2023 Statewide Year-Over-Year Trends in Achievement: Before, During, and After the Pandemic

Presentation to the NC State Board of Education, January 2024
Dr. Jeni Corn, Director of Research & Evaluation, NCDPI
Dr. John White, Vice President, SAS EVAAS for K-12

North Carolina Department of
PUBLIC INSTRUCTION

Purpose of Today's Presentation

- Explain the new recovery model and the information it provides

- Review the state-level trends from 2013-2023

S.L.2023-134 § 7.52.(b).

Of the funds appropriated to the Department of Public Instruction by this act, the sum of five hundred fifty thousand dollars **($550,000) in nonrecurring funds for each year of the 2023-2025 fiscal biennium** shall be used to continue to partner with SAS to fund **learning recovery analysis, student projections to pre-pandemic expected performance, and web reporting on year-over-year modeling for learning recovery.**

2021-2022 Cohort Analysis: State-Level

NC emerges as a national leader in research on recovery from the pandemic

- Office of Learning Recovery, in partnership with EVAAS Team at SAS, releases state-level recovery reports

- NCDPI uses results to drive state-level decision-making and advocacy efforts about allotment of ESSER-funds

2021-2022 Cohort Analysis: Local-Level

NCDPI commits to supporting local evidenced-based interventions by providing recovery impact data directly to local leaders:

- Local Recovery Reports and Effect Size Tables and Dashboards
- Difference between Actual and Pre-Pandemic Score (DBAPPS) available in EVAAS Web Portal

New Year-Over-Year (YoY) Analysis

NCDPI worked with the EVAAS Team at SAS to develop a rigorous and empirical way to answer these *persistent policy questions*:

- How will we know when the state/district/schools have "recovered" in NC?
- Can we quantify "recovery"?
- How can we account for local context in terms of progress towards "recovery"?

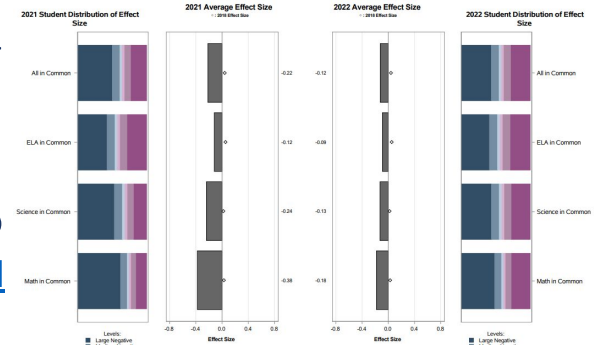Reports for 2022, 2023, 2024

TWO Different Recovery Analyses

"Cohort" Model →

Impact of Lost Instructional Time in 2022 **&** *Recovery Analysis* in 2023

Link to report, Link to district recovery dashboard

←"Year-Over-Year" Model

Year-Over-Year Trends and Impacts from the Pandemic *NEW*

Link to report

North Carolina Department of
PUBLIC INSTRUCTION

Year-Over-Year Model

Introduction

Measures the impact of the pandemic and the extent of recovery.

Uses state/LEA average achievement, leveraging trends that existed prior to the pandemic.

Evaluates trends in average results for specific assessments over time rather than creating pre-pandemic expectations for individual students.

§sas

Year-Over-Year Model
Overview

The model provides insight into three time periods:

1. **Pre-Pandemic Trend represents the overall trend in achievement for an assessment between 2013 and 2019.** This line smooths out the year-to-year variation in the observed achievement for the district and the state.

2. **Pandemic Impact represents the extent to which actual achievement in 2021 diverged from the pre-pandemic trend, had it continued to 2021.** This line represents a counterfactual, or an estimate of what achievement might have been if the pre-pandemic trend had continued to 2021.

3. **Distance to a Full Recovery represents the extent to which actual achievement in 2022 and in 2023 diverged from a full recovery according to the threshold.** There are two ways to consider recovery: a continuation of the pre-pandemic trend based on the 2013-2019 timeframe or a three-year threshold representing the more immediate time frame of 2017-2019.

This is a more robust way to measure trends than simple pre/post comparison of district averages. The model considers trends in achievement prior to the pandemic.

§sas

# Year-Over-Year Trends and Impacts from the Pandemic: State Level Results

Statewide Pre-Pandemic Trend, Pandemic Impact, and Distance to Recovery Thresholds by Assessment

Assessment		Pre-Pandemic Trend	Pandemic Impact	Recovery: Extended Trend Threshold		Recovery: 3-Year Average Threshold	
Subject	Grade-Level	2013-2019	2021	2022	2023	2022	2023
Math	EOG Math 3	+0.01	-0.54	-0.26	-0.19	-0.21	-0.13
	EOG Math 4	+0.00	-0.50	-0.23	-0.15	-0.23	-0.14
	EOG Math 5	+0.00	-0.49	-0.27	-0.18	-0.24	-0.14
	EOG Math 6	+0.01	-0.47	-0.27	-0.24	-0.22	-0.18
	EOG Math 7	+0.00	-0.40	-0.27	-0.24	-0.24	-0.20
	EOG Math 8	-0.01	-0.48	-0.19	-0.16	-0.25	-0.23
	EOC Math 1	+0.05	-0.48	-0.31	-0.29	-0.10	-0.04
Reading	EOG Reading 3	-0.02	-0.18	-0.00	+0.03	-0.10	-0.08
	EOG Reading 4	-0.01	-0.24	-0.15	-0.07	-0.22	-0.17
	EOG Reading 5	-0.01	-0.15	-0.12	-0.07	-0.18	-0.16
	EOG Reading 6	-0.00	-0.17	-0.15	-0.12	-0.18	-0.16
	EOG Reading 7	-0.01	-0.16	-0.14	-0.12	-0.21	-0.21
	EOG Reading 8	-0.01	-0.11	-0.06	-0.04	-0.13	-0.13
	EOC English 2	-0.01	+0.10	+0.14	+0.14	+0.06	+0.04
Science	EOG Science 5	+0.03	-0.55	-0.36	-0.35	-0.20	-0.16
	EOG Science 8	+0.03	-0.32	-0.23	-0.33	-0.09	-0.15
	EOC Biology	+0.01	-0.33	-0.21	-0.16	-0.15	-0.09

Color	Effect Size
	Large Negative
	Medium Negative
	Small Negative
	Small Positive
	Medium Positive
	Large Positive

§sas

Where did this information come from?
Let's take a look at the explanatory graphs…

