

# Preparing All Students for Math 1 With Comprehensive Mathematics Reform

**Update for the NC State Board of Education  
Planning & Work Session Nov 2023**

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# Current Context for Math

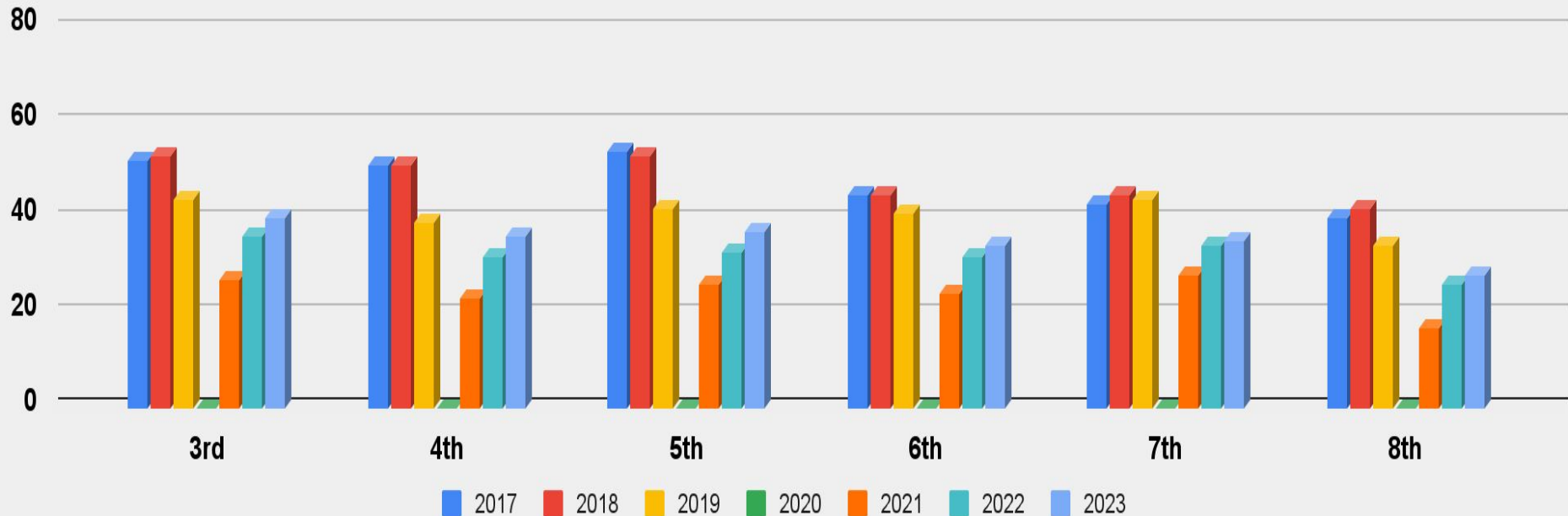
# The culture/climate around Math

- “I’m not a math person”
- “It’s okay, math is hard”
- “When am I going to use this?” - Math as a study of Math
- Current approach to Math can be traced back to 1894 with Calculus as the end goal.



