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# **Comprehensive 2017 Georgia Milestones Assessment Analyses**

**Analysis, Results, and Recommendations**

*Governor's Office of Student Achievement*

**Prepared for State Board of Education Rules Committee**

**January 10, 2018**

# Presentation Overview

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- Academic Auditing Overview
- Milestones Analyses Overview
  - Answer Change Analysis Overview
  - Unusual Response Pattern Analysis Overview
- End of Grade (EOG) Answer Change Analysis Results
- End of Course (EOC) Answer Change Analysis Results
- End of Grade (EOG) Unusual Response Pattern Analysis Results
- SBOE Recommendations

# Academic Auditing Overview

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- The Governor's Office of Student Achievement is charged under O.C.G.A § 20-14-35 with inspecting academic records of schools to ensure that education institutions are faithful to performance accountability requirements.
- O.C.G.A § 20-14-36 calls for GOSA to recommend and the State Board of Education adopt written procedures for audits.
- Since 2009, GOSA has conducted an annual audit to ensure that assessments are administered with fidelity. The results of this analysis are presented to the SBOE.

# Milestones Assessment Analyses Process Overview

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- GOSA contracts with the state testing vendor (currently Data Recognition Corporation) to conduct analyses of Georgia Milestones assessments in all grade levels and subject areas.
  - Until 2016, GOSA focused exclusively on an erasure analysis of wrong-to-right answer changes.
  - In 2016, GOSA expanded the Milestones analysis to include the following:
    - Answer change analysis for tests administered online, and
    - Unusual gains and response patterns analysis in English and Mathematics EOGs in grades 4-8.
- The results of the Milestones analyses are used as an initial flag to spur further investigation of many indicators to determine if any cheating occurred. The results do not indicate that cheating necessarily occurred.

# Milestones Assessment Analyses Process Overview

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## GOSA Desktop Audit

- GOSA conducts a desktop audit to determine a possible explanation for the flag that would remove the need for further inquiry using indicators that include but are not limited to:
  - Number of classrooms flagged in each school and whether the flagged classrooms had different test administrators;
  - Total answer changes and number of wrong-to-right (w-t-r) at the classroom level, including student-level data to determine whether erasures are concentrated in a small number of students;
  - The severity of the flag (how high the standard deviations are above the threshold);
  - Percentage of total classroom answers changed from w-t-r;
  - Type of school; and
  - History as a school of concern and previous monitoring/auditing visits.

# Milestones Assessment Analyses Process Overview

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## Example of a “no further inquiry” school:

- *Test Elementary School (Nowhere County):*
  - One classroom (5th grade-Math) was flagged w-t-r with a standard deviation (SD) of 6.7 SD
  - The classroom had 22 students.
  - 81% of classroom answer changes were w-t-r (90 w-t-r erasures out of 111 total erasures).
  - One student had 59 w-t-r answer changes out of 67 answer changes.
  - Only 38% of classroom answer changes for other 21 students were w-t-r.
  - One student was responsible for two-thirds of classroom w-t-r answer changes resulting in classroom flagged status, suggesting that systematic cheating was unlikely.

# Milestones Assessment Analyses Process Overview

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After analysis, GOSA staff make one of two determinations:

- Supplementary data reviewed sufficiently explains the reason for the flag. No further inquiry is required.
- Supplementary data reviewed does not sufficiently explain the reason for the flag. Further inquiry is required, and the school is moved to the next phase.

# Milestones Assessment Analyses Process Overview

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## Schools Requiring Further Inquiry

- GOSA makes recommendations to the SBOE concerning schools requiring further inquiry that include one or more of the following:
  - Submission of an inquiry form to GOSA describing the reasoning for the flag and steps taken to reduce the likelihood for future flags,
  - Rotation of teachers during test administration so that teachers are not administering test to students they are currently teaching, and
  - The possibility of a visit from a state monitor during spring administration of the Georgia Milestones for one or more days.

*The full Milestones investigation process is available on the GOSA website.*



# Answer Change Analysis Overview

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- Previously known as the Erasure Analysis until online assessments were added last year.
- Examines test items where an answer choice was changed and replaced with another answer choice.
  - Examines all answer changes and wrong-to-right answer changes
  - Includes all test items, including embedded field-test items
- For EOG, includes all spring Grades 3-8 EOG Assessments in English/Language Arts, Science, Social Studies, and Mathematics.
- For EOC, includes all winter 2016 and spring 2017 grades 7-12 assessments.