EOG Reading Grade 3
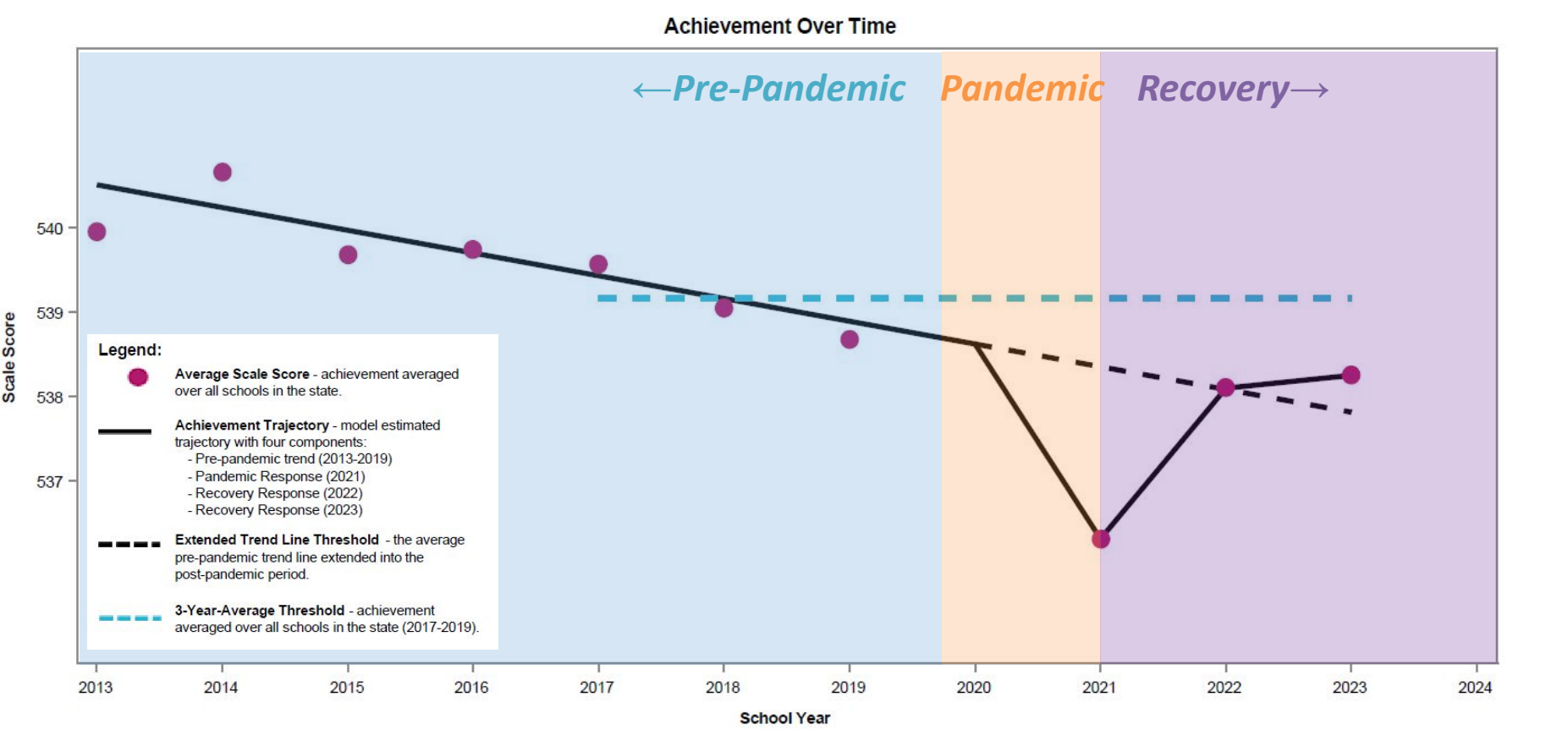
EOG Reading Grade 3 - Sample Size and % Proficient

Statistic	Year										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
# Schools	1,334	1,352	1,372	1,391	1,407	1,419	1,421	.	1,421	1,421	1,409
# Students	93,292	100,010	104,902	108,788	109,672	113,128	109,292	.	96,014	101,419	102,032
% Proficient	48.3%	63.8%	60.2%	58.5%	58.5%	56.4%	57.2%	.	45.1%	46.5%	48.0%

Pre-Pandemic   *Pandemic*   *Recovery*

§.sas

EOG Reading Grade 4

Achievement Over Time
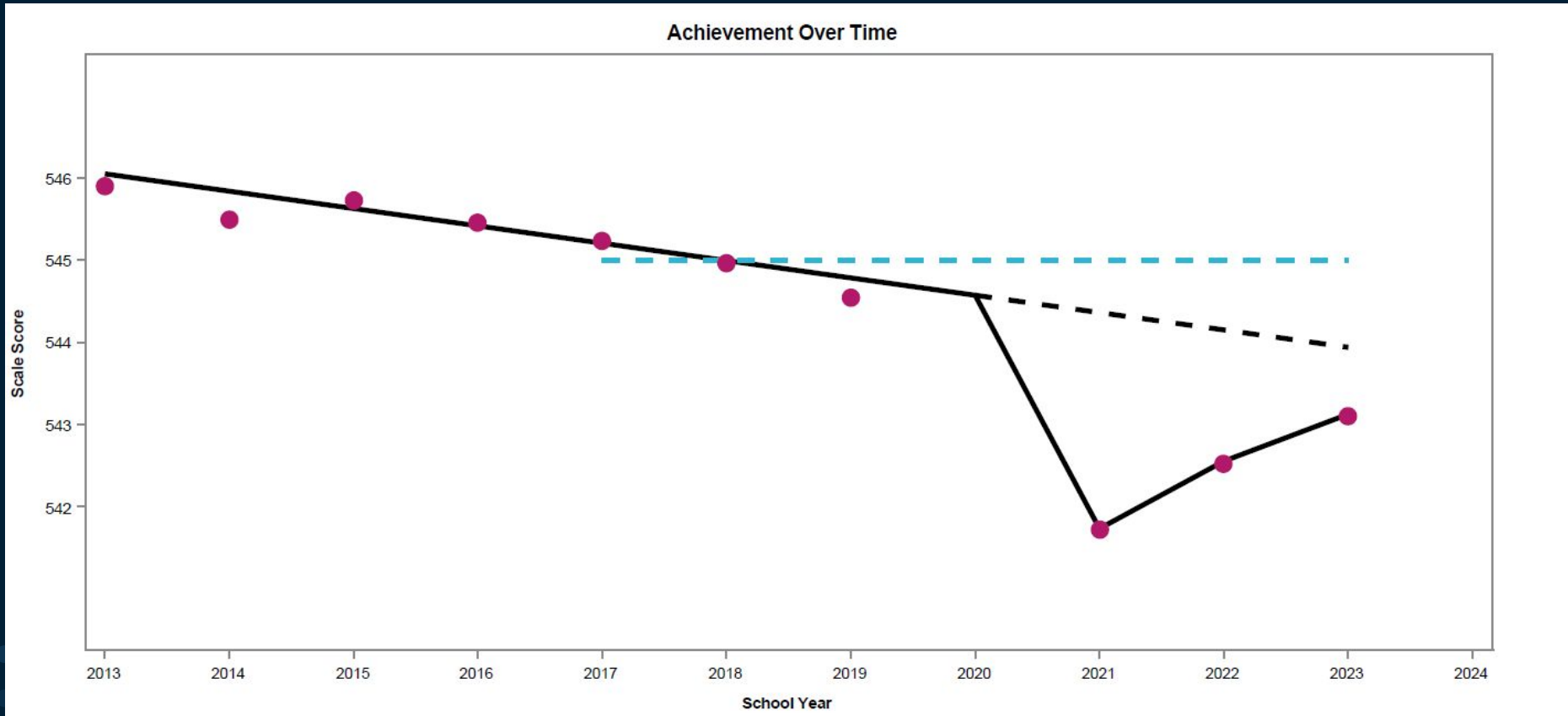
EOG Reading Grade 5

Achievement Over Time
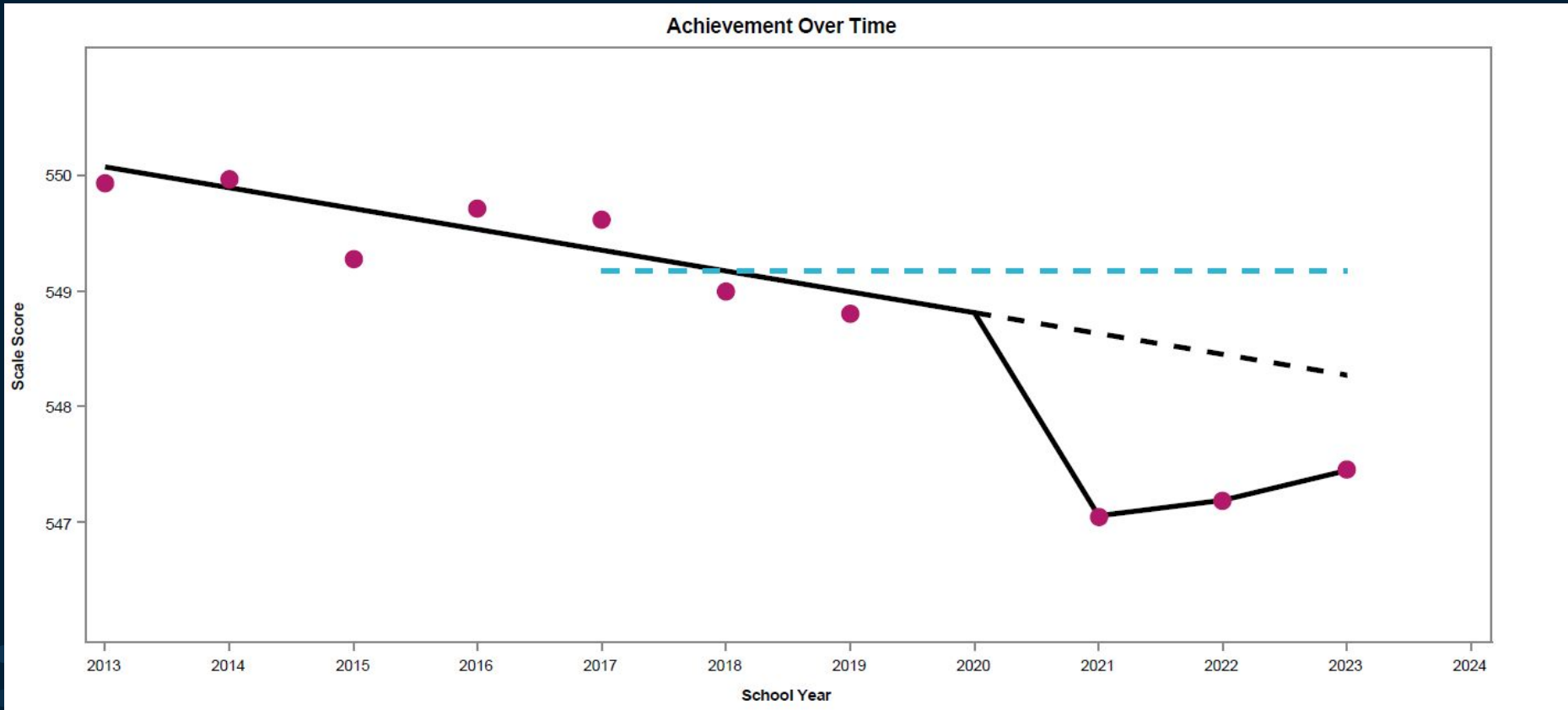
EOG Reading Grade 6