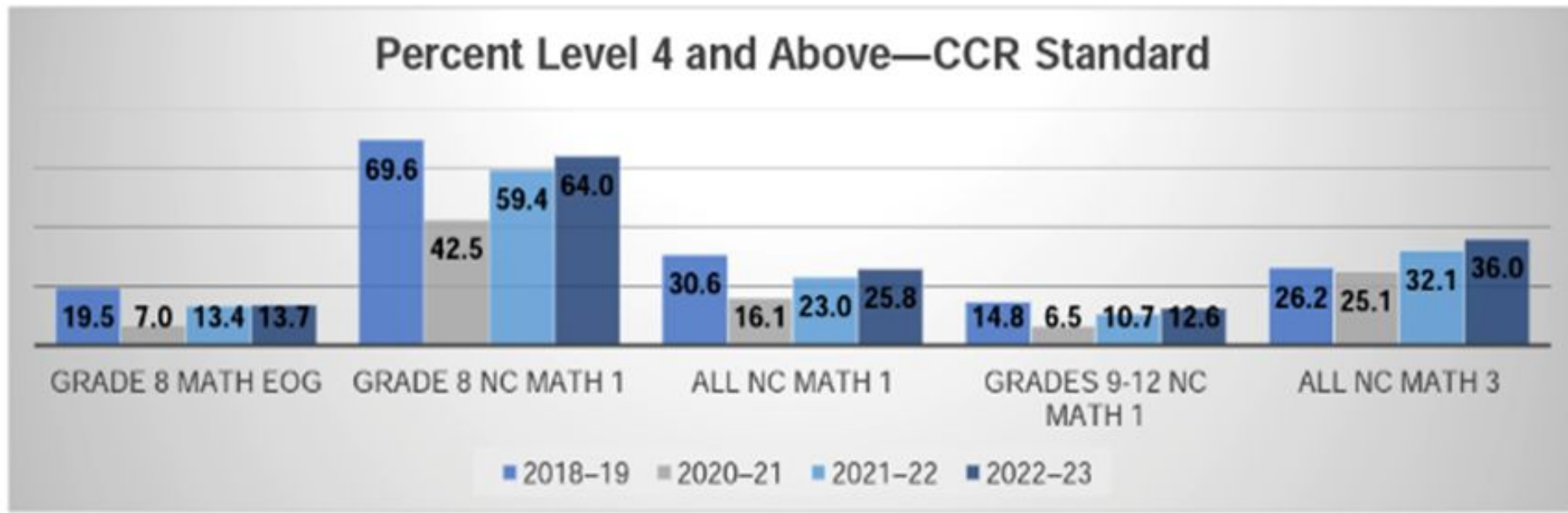
# Recent Math Data Trends

## 3rd-8th Grade Math College/Career Proficiency



# Recent Math Data Trends

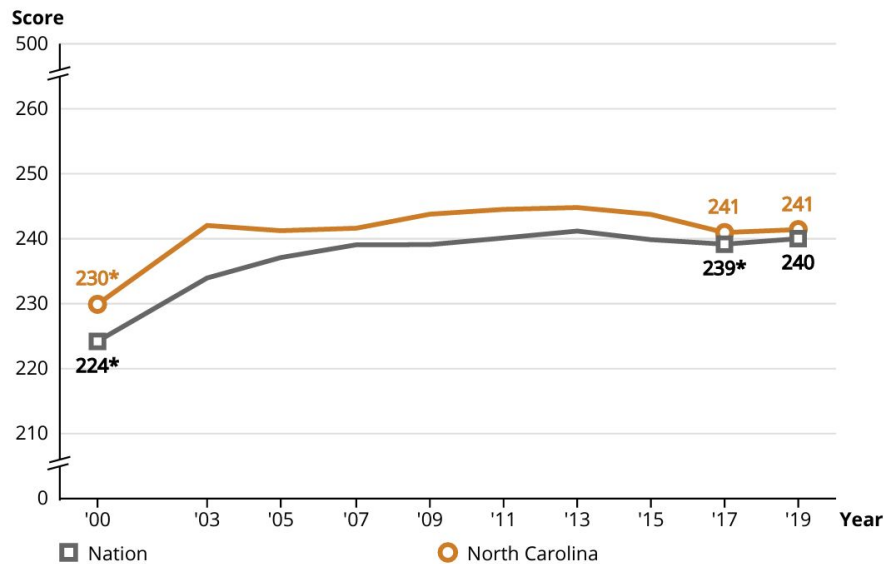
## 2022–23 Grade 8 and High School Mathematics Test Results



# Recent Math Data Trends

## NAEP 2019 Grade 4 Mathematics

### Average Scores for State/Jurisdiction and Nation



\* Significantly different ( $p < .05$ ) from 2019. Significance tests were performed using unrounded numbers.

