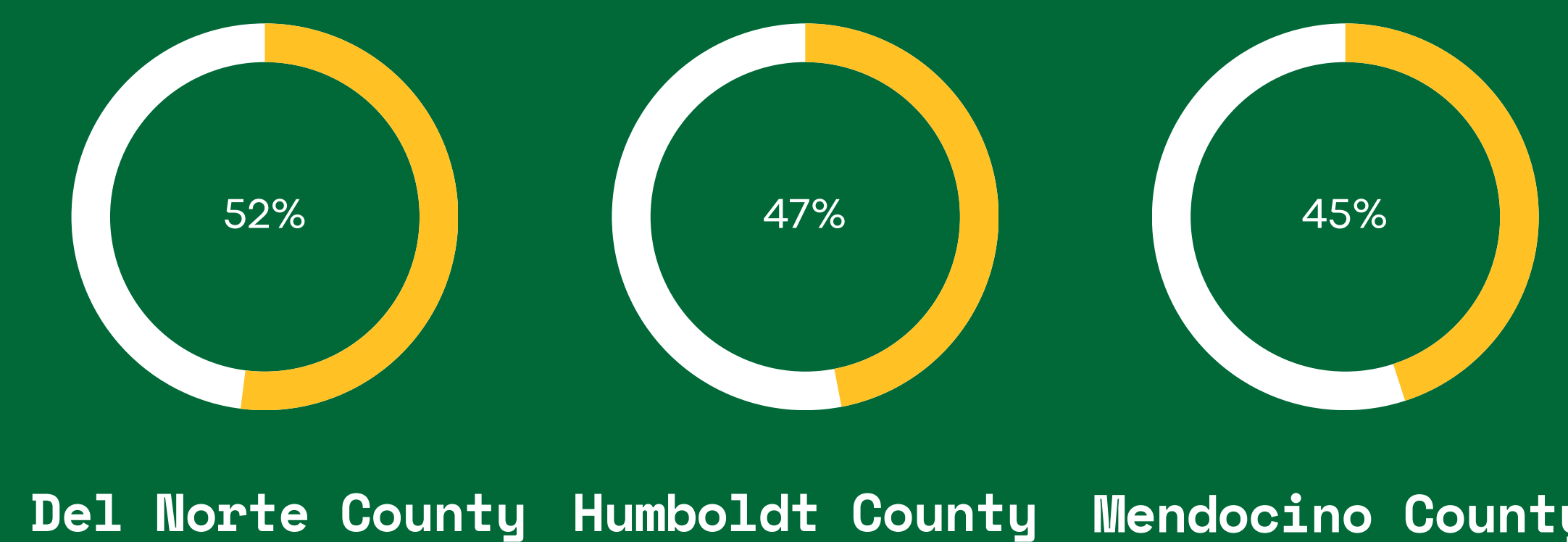
For the second consecutive summer, Cal Poly Humboldt's Summer Algebra Institute's (SAI) goal was aimed at demystifying Science, Technology, Engineering, Arts, and Mathematics (STEAM) related projects, majors, and careers, to further increase Humboldt, Del Norte, and Mendocino County BIPOC (6th-12th grades) students' interests in pursuing majors and careers in STEAM, and minimize math gaps.

Students who enrolled in the virtual 2022 SAI, a 4-week program, completed a minimum of 57 hour intensive individualized Mathematics course using EdReady, engaged in 19 days of culturally relevant STEAM curriculum through mathematical classroom instruction, and participated in workshops and programming on: College & Career Preparation, Financial Aid, and Study Skills.

Based on the students' grade level, and math skills, students were placed in the proper math cohort:

1. Foundational Math;
2. Algebra Readiness;
3. Advanced Algebra Readiness;
4. Geometry Readiness A.

### Black, Indigenous, or Student of Color (BIPOC)



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### Participants