EOG Reading Grade 7

Achievement Over Time

EOG Reading Grade 8
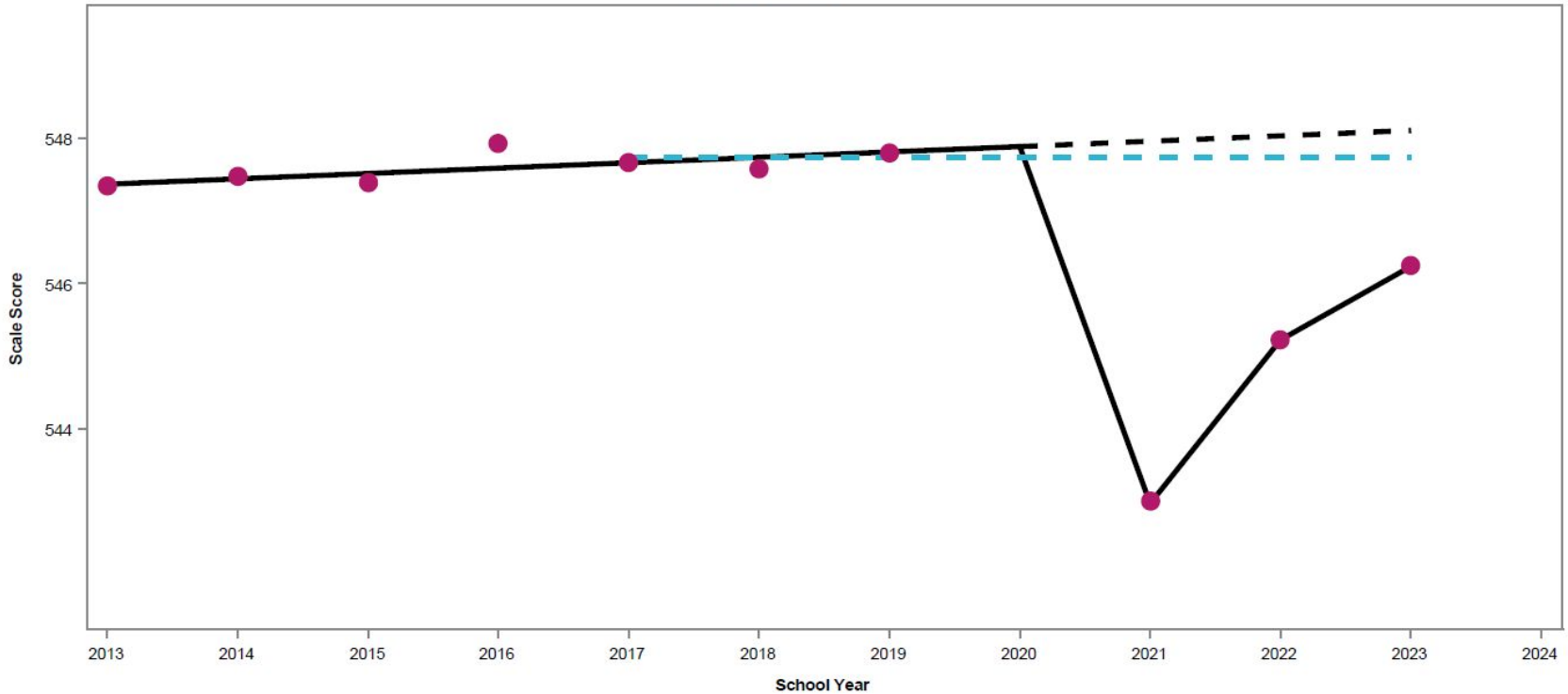

Achievement Over Time
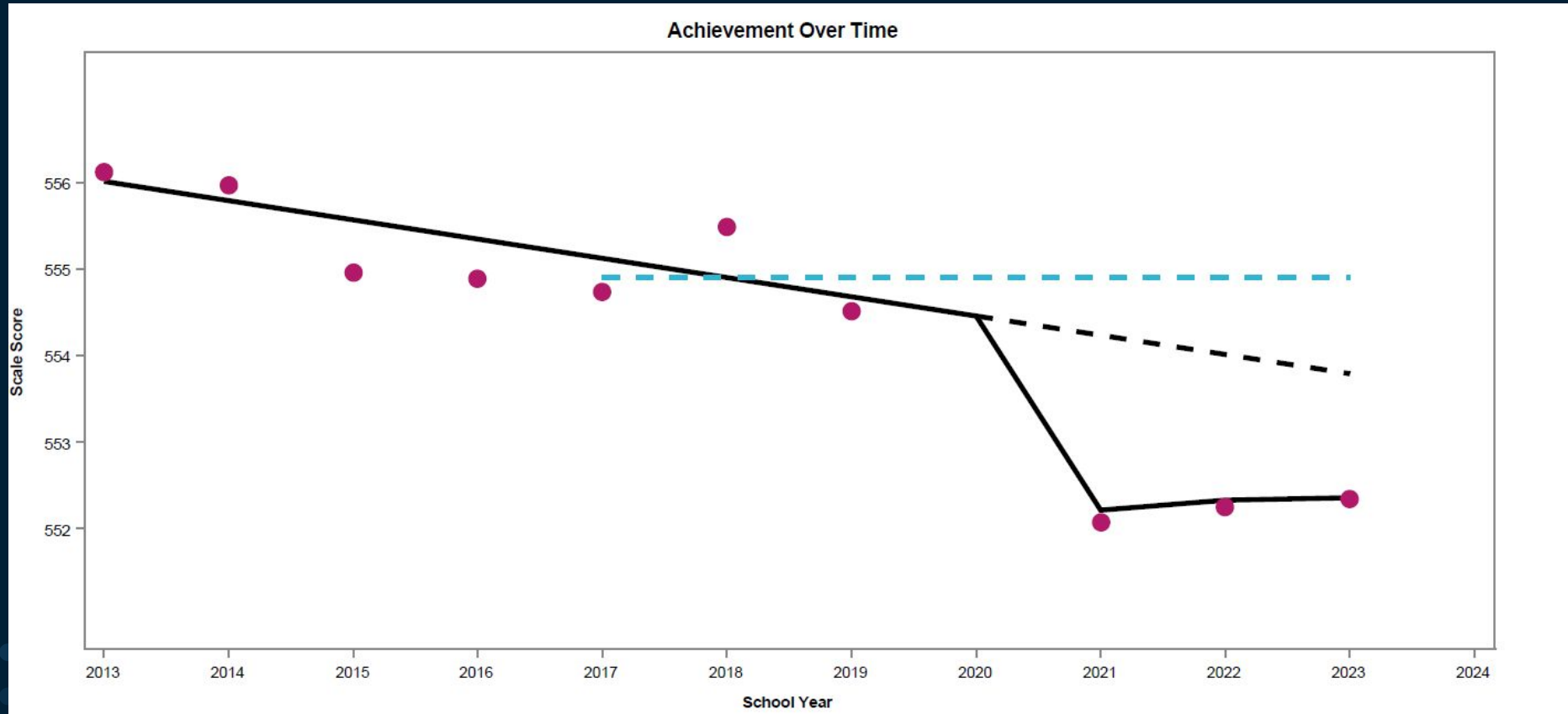