# EOG Answer Change Analysis Results

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## EOG Flagging Criteria (Grades 3-8)

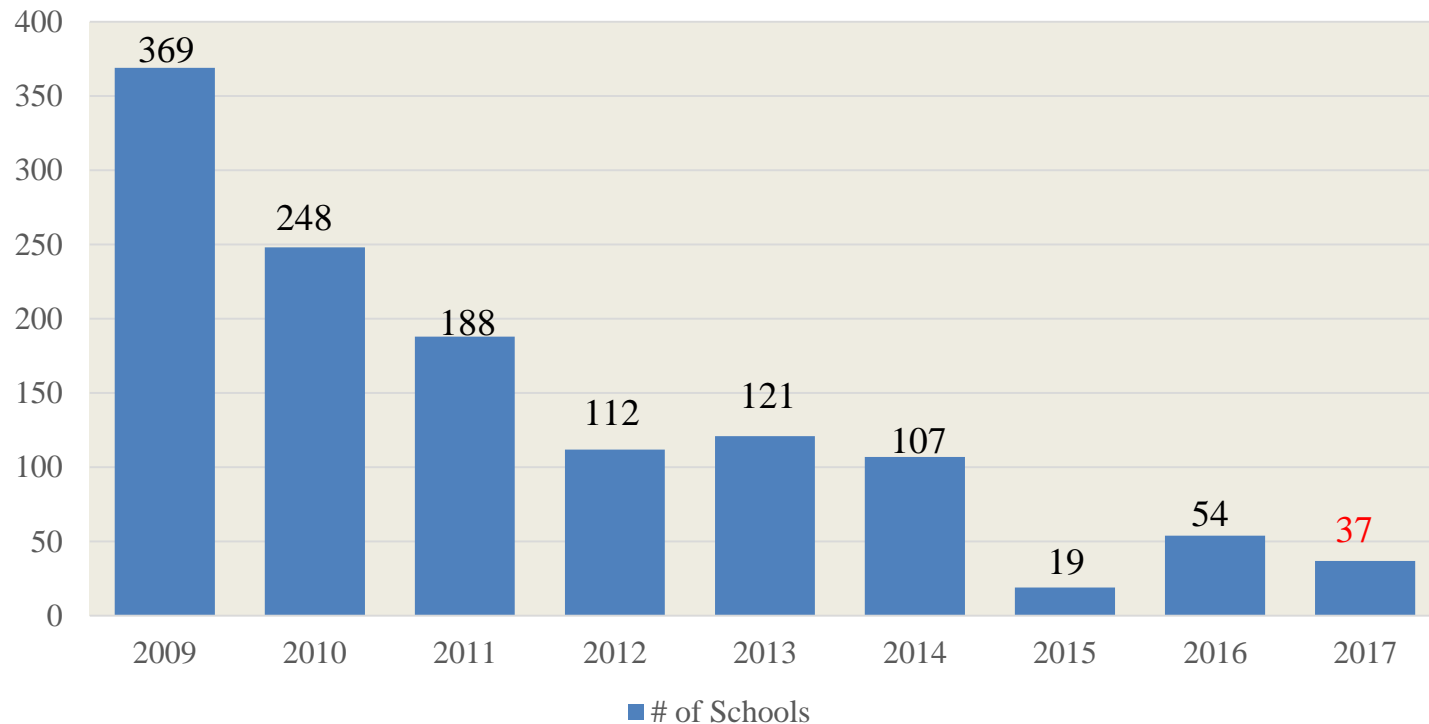
- Five percent or more of classrooms in a school are flagged at four standard deviations or greater, OR
- One classroom is flagged at seven standard deviations or greater.

## Summary Information

- 795,191 answer forms were analyzed for the spring 2017 administration.
  - 213,393 paper & pencil
  - 581,798 online
- 177 classrooms in 69 schools in 37 LEAs were flagged for a desktop audit.
- After desktop audit, 111 classrooms in 37 schools in 26 LEAs require further inquiry and may be monitored during spring 2018 testing.

# EOG Answer Change Analysis Results

Number of Elementary and Middle School Schools  
Requiring Further Inquiry



# EOG Answer Change Analysis Results

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of schools included in the analysis	1857	1889	1834	1833	1825	1811	1721	1811	1814
Number of schools requiring further inquiry	369	248	188	112	121	107	19	54	37
Number of schools monitored by State	97	51	52	34	40	42	19	17	TBD After inquiry

# EOC Answer Change Analysis Results

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## EOC Flagging Criteria (Grades 7-12)

