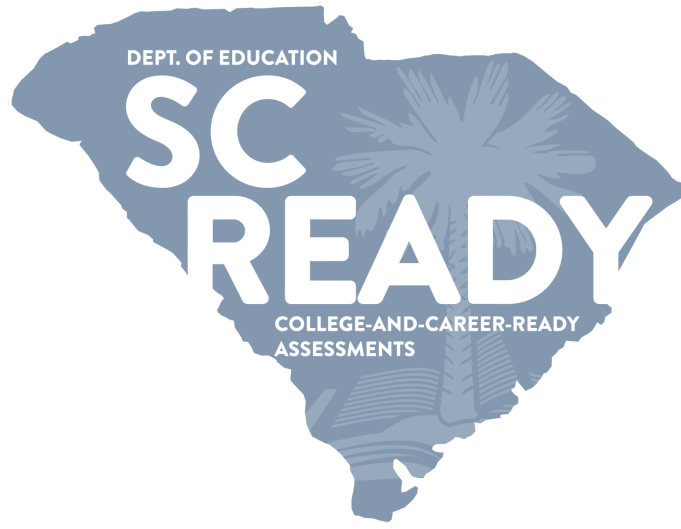




2026 Data Review Report

Statewide Instructional Recommendations

Math Grade 8

Office of Assessment and Standards

October 2026

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Introduction

The [South Carolina Department of Education](#) (SCDE) Office of Assessment and Standards (OAS) extends our deepest gratitude to the hard-working teachers across our state. We are especially thankful for the educators who dedicate their time to participate in our annual assessment meetings. Your collaboration is what makes these reports possible.

What is the Data Review Committee?

As part of our [Test Development Cycle](#) every year, the SCDE gathers educators from across South Carolina for virtual Data Review Meetings. This group of dedicated educators forms our *Data Review Committee*, a specialized team tasked with examining state-level, item-by-item test data to better understand student ability and identify where students are struggling with specific standards.

From Numbers to Strategies

For this report, the Committee focused on the Spring SC READY Math Grade 8 assessment, which measures the *2025 South Carolina College- and Career-Ready Mathematics Standards (2025 SC CCR Math Standards)*. While every standard is assessed on the SC READY Math Grade 8 assessment, this report selectively highlights key standards where statewide trends point to clear, actionable recommendations for the classroom.

The Committee looks closely at the *quantitative* data, how students across the entire state responded to test items. They use these numbers to produce a *qualitative* analysis. In other words, they look at the data to figure out *why* students are struggling, and then they offer actionable, instructional recommendations on how to improve student achievement on those topics.

A Redesigned Format

Based directly on feedback from teachers across the state, we have redesigned the Data Review Reports to be more useful for your daily practice. The reports are now organized by standards and indicators. Within each section, you will find:

- **Committee Observations:** What the data tells us about student understanding and misconceptions.
- **Instructional Recommendations:** Practical strategies to address learning gaps.

How to Use This Report

The goal of this report is to provide clear suggestions to improve instructional practice and inspire collaborative discussions at your school. Offered in a spirit of helpfulness and collaboration, these recommendations reflect broad, statewide trends. Because every

classroom is unique, we recognize that certain identified gaps or suggestions may not align with every individual school or district.

Get Involved and Learn More

The OAS provides numerous resources for districts, schools, and teachers to help clarify the standards, understand how our assessments align with them, and make the most of test data.

Our [Assessment Quick Links for Teachers Page](#) includes the following resources for mathematics educators:

- [Applications for Assessment Committees](#): Apply to Content Review Committees, Data Review Committees, and more.
- [Test Blueprints](#): Broadly outline the test construct in terms of content and rigor.
- [Assessment Specifications for Teachers](#): Guidance on how standards are assessed on the SC READY (distinct from how a concept is taught).
- [Data Review Reports](#): Access older reports from various content areas.
- [Item Type Descriptions](#): Breakdown of the item formats students encounter on SC READY.
- [Sample Items](#): Grade- and content-aligned items demonstrating SC READY formats.
- [Online Tools Training \(OTT\)](#): Allows students to practice interacting with sample items in the official testing environment.
- [Calculator Requirements](#): Guidelines for use and allowable calculators.
- [SC READY Math Reference Sheets](#): Reference sheets for SC READY Math Grades 4-8.