EOG Math Grade 3
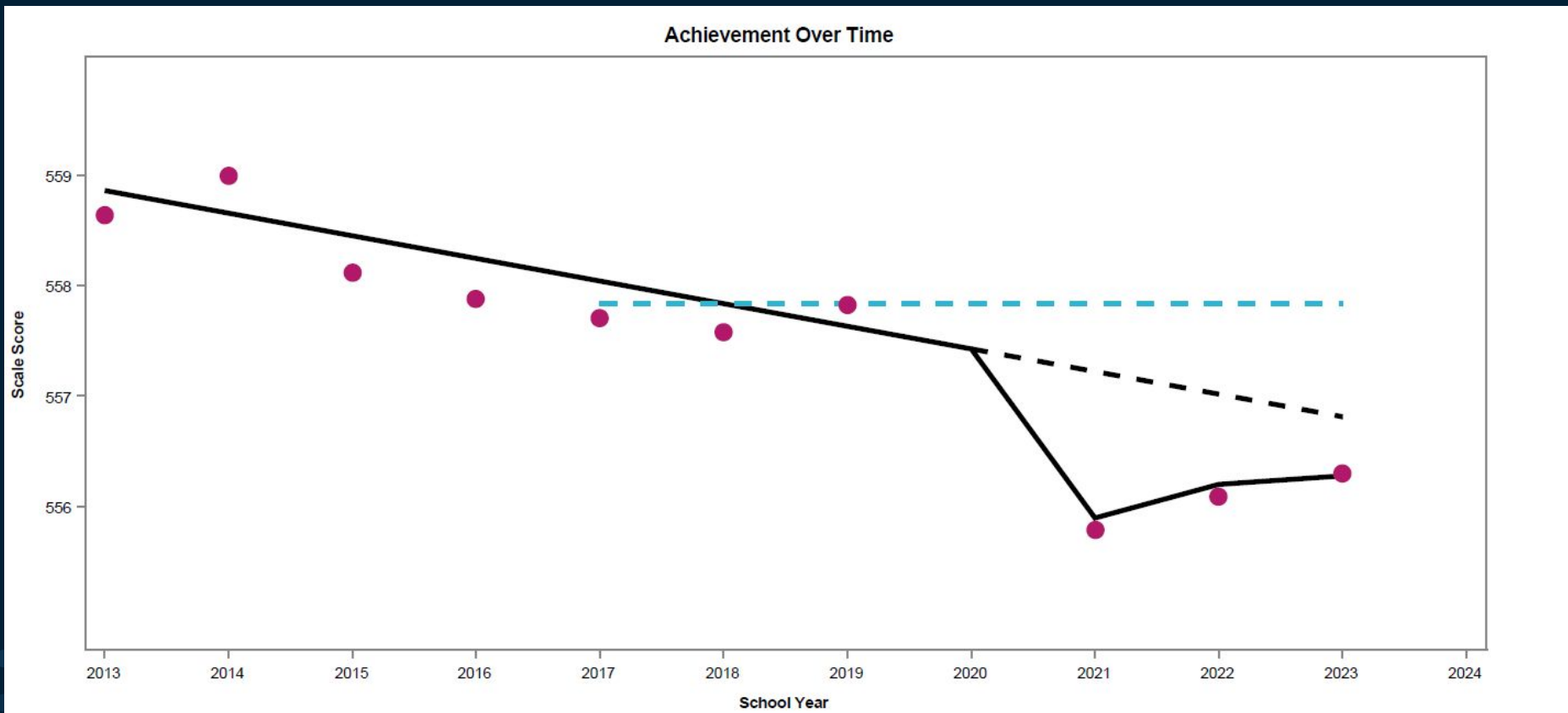
Achievement Over Time
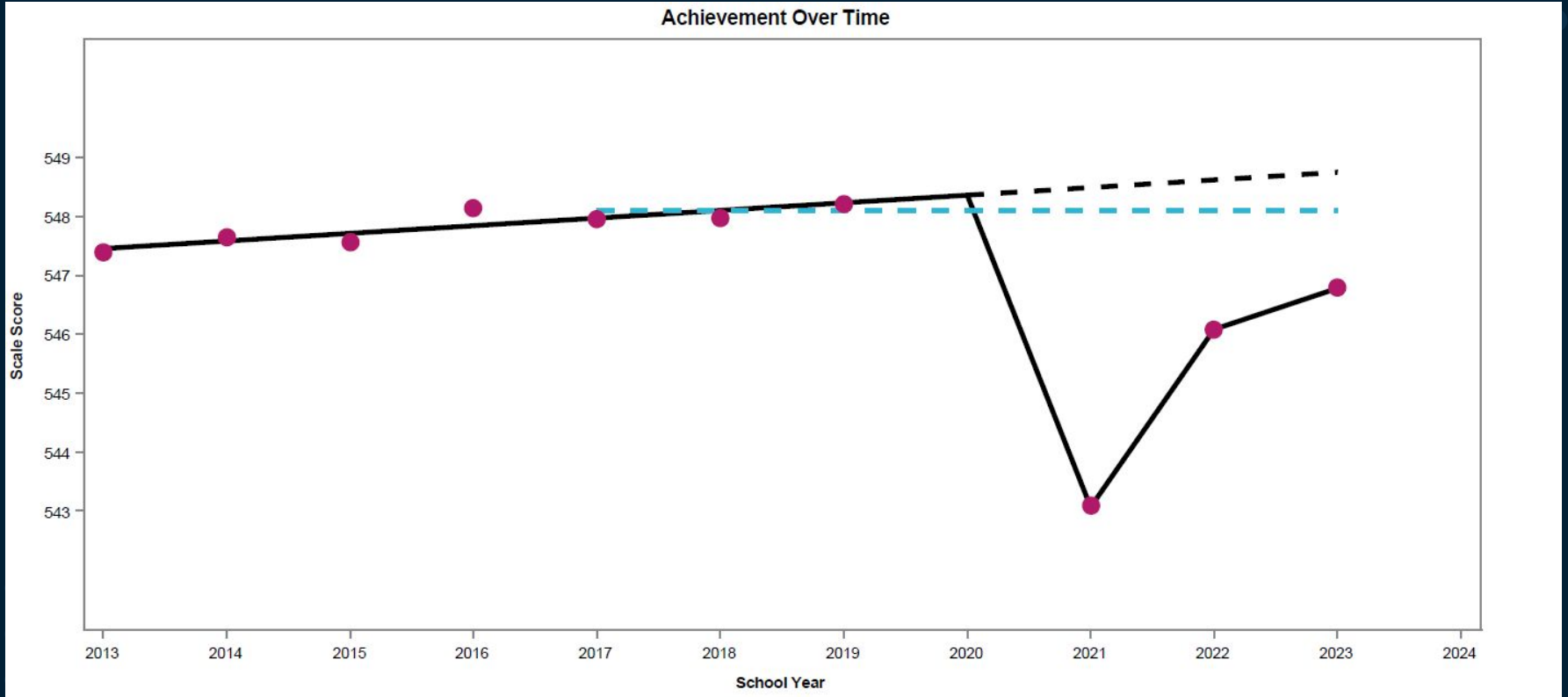
Note: The math scale changed in 2019.

