Fact Sheet for Mathematics TCAP – 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 TCAP.

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.

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Weighting of Standards by Grade Level for Mathematics TCAP

	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Standard	%ScrPts	%ScrPts	%ScrPts	%ScrPts	%ScrPts	%ScrPts	%ScrPts	%ScrPts
1	20	20	20	20				
6	20	20	20	15	30	25	20	20
2		15	20	20	20	25	30	30
3	25	15	20	20	20	20	25	25
4 5	35	30	20	25	30	30	25	25

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)

- Assessment Frameworks

- TCAP Item Maps (Available after Spring 2012 administration)

- TCAP Performance Level Scale Ranges

- Math Proficiency Levels

- TCAP Technical Report (Available Fall 2012)

- 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)

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Sub-Content Areas Reported Out on the Student Performance Report for Mathematics

Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
*No Sub-Content Areas Reported	Number & Operation Sense	Number & Operation Sense	Number & Operation Sense	Number Sense	Linear Pattern Representation	Multiple Representations of Linear/Nonlinear Functions	Multiple Representation of Function
	Patterns	Patterns	Patterns	Area and Perimeter Relationships	Proportional Thinking		Probability & Counting Techniques
	Measurement	Data Displays	Geometry		Geometry	Proportional Thinking	

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.

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Sub-Content Area Descriptions (contd.)

6<u>th</u> 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.

7<u>th</u> 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.

8<u>th</u> 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.

9<u>th</u> 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.

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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.

Sub-Content Area #	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
					Sub-Content Area			
1	Not applicable	Number & Operation Sense	Number & Operation Sense	Number & Operation Sense	Number Sense	Linear Pattern Representation	Multiple Representations of Linear/Nonlinear Functions	Multiple Representation of Function
2	Not applicable	Patterns	Patterns	Patterns	Area & Perimeter Relationships	Proportional Thinking	Proportional Thinking	Probability & Counting Techniques
3	Not applicable	Measurement	Data Displays	Geometry		Geometry		
4	Not applicable							
5	Not applicable							

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