Our [Math Standards Page](#) includes:

- [Standards](#): The *2025 South Carolina College- and Career-Ready Mathematics Standards*
- [Instructional Resources](#): Support materials designed to help teachers instruct the *2025 SC CCR Math Standards*.
- [Professional Learning Opportunities](#): District-level professional learning menus and recordings of past webinars.

Interested in Statewide Assessment Data?

[State-level assessment data](#) is published each year on our website. You can explore the [2026 SC READY Test Scores](#) directly through our online interactive tools or download full data files from the right side of the page.

Want to make an impact?

If you are interested in joining an annual assessment committee, we invite you to [apply through our website!](#)

Statewide Trends for Math Grade 8

Strengths

Statewide performance trends suggest that Grade 8 students demonstrated relative strengths in data analysis, geometric reasoning, and the interpretation of linear relationships. Areas of strength include:

- creating and analyzing scatterplots to represent and interpret numerical data sets
- comparing and interpreting centers, spreads, and overlap of data to draw inferences from mathematical and real-world situations
- determining angle and side relationships to solve geometric problems
- reflecting geometric figures across the x-axis and y-axis
- translating among verbal descriptions and equations of linear functions

These positive trends suggest that many students were able to analyze and interpret data, reason about geometric relationships, and work with linear functions across representations.

Areas for Growth

Statewide performance trends suggest that Grade 8 students may need additional support with geometric reasoning, functional reasoning, and algebraic reasoning, particularly when tasks require justification, multiple representations, and higher levels of cognitive demand. Some areas include:

- finding the distance between two points on the coordinate plane using the Pythagorean Theorem
- determining whether a given set of side lengths forms a right triangle
- applying proportional reasoning to find missing side lengths in similar figures
- creating dilations using a given scale factor and describing the effects of dilations on geometric figures
- defining and interpreting linear functions in slope-intercept form
- determining whether a graph, table, mapping, or verbal description represents a linear function, nonlinear function, or not a function in non-routine situations
- describing and justifying whether a single-variable equation has one solution, no solution, or infinitely many solutions.

Strengthening conceptual understanding through visual models, multiple representations, mathematical discourse, and opportunities to justify reasoning may help students more effectively analyze relationships, solve geometric and algebraic problems, and communicate mathematical thinking in unfamiliar situations.

Committee Observations and Recommendations

The following instructional recommendations, identified by this year's Data Review Committee, provide actionable strategies to improve student achievement.

General Observations and Recommendations

Vocabulary:

- Use familiar language as an entry point but consistently transition students to precise mathematical vocabulary.
- Provide opportunities for students to apply vocabulary in context through sorting, matching, discussion, and problem-solving tasks that require interpretation and application rather than memorization of definitions.
- Consider collaborating with your Professional Learning Communities (PLCs) to determine whether formative assessment of vocabulary would support student learning.

Connections and Representations:

- Provide regular opportunities for students to interpret, analyze, and create mathematical representations, including graphs, data displays, and contextual models.
- Connect new learning to prior knowledge and authentic situations to help students develop a deeper understanding of mathematical concepts, procedures, and representations.
- Connect mathematical concepts to real-world situations and prior learning by linking familiar concepts, such as input-output relationships, to independent and dependent variables in math and science. Use sentence stems such as “_____ depends on _____ because _____” to reinforce the relationship between variables.
- Engage students in mathematical discourse, error analysis, and justification of reasoning.
- Work with rational numbers throughout the entire year.

Mathematical Tools:

- Using number lines to model mathematical relationships emerged as a common instructional theme and can support students' understanding of rational and irrational numbers.
- Use virtual manipulatives to help support spatial reasoning in Geometry and Measurement.
- Ensure that students practice with and without a calculator.

The following observations and recommendations for the selected indicators in this report are organized by the reporting categories identified in the [SC READY Math Grade 8 Test Blueprint 2026-27](#): **Data, Probability, and Statistical Reasoning, Measurement, Geometry, and Spatial Reasoning, Numerical Reasoning, and Patterns, Algebra, and Functional Reasoning.**

Data, Probability, and Statistical Reasoning

8.DPSR.2.2

Observation: A common misconception was that students did not recognize multiple favorable outcomes within a probability situation. Students may need additional experience organizing information from tables and identifying favorable outcomes before calculating probability.