EOG Math Grade 4

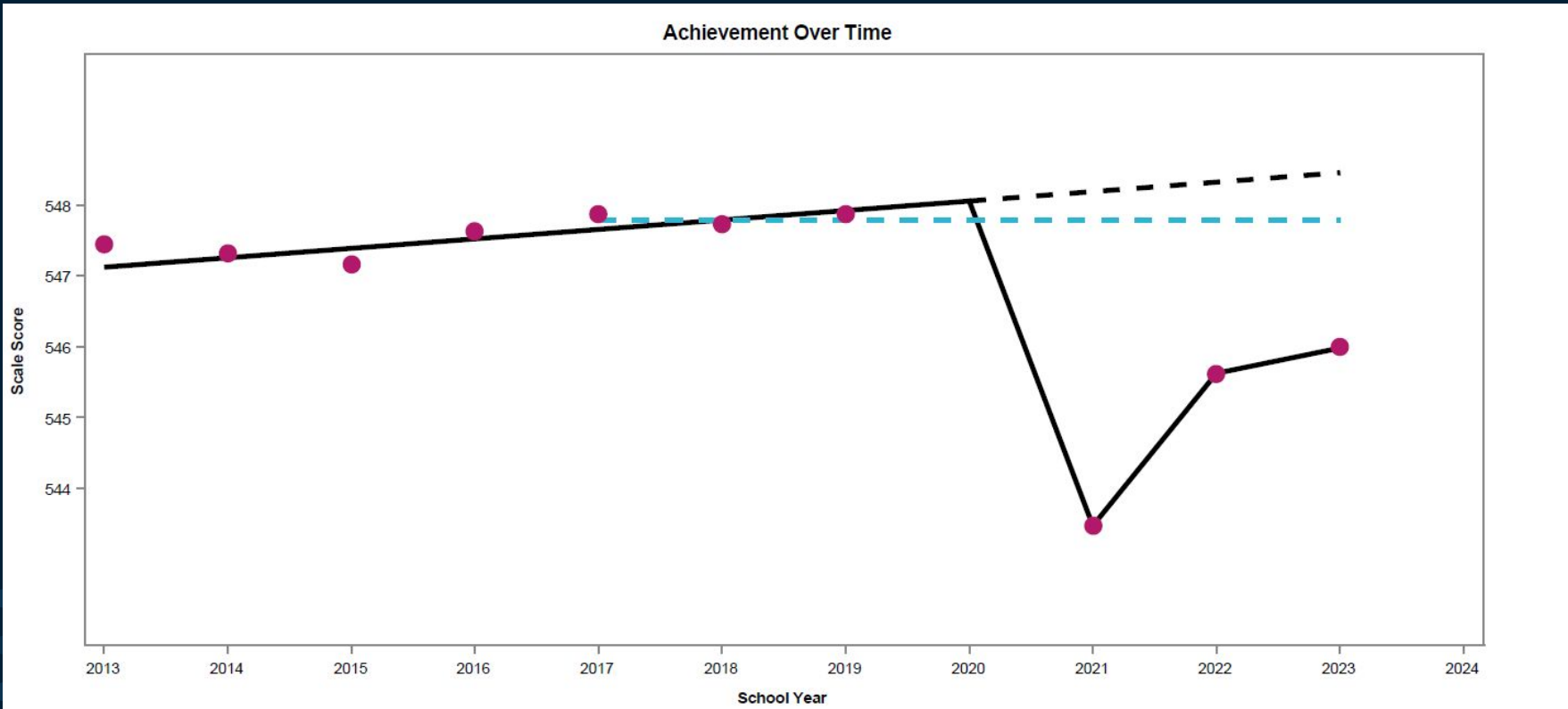**Achievement Over Time**

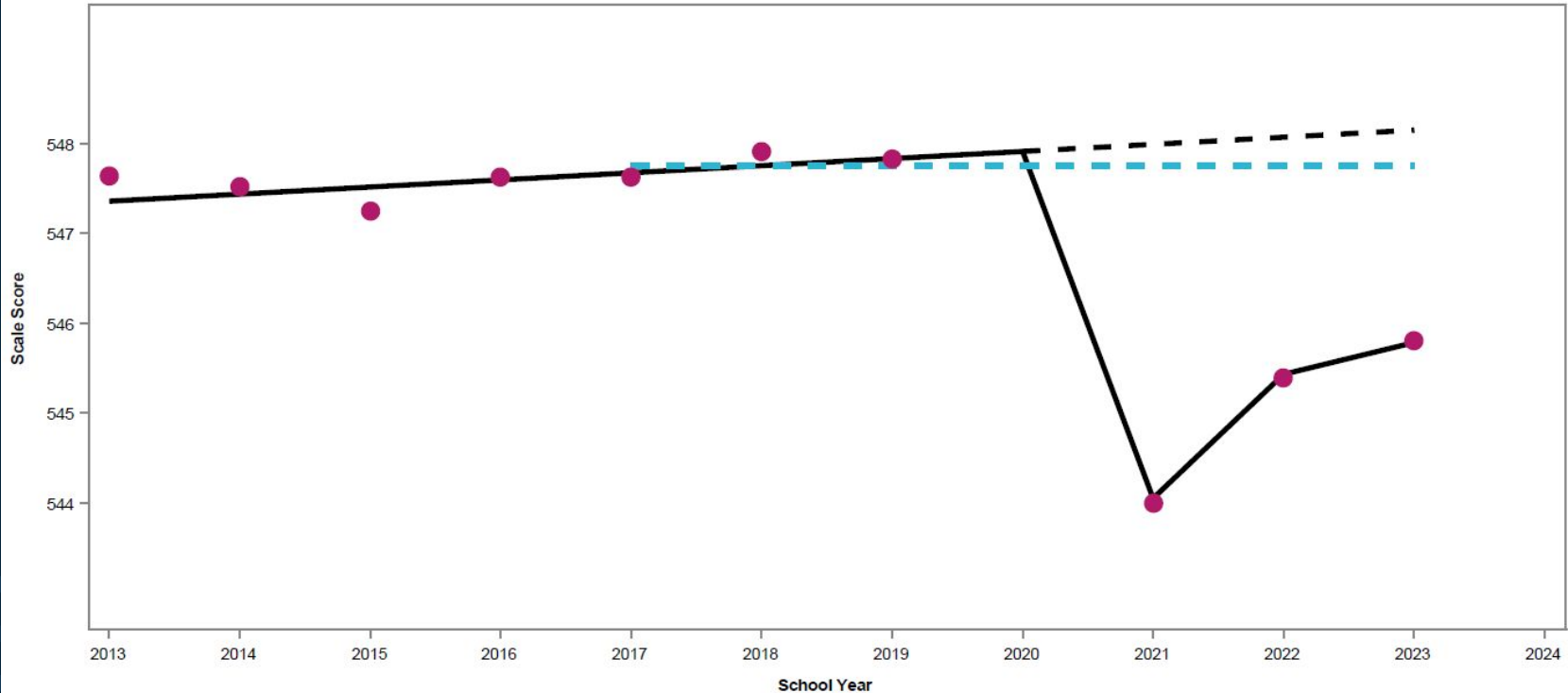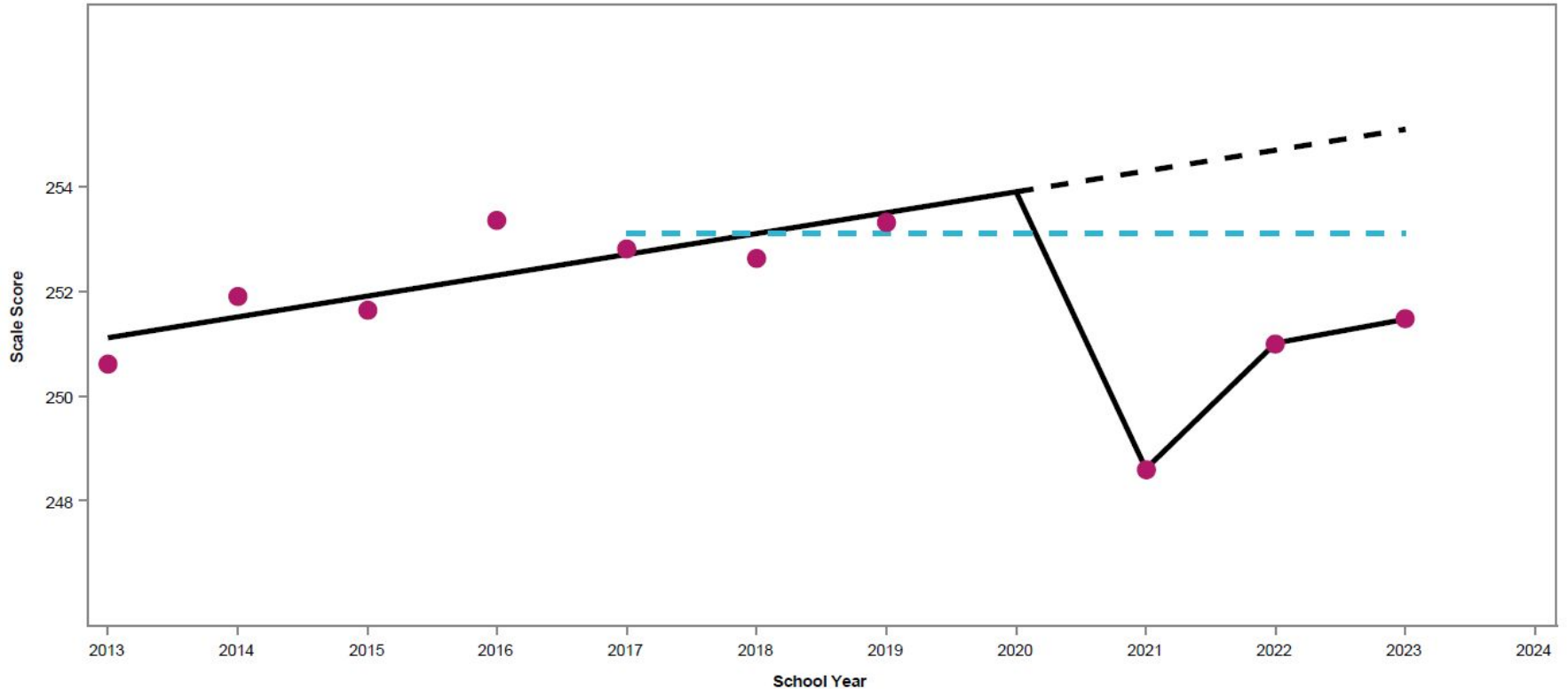Note: The math scale changed in 2019.

