Fact Sheet for Mathematics CSAP – Grades 3 - 10

Construction Information

Grade 3:
- 40 items; Total test score points = 50
- 32 multiple choice, 8 constructed response
  - Multiple choice score points = 32 or 64% of total
  - Constructed response score points = 18 or 36% of total
    - 6 are short constructed response items worth 2 score points
    - 2 are medium constructed response items worth 3 score points

Grades 4 & 5:
- 69 items; Total test score points = 96
- 54 multiple choice, 15 constructed response
  - Multiple choice score points = 54 or 56% of total
  - Constructed response score points = 42 or 44% of total

Grades 6 – 10:
- 60 items; Total test score points = 87
- 45 multiple choice, 15 constructed response
  - Multiple choice score points = 45 or 52% of total
  - Constructed response score points = 42 or 48% of total

Of the constructed response items for Grades 4 - 10:
- 6 are short constructed response items worth 2 score points
- 6 are medium constructed response items worth 3 score points
- 3 are medium constructed response items worth 4 score points

*There are no extended constructed response items for mathematics. These are only appropriate for the Writing/Escritura CSAP.

Additional Information:

- Tests are designed to be given in three 65-minute sessions. However, Grade 3 only has two sessions.
- Each session has a similar composition of item types.
- In Sessions 1 and 2, the use of calculators is not allowed.
- In Session 3, the use of calculators is allowed only at Grades 9 and 10.
Fact Sheet for Mathematics CSAP – Grades 3 - 10

Weighting of Standards by Grade Level for Mathematics CSAP

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grade 9</th>
<th>Grade 10</th>
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</tbody>
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Test Scoring

- Multiple choice items are machine scored.
- Constructed response items are scored by readers hired and trained by the test contractor under specific guidelines from CDE personnel and Colorado teachers.
- Performance category cut scores are set using the Bookmarking Process and a Modified Bookmarking Process.

Associated materials available on the CDE website ([www.cde.state.co.us](http://www.cde.state.co.us))

- Assessment Frameworks
- CSAP Item Maps
- CSAP Performance Level Scale Ranges
- Math Proficiency Levels
- CSAP Technical Report
- Released Items
- Math Demonstration Packet
- Math Scoring Rubrics
- Data Interpretation Guidelines
- Guides to Test Interpretation
- Test results at school, district and state levels
- Student work from released Constructed Response Items (Anchor Papers)
Sub-Content Areas Reported Out on the Student Performance Report for Mathematics

<table>
<thead>
<tr>
<th>Grade 3</th>
<th>Grade 4</th>
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<tbody>
<tr>
<td><em>No Sub-Content Areas Reported</em></td>
<td>Number &amp; Operation Sense</td>
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<td>Number Sense</td>
<td>Linear Pattern Representation</td>
<td>Multiple Representations of Linear/Nonlinear Functions</td>
<td>Multiple Representation of Function</td>
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<tr>
<td>Patterns</td>
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<td>Patterns</td>
<td>Geometry</td>
<td>Area and Perimeter Relationships</td>
<td>Proportional Thinking</td>
<td>Geometry</td>
<td>Probability &amp; Counting Techniques</td>
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<td>Data Displays</td>
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Sub-Content Area Descriptions

4th Grade:
**Number and Operation Sense:** The student demonstrates meanings for whole numbers, commonly-used fractions, decimals as money and the four basic arithmetic operations including the use of manipulatives, drawings, and decomposing and composing numbers.

**Patterns:** The student reproduces, extends, creates and describes geometric and numeric patterns as problem-solving tools.

**Measurement:** The student demonstrates knowledge of time, and understands the structure and use of US customary and metric measurement tools and units.

5th Grade:
**Number and Operation Sense:** The student demonstrates the meaning of whole numbers, commonly used fractions, decimals and the four basic arithmetic operations through the use of drawings, decomposing and composing numbers, and identify factors, multiples and prime/composite numbers.

**Patterns:** The student represents, describes, and analyzes geometric and numeric patterns using tables, graphs, and verbal rules as problem solving tools.

**Data Displays:** The student organizes constructs, and interprets displays of data including tables, charts, pictographs, line plots, bar graphs, and chooses the correct graph from possible graph representations of a given scenario.
Sub-Content Area Descriptions (contd.)

**6th Grade**
**Number and Operation Sense:** The student demonstrates an understanding of relationships among benchmark fractions, decimals, and percents and justifies the reasoning used. The student adds and subtracts fractions and decimals in problem solving situations.

**Patterns:** The student represents, describes and analyzes geometric and numeric patterns using tables, words, concrete objects and pictures in problem solving situations.

**Geometry:** The student will reason informally about the properties of two-dimensional figures and solve problems involving area and perimeter.

**7th Grade**
**Number Sense:** The student will demonstrate understanding of the concept of equivalency as related to fractions, decimals, and percents.

**Area and Perimeter Relationships:** The student demonstrates understanding of perimeter, circumference, and area, and recognizes the relationships between them.

**8th Grade**
**Linear Pattern Representation:** The student represents, describes, and analyzes linear patterns using tables, graphs, verbal rules, and standard algebraic notation and solves simple linear equations in problem-solving situations using a variety of methods.

**Proportional Thinking:** The student applies the concepts of ratio, proportion, scale factor, and similarity including using the relationships among fractions, decimals, and percents in problem solving situations.

**Geometry:** The student describes, analyzes and reasons informally about properties of two and three-dimensional figures to solve problems.

**9th Grade**
**Multiple Representations of Linear and Non-Linear Function:** The student represents functional relationships which model real world phenomena using written explanations, tables, equations, and graphs, describes the connections among these representations and converts from one representation to another.

**Proportional Thinking:** The student applies the concepts of ratio, proportion, scale factor, and similarity including using the relationships among fractions, decimals, and percents in problem-solving situations.
Fact Sheet for Mathematics CSAP – Grades 3 - 10

Sub-Content Area Descriptions (contd.)

10th Grade
Multiple Representation of Function: The student represents functional relationships which model real world phenomena using written explanations, tables, equations, and graphs, describes line connections among these representations and converts from one representation to another.

Probability and Counting Techniques: The student applies organized counting techniques to determine a sample space and theoretical probability of an identified event which includes differentiating between independent and dependent events and using area models to determine probability.

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