Instructional Recommendations:

- Create simulations and real-world probability experiments for students to collect and analyze data.
- Teach students to annotate and highlight important information, including favorable outcomes.
- Provide opportunities for students to create and organize information in their own tables or charts using tally marks.
- Reinforce the relationship between probability and favorable outcomes.

Measurement, Geometry, and Spatial Reasoning

8.MGSR.1.2

Observation: Students seem to be able to use the Pythagorean Theorem to find a missing side length (diagonal line) on a coordinate plane but did not use that result to determine the additional measurement requested in the problem.

Instructional Recommendations:

- Use a Three-Read strategy to help students identify what the problem is asking.
- Encourage students to use the Pythagorean Theorem when appropriate and then revisit the context of the problem before selecting a solution.
- Provide opportunities for students to explain how calculated side lengths could connect to finding other measurements.

8.MGSR.1.4

Observation: Students may benefit from additional support explaining and justifying the reasoning behind the Pythagorean Theorem, particularly when asked to connect the theorem to geometric relationships rather than simply apply the formula.

Instructional Recommendations:

- Provide opportunities for students to explore and justify the Pythagorean Theorem using visual models, such as squares constructed on the sides of right triangles.
- Encourage students to explain their reasoning orally and in writing when applying the Pythagorean Theorem.
- Have students compare examples and non-examples of right triangles to determine when the Pythagorean Theorem can be applied and justify their conclusions.
- Use diagrams, area models, and mathematical discourse to help students connect the theorem to the relationships among the sides of a right triangle.

8.MGSR.2.5

Observation: Some students may have had difficulty identifying corresponding sides and angles when working with similar and congruent figures. The committee observed that students were not consistently using similarity and congruency statements to support their reasoning.

Instructional Recommendations:

- Use tracing paper to identify corresponding sides and angles and verify relationships. Color-code those corresponding sides and angles to strengthen visual connections.
- Encourage students to check for accuracy using similarity statements in addition to visual cues. Students can align corresponding letters to identify matching vertices and angle relationships.
- Have students write matching vertex names side by side when comparing figures.
- Use anchor charts to reinforce connections among corresponding sides, angles, and similarity statements.
- Encourage students to justify comparisons using formal similarity and congruency notation.

8.MGSR.3.6

Observation: A common misconception was that students did not consistently connect the value of a scale factor to whether a dilation produces an enlargement or a reduction. The committee also observed that students may need additional fluency when working with fractional scale factors.

Instructional Recommendations:

- Provide opportunities for students to multiply integers and rational numbers by fractional scale factors.
- Use real-world examples to distinguish between enlargements and reductions.
- Facilitate number sense conversations about the effect of multiplying by values greater than 1, less than 1, and equal to 1.
- Use tables of points to determine how a scale factor affects coordinates.
- Reinforce vocabulary such as dilation, scale factor, vertex, enlargement, and reduction.
- Use tracing paper or translucent sticky notes to model transformations.
- Emphasize identifying whether a scale factor represents an enlargement or a reduction and require students to justify their reasoning.

Numerical Reasoning

8.NR.1.1

Observation #1: The committee observed that students may not consistently recognize patterns in decimal representations of fractions. Students appeared to benefit from opportunities to discover and explain patterns among terminating and repeating decimals.

Instructional Recommendations:

- Engage students in fraction conversion challenges that require identifying patterns without a calculator.
- Create tables using fractions with common denominators to explore repeating and terminating decimals.
- Discuss patterns associated with denominators such as 9, 99, and 999.
- Encourage students to explain and justify observed patterns.
- Reinforce long division as a strategy when decimal representations are unknown.

Observation #2: A common misconception was that students did not consistently use or recognize precise mathematical vocabulary related to fractions and decimal representations.

Instructional Recommendations:

- Consistently use terms such as numerator and denominator rather than informal language.
- Reinforce that a fraction bar represents division.
- Incorporate vocabulary within interactive notebooks and daily instruction.
- Connect mathematical language to conversion procedures and problem solving.
- Encourage students to explain reasoning using precise terminology.

8.NR.2.1

Observation: The committee observed that students may need additional support estimating the values of irrational numbers and locating them on a number line. Students did not always connect perfect squares to the placement of non-perfect square roots.

Instructional Recommendations:

- Review perfect squares and their square roots regularly.
- Use horizontal and vertical number lines to estimate irrational values.
- Have students create their own square root number lines for reference and practice.
- Develop approximation strategies for locating irrational numbers between consecutive integers.
- Discuss the meaning of decimal expansion and how it relates to irrational numbers.
- Use number lines to visually represent the location of square roots of non-perfect squares.