§sas.
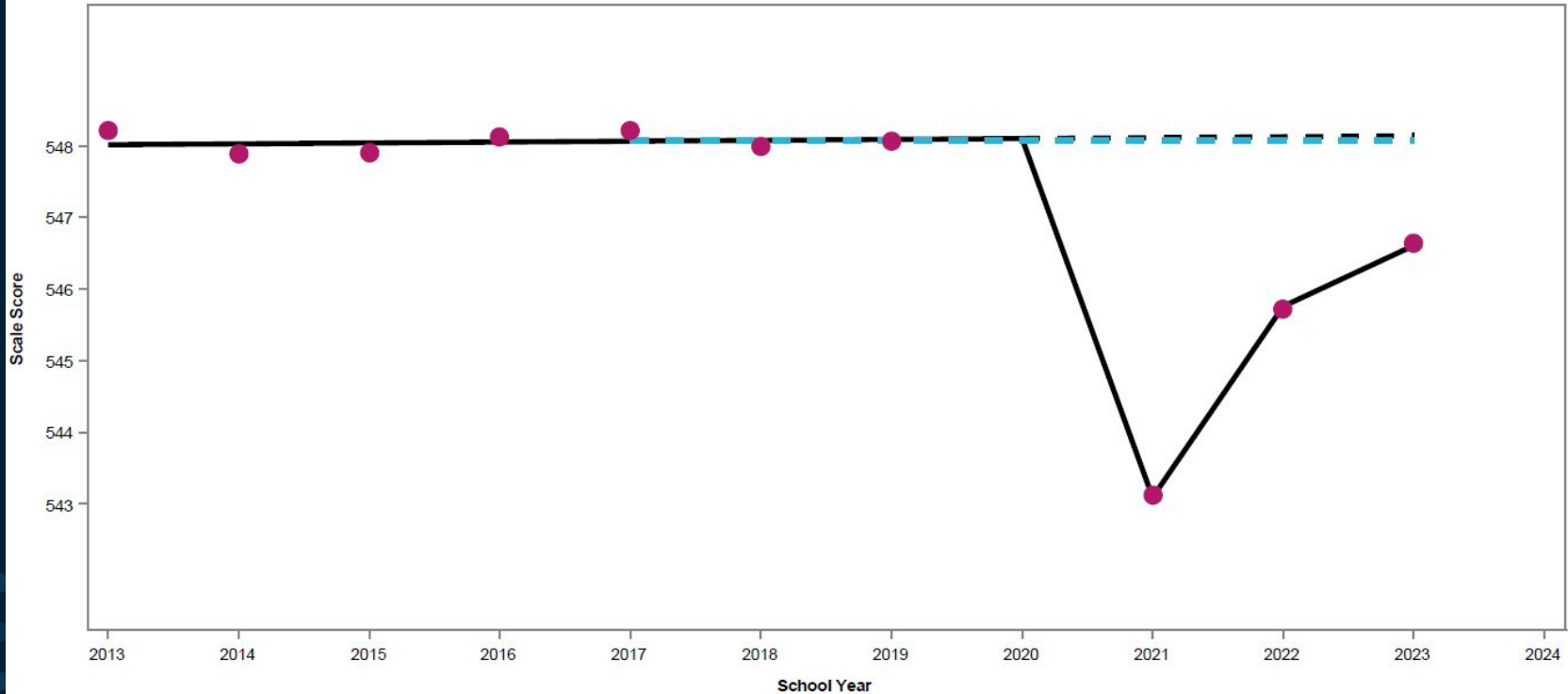
EOG Math Grade 5

Achievement Over Time

Note: The math scale changed in 2019.

EOG Math Grade 6

Achievement Over Time

Note: The math scale changed in 2019.

EOG Math Grade 7

Achievement Over Time

Note: The math scale changed in 2019.