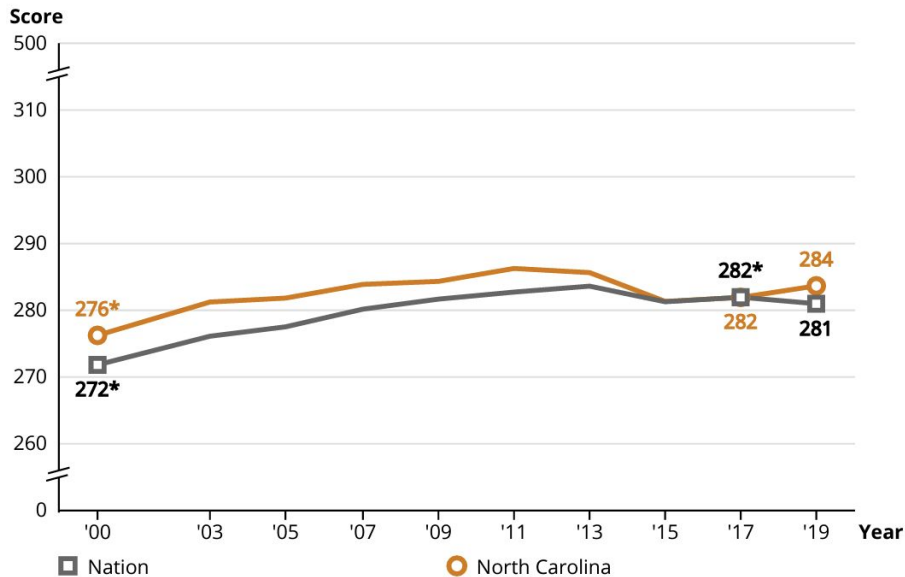
### Score Gaps for Student Groups

- In 2019, Black students had an average score that was 25 points lower than that for White students. This performance gap was not significantly different from that in 2000 (23 points).
- In 2019, Hispanic students had an average score that was 16 points lower than that for White students. This performance gap was not significantly different from that in 2000 (18 points).
- In 2019, male students in North Carolina had an average score that was not significantly different from that for female students.
- In 2019, students who were eligible for the National School Lunch Program (NSLP), had an average score that was 21 points lower than that for students who were not eligible. This performance gap was not significantly different from that in 2000 (20 points).

# Recent Math Data Trends

## NAEP 2019 Grade 8 Mathematics

### Average Scores for State/Jurisdiction and Nation



### Score Gaps for Student Groups

- In 2019, Black students had an average score that was 31 points lower than that for White students. This performance gap was not significantly different from that in 2000 (35 points).
- In 2019, Hispanic students had an average score that was 22 points lower than that for White students. Data are not reported for Hispanic students in 2000, because reporting standards were not met.
- In 2019, male students in North Carolina had an average score that was lower than that for female students by 5 points. This performance gap was wider than that in 2000 (2 points).
- In 2019, students who were eligible for the National School Lunch Program (NSLP), had an average score that was 27 points lower than that for students who were not eligible. This performance gap was not significantly different from that in 2000 (28 points).

# Ensuring All Students are Prepared for Math I

## Our Strategy:

DPI is developing a comprehensive math reform package to be recommended to Superintendent Truitt and presented to the State Board for review and approval in time for the legislative short session that will include:

- A request for an early math screener for all elementary grades
- Policies for guidelines on best instructional practices for math teachers as well as recommendations for standards-aligned math curriculum
- A statewide system of supports for K-8 math teachers to include state-funded math professional development and coaching
- Policies for comprehensive math intervention programs aligned to MTSS



# Math Pathways - Background

# Questions around Math...

What Math does EVERY graduate need to know?

What Math does EVERY graduate want to know?

- How can we increase the application of math content in our classrooms?
- How can we increase proficiency for all students in math?
- How can we increase student interest in math?
- How can we demonstrate the ways math instruction connects with the Portrait of a Graduate?



# Current work of the K-12 Math Team

## Building capacity of district/school leaders & Responding to PD Requests

- Knowledge base of standards, mathematical practices
- Deconstructing standards
- Utilizing math practices to ensure rigor and student engagement
- Increasing the level of Rigor by:
  - Procedural fluency + Conceptual + Application

# Math Standards Timeline

- Current Math Standards were implemented in stages:
  - Math 1, Math 2, Math 3 - implemented 2016-2017
  - K-8 Math - implemented in 2018-2019
  - Math 4 - implemented 2020-2021
- K-12 Math standards will all go into the review phase beginning in the 2024-2025 school year
- Any recommendations for starting the revision phase will be brought to the Board in the summer of 2025.



# Math Pathways - The Launch Years Initiative



# Launch Years Project

- A three-year initiative with 20+ states including Texas, Georgia, Oklahoma, Utah, Washington
- A joint-task force between NCDPI, UNC-System and NCCCS working together since October, 2022
  - Representatives from all three institutions including teachers, math instructional coaches, district staff, advisors, counselors, NCDPI staff (OAS, Testing/Accountability, CTE), UNC System staff, NCCCS staff



# Launch Years Project

- Why is it relevant for our students?
  - Seeking answers to questions such as:
    - What math do all students need to know to graduate?
    - How to better align math options to students' career interests and create opportunities for student choice?
    - What math is essential when considering future workforce development opportunities/needs?
  - Improve math outcomes for all students
  - Seeking better alignment and clear connections between K-12 instruction, workforce development, and post secondary options
  - Inform the Math Standards review process



# 2023-2024 Launch Years Work Plan

DATE	STEP
August - December 2023	Write draft recommendations based on identified challenges
Dec. 2023 - Jan. 2024	<ul style="list-style-type: none"><li>● Full taskforce review and discussion.</li><li>● 1st draft of recommendations completed.</li></ul>
February 2024	Partner Institution leadership review
April 2024	Stakeholder review and input
June 2024	Full taskforce review and incorporation of feedback
July/August 2024	<ul style="list-style-type: none"><li>● Final Draft of Recommendations.</li><li>● Start of the REVIEW process of the current K-12 Math standards.</li></ul>

# Questions?