8.NR.2.2

Observation: A common misconception was that students did not consistently distinguish between rational and irrational numbers. The committee observed that students may need stronger understanding of the characteristics of terminating and repeating decimals.

Instructional Recommendations:

- Review the definitions of rational and irrational numbers frequently.
- Emphasize the characteristics of terminating and repeating decimals.
- Use fraction conversion challenges to identify patterns and classify numbers.
- Create opportunities for students to explain why a number is rational or irrational.
- Utilize visual organizers and classification activities to reinforce vocabulary and concepts.

Patterns, Algebra, and Functional Reasoning

8.PAFR.1.1

Observation: The committee observed that students may not consistently recognize that linear relationships have a constant rate of change and that equations containing exponents on variables are not linear.

Instructional Recommendations:

- Use Desmos to explore and compare linear and non-linear relationships.
- Create tables of values and determine whether the relationship is linear.
- Reinforce vocabulary associated with linear equations and functions.
- Encourage students to substitute values and analyze patterns.
- Compare equations with and without exponents to highlight characteristics of linear relationships.

8.PAFR.1.3

Observation: A common misconception was that students did not consistently identify functions across multiple representations. Students may have had difficulty recognizing that each input in a function is paired with only one output.

Instructional Recommendations:

- Use mapping diagrams, ordered pairs, tables, and graphs to identify functions.
- Connect functions to real-world situations and determine whether relationships are functions.
- Emphasize that each x-value can be associated with only one y-value.
- Create and label input-output tables to reinforce function relationships.
- Discuss how duplicate x-values with different outputs affect whether a relation is a function.

8.PAFR.1.5

Observation: The committee observed that students may not consistently distinguish between relationships that are functions and those that are not functions.

Instructional Recommendations:

- Use real-world situations to determine whether a relationship represents a function.
- Compare and contrast examples and non-examples of functions.
- Reinforce vocabulary associated with functions through multiple representations.
- Have students justify why a relation is or is not a function.
- Use tables, graphs, and mapping diagrams to support understanding.

8.PAFR.2.2

Observation: A common misconception was that students did not consistently recognize the difference among equations with one solution, no solution, and infinitely many solutions after simplifying. Students may have focused on procedures without interpreting the resulting statements.

Instructional Recommendations:

- Explicitly teach the meanings of one solution, no solution, and infinitely many solutions.
- Have students simplify equations completely and determine whether the result is a true or false statement.
- Use graphic organizers comparing the three solution types.
- Utilize Desmos to graph equations and discuss what students notice about the relationships.
- Encourage students to identify key indicators that signal each solution type.
- Reinforce vocabulary through examples, non-examples, and visual representations.

8.PAFR.2.5

Observation: The committee observed that students may benefit from additional practice applying algebraic reasoning to solve equations and interpret solutions within context.

Instructional Recommendations:

- Provide opportunities for students to model and solve real-world equations.
- Encourage multiple solution strategies and discussion of reasoning.
- Connect equations to tables, graphs, and verbal descriptions.
- Reinforce algebraic vocabulary and symbolic reasoning.

8.PAFR.3.1

Observation: A common misconception was that students did not consistently connect square roots and cube roots to perfect squares, perfect cubes, and their corresponding exponential forms. The committee observed that students may need additional conceptual understanding of roots as inverse operations.

Instructional Recommendation(s):

- Use manipulatives such as unit cubes to build perfect squares and perfect cubes.
- Reinforce vocabulary related to roots, exponents, squares, and cubes.
- Incorporate prime factorization and factor trees when finding roots.
- Use square and cube charts to develop number sense.
- Emphasize that square roots and cube roots are inverse operations of squaring and cubing.
- Connect exponential form to expanded form when exploring roots.

8.PAFR.3.3

Observation: The committee observed that students may have applied exponent rules procedurally without fully understanding why the rules work. Students appeared to benefit from opportunities to explore patterns before formalizing exponent laws.

Instructional Recommendation(s):

- Have students write exponents in expanded form before introducing exponent properties.
- Encourage students to discover patterns and make conjectures about exponent rules.
- Use visual and numerical examples to build conceptual understanding.
- Reinforce connections among base, exponent, and expanded form.
- Provide opportunities for students to justify why exponent rules work rather than simply applying them.