EOG Math Grade 8

Achievement Over Time
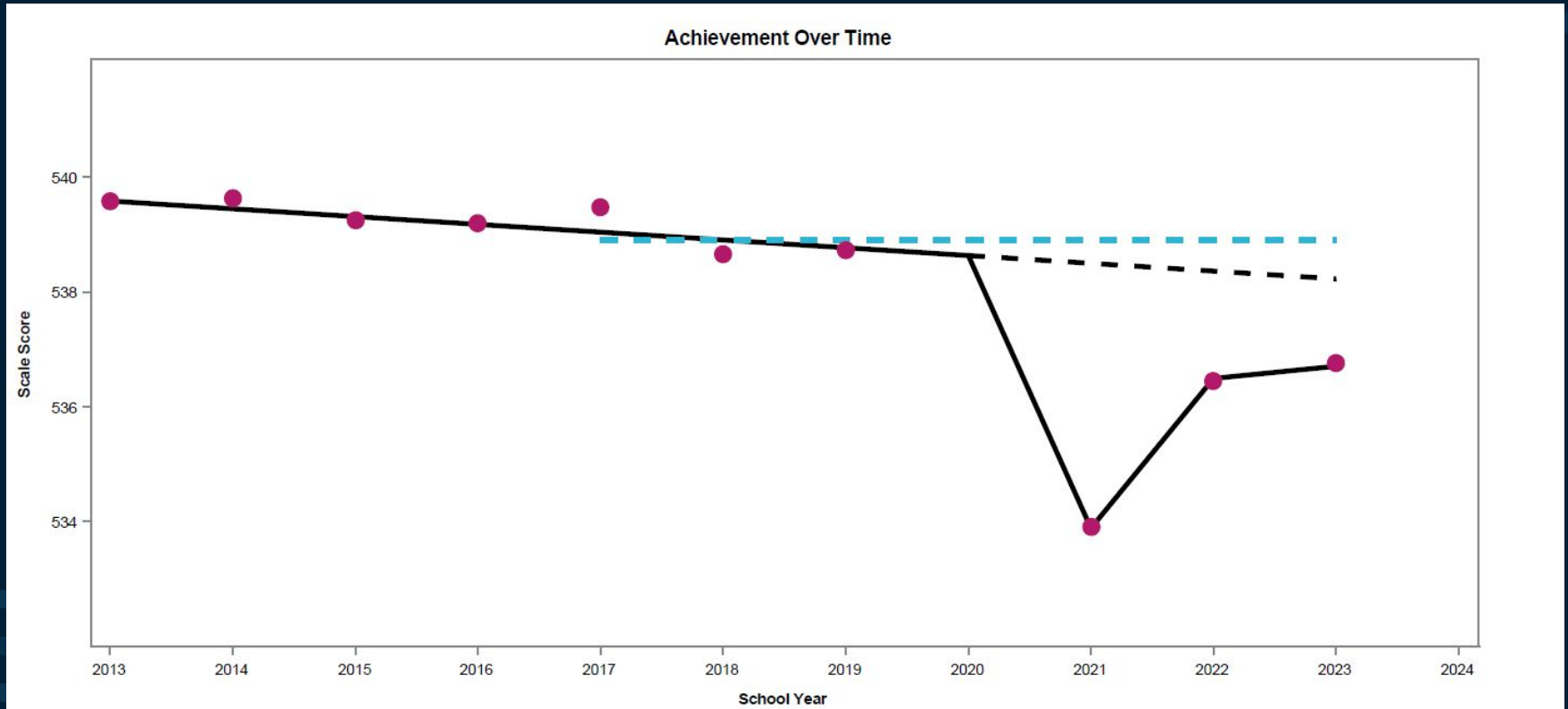
Note: The math scale changed in 2019.
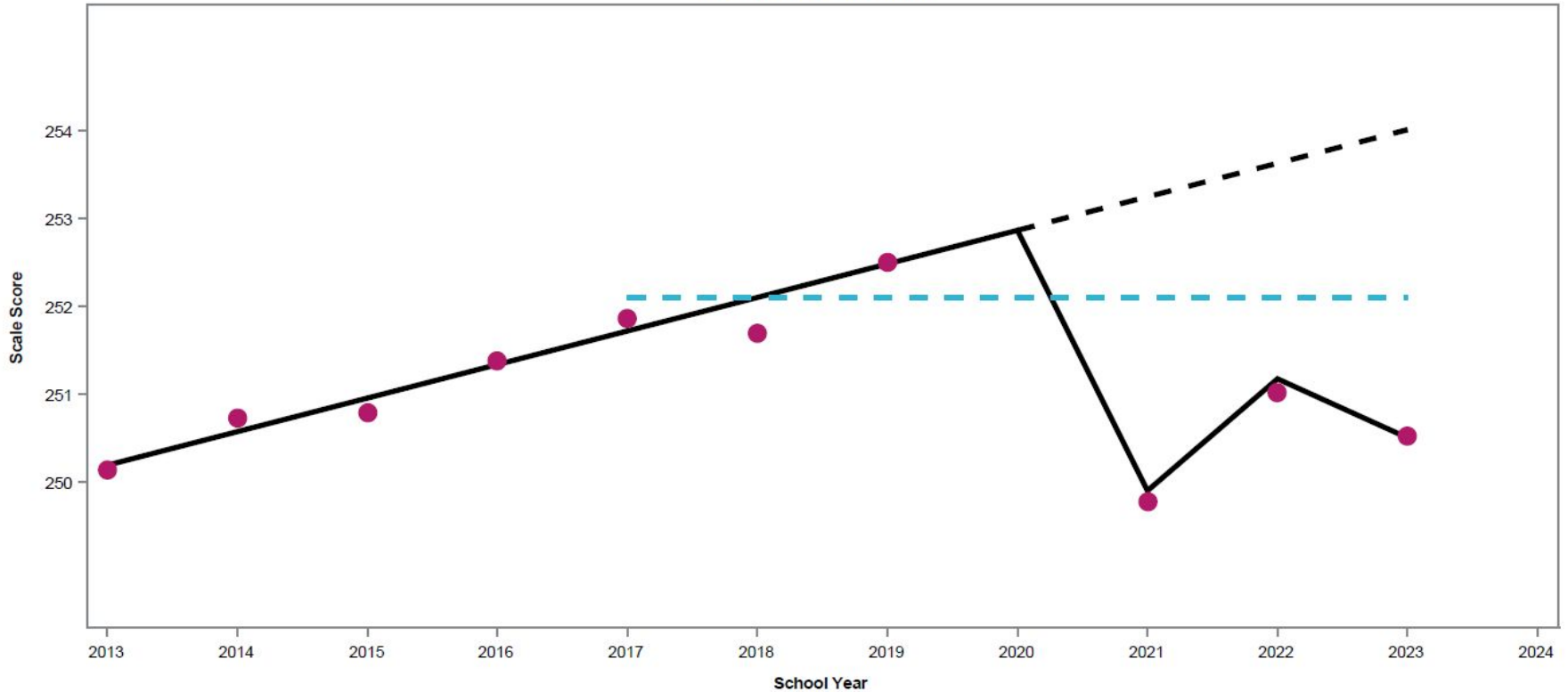
EOG Science Grade 5