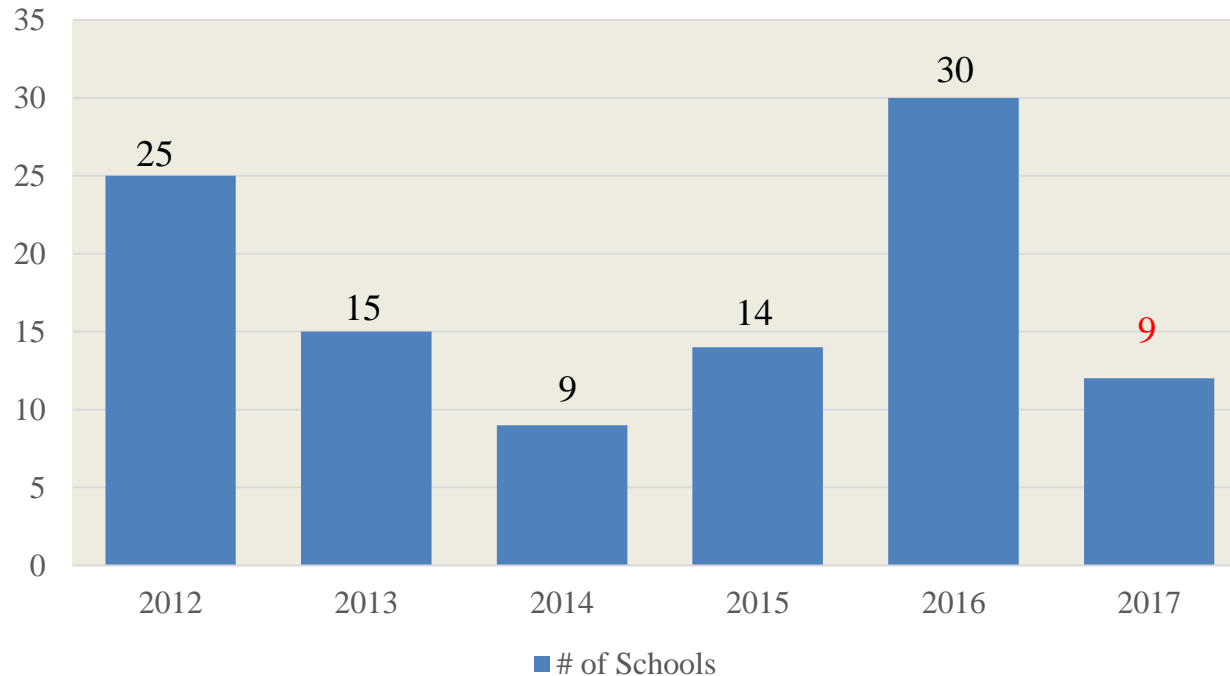
- Five percent or more of classrooms in a school are flagged at five standard deviations or greater, OR
- One classroom is flagged at seven standard deviations or greater.

## Summary Information

- 789,756 answer forms were analyzed for the spring 2017 administration.
- 30 classrooms in 12 schools in five LEAs were flagged for a desktop audit.
- After desktop audit, 25 classrooms in nine schools in four LEAs require further inquiry and will be monitored.

# EOC Answer Change Analysis Results

Number of Schools Requiring  
Further Inquiry



# EOC Erasure Analysis Results

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	2012	2013	2014	2015	2016	2017
Number of schools included in the analysis	593	451	430	416	866	891
Number of schools requiring further inquiry	25	15	9	14	30	9
Number of schools monitored by State	7	5	9	14	10	TBD after inquiry

# Unusual Response Pattern Analysis Overview

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This analysis identifies schools that have unexpected test score gains across years using a cohort of students as well as unexpected patterns in student answers.

- Unexpected patterns include (1) unlikely blocks of consecutive, identical answers, (2) highly correlated answers across tests, (3) correlation of responses across test items, and (4) cases where students miss easy items but answer difficult answers correctly.
- Requires a year-to-year cohort to examine test score gains, so it is more appropriate for EOG grade levels.
- Includes all Grades 4-8 EOG Assessments in ELA and Mathematics in 1,655 schools.
- Analyzes by test form (A or B), grade level, and subject area within each school.



# Unusual Response Pattern Analysis Overview

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## Unusual Response Pattern Flagging Criteria (Grades 3-8)\*

- Schools where two or more testing groups had test score gains and unusual response patterns that were in the 95<sup>th</sup> percentile, OR
- Schools where one testing group had test score gains and unusual response patterns that were in the 99<sup>th</sup> percentile.

Each testing group is the total number of students by grade level and subject area (ELA or mathematics) who took a certain test form (A or B) regardless of classroom assignment.

- For example, all students in a school who took the 4<sup>th</sup> grade mathematics Georgia Milestones Form A assessment are a testing group.

*\*For the second year of this analysis, GOSA did conduct a desktop audit, but determined that all schools flagged using criteria above will be required to submit an inquiry form.*

# Unusual Response Pattern Analysis Results

	2016	2017
Number of schools included in analysis	1,648	1,655
Number of schools requiring further inquiry	35	43
Number of schools monitored by State	26	TBD after inquiry

- 43 schools in 28 LEAs require further inquiry and may be monitored (2.6% of schools examined).
  - 19 schools in ELA
  - 31 schools in mathematics
- Three schools were flagged on both the answer change analysis and the unusual response pattern analysis.
  - These schools will be monitored during 2018 testing, regardless of inquiry form responses.

# Recommendations to the SBOE

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## GOSA will:

1. Share EOG/EOC data files with superintendents of LEAs that have schools requiring further inquiry to facilitate:
  - LEA internal investigation of reason(s) for flags, and
  - Submission of online inquiry form to GOSA with results of investigation and an explanation of testing protocols in place.
2. Require identified schools with outstanding inquiries to rotate teachers for the 2018 Georgia Milestones test administration (End of Grade Tests).
3. Assign state monitors to observe and inspect identified schools requiring further inquiry for the 2018 Georgia Milestones test administration as necessary (End of Course and End of Grade tests).
4. Conduct on-site audits as necessary.

# Questions?

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