Achievement Over Time
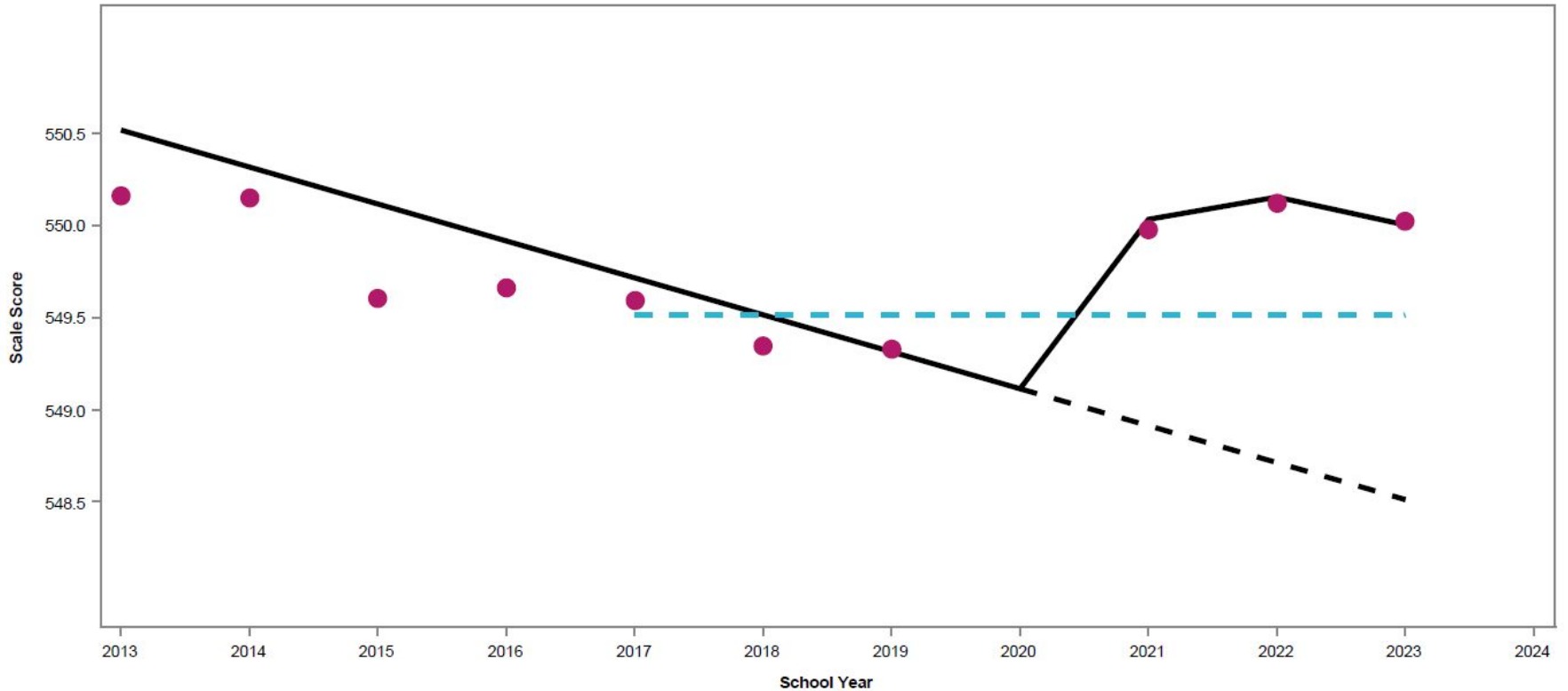
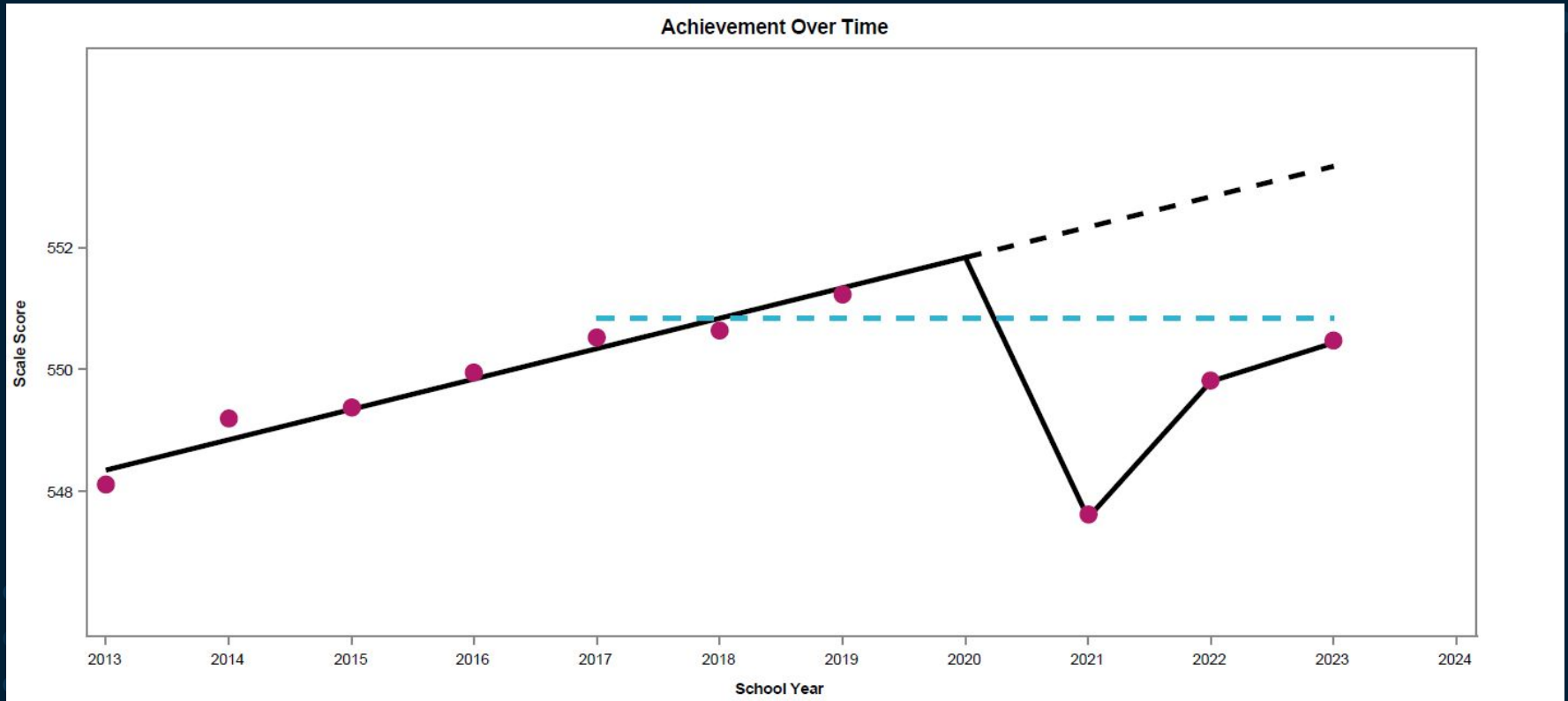# EOG Science Grade 8

EOC English II

Achievement Over Time

EOC Math 1
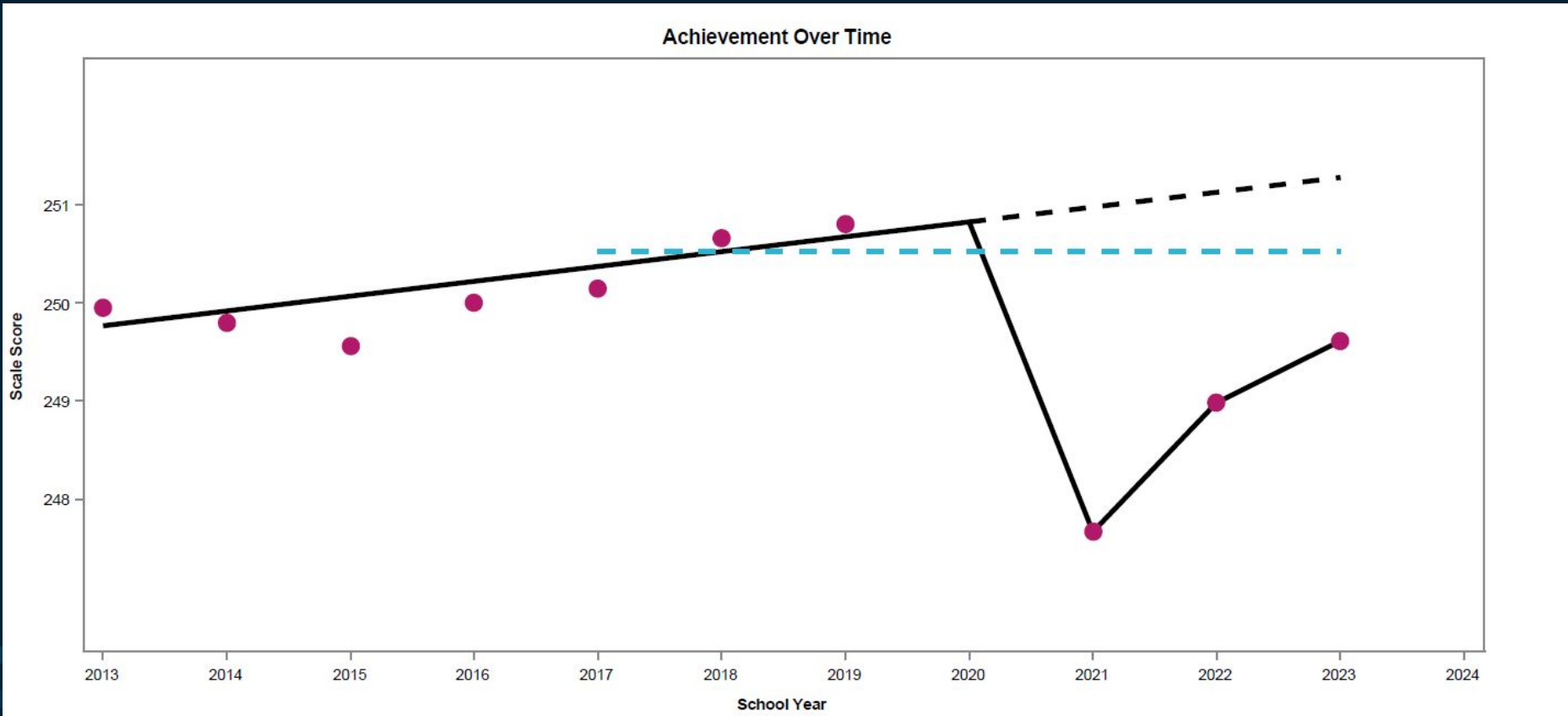

Achievement Over Time

Note: The math scale changed in 2019.

EOC Biology

Achievement Over Time

Priorities Emerging from these Results

- Celebrate early grades literacy and math progress
- Focus on targeted and evidence-based middle grades reading and math interventions
- Explore promising STEM initiatives aligned to workforce priorities
- Renewed commitment to internal NCDPI research team to study and identify evidenced-based interventions and collaborate with external research partners

Next steps

- **January 4, 2024:** 2023 State Year-Over-Year Report released
- **January 22, 2024:** 2023 Charters Only and District-Level Year-Over-Year Report + school-level data files
- **February 2-March 1, 2024**: 9 Regional + Charter Office Learning Recovery Regional Strategic Data Sessions

Partner with EVAAS on 2024 YoY Analysis and other potential uses of this analysis model