

CONTENT STRANDS

SUMMARY OF BENCHMARKS ASSESSED ON FCAT - GRADE 3

A122: relative size of numbers (pp 41-42)
A124: equivalent forms of numbers (p 49), includes A121 (names of numbers),
A123 (concrete and symbolic representations of numbers)
A221: place value concepts (p 55)
A321: effects of operations on numbers (p 60)
A322: appropriate operation to solve a specific problem (p 64)
A323: appropriate methods of computing (p 68)
A421: estimation strategies (p 72) - includes B321 (estimates of measurements)
A521: basic number theory concepts including primes, composites, factors, and multiples (p 78)

Number Sense,
Concepts, and
Operations

B122: real-world problems involving length, weight, perimeter, area, capacity, volume,
time, temperature, and angles (pp 82-83)
B221: direct and indirect measures (p 90)
B222: appropriate standard and nonstandard units of measurement (p 96) - includes B421 (which units to use with
answers to real-world problems)
B422: appropriate instruments and technology to measure in real-world situations (pp 101-102)

Measurement

C121: appropriate geometric vocabulary to draw and describe 2- and 3-D shapes (p 108)
C221: spatial relationships, symmetry, reflections, congruency, and similarity (p 113), includes B122, C121, C321, (see
chart)
C222: flips, slides, and turns (p 119)
C321: strategies, properties, and formulas to solve real-world problems involving
2- and 3-D shapes (pp 125-126), includes C221 (see chart)
C322: positive ordered pairs in a rectangular coordinate system (pp 134-135)

Geometry and
Spatial Sense

D121: patterns and relationships using models (pp 142-143)
D221: represent a given simple problem situation (pp 156-157), includes D222 (see chart)
D222: informal methods to solve equations and inequalities (p 163), includes D221 (see chart)

Algebraic Thinking

E121: generate, collect, organize, display, and analyze data to solve problems (pp 170-171) - includes E123
(analyzes real world data)
E122: range, mean, median, and mode (p 183) - includes E123 (see E121)
E221: display possible outcomes using models (p 189)
E222: predict the likelihood of simple events occurring (p 194)

Data Analysis and
Probability

All FCAT math items at Grade 3 are tested in multiple choice format
pp - Test Item and Performance Task Specifications pages

SUMMARY OF BENCHMARKS ASSESSED ON FCAT - GRADE 4

A122: relative size of numbers (pp 43-44)
A124: equivalent forms of numbers (pp 50-51), includes A121 (names of numbers),
A123 (concrete and symbolic representations of numbers)
A221: place value concepts (p 56)
A321: effects of operations on numbers (p 61)
A322: appropriate operation to solve a specific problem (p 65)
A323: appropriate methods of computing (p 69)
A421: estimation strategies (p 73) - includes B321 (estimates of measurements)
A521: basic number theory concepts including primes, composites, factors, and multiples (p 79)

Number Sense,
Concepts, and
Operations

B122: real-world problems involving length, weight, perimeter, area, capacity, volume,
time, temperature, and angles (pp 84-85)
B221: direct and indirect measures (p 91)
B222: appropriate standard and nonstandard units of measurement (pp 97-98) - includes B421 (which units to use with
answers to real-world problems)
B422: appropriate instruments and technology to measure in real-world situations (pp 103-104)

Measurement

C121: appropriate geometric vocabulary to draw and describe 2- and 3-D shapes (p 109)
C221: spatial relationships, symmetry, reflections, congruency, and similarity (p 114), includes B122, C121, C321, (see
chart)
C222: flips, slides, and turns (pp 120-121)
C321: strategies, properties, and formulas to solve real-world problems involving
2- and 3-D shapes (pp 127-128), includes C221 (see chart)
C322: positive ordered pairs in a rectangular coordinate system (p 136)

Geometry and
Spatial Sense

D121: patterns and relationships using models (pp 144-145)
D221: represent a given simple problem situation (p 158), includes D222 (see chart)
D222: informal methods to solve equations and inequalities (pp 164-165), includes D221 (see chart)

Algebraic Thinking

E121: generate, collect, organize, display, and analyze data to solve problems (pp 172-173),
includes E123 (analyzes real world data)
E122: range, mean, median, and mode (pp 184-185) - includes E123 (see E121)
E221: display possible outcomes using models (p 190)
E222: predict the likelihood of simple events occurring (p 195)

Data Analysis and
Probability

All FCAT math items at Grade 4 are tested in multiple choice format
pp - Test Item and Performance Task Specifications pages

SUMMARY OF BENCHMARKS ASSESSED ON FCAT - GRADE 5

A122: relative size of numbers (MC, GR) pp 45-47
A124: equivalent forms of numbers (MC, GR) pp 52-53, includes A121 (names of numbers),
A123 (concrete and symbolic representations of numbers)
A221: place value concepts (GR) pp 57-58
A321: effects of operations on numbers (MC) p 62
A322: appropriate operation to solve a specific problem (MC) p 66
A323: appropriate methods of computing (MC, GR) p 70
A421: estimation strategies (SR) pp 74-76, includes B321 (estimates of measurements)
A521: basic number theory concepts including primes, composites, factors, and multiples (MC) p 80

Number Sense,
Concepts, and
Operations

B122: real-world problems involving length, weight, perimeter, area, capacity, volume,
time, temperature, and angles (MC, GR) pp 86-88
B221: direct and indirect measures (MC, GR) pp 92-94
B222: appropriate standard and nonstandard units of measurement (MC) p 99, includes B421 (which units to use with
answers to real-world problems)
B422: appropriate instruments and technology to measure in real-world situations (MC) pp 105-106

Measurement

C121: appropriate geometric vocabulary to draw and describe 2- and 3-D shapes (SR) pp 110-111
C221: spatial relationships, symmetry, reflections, congruency, and similarity (MC, ER) pp 115-117,
includes B122, C121, C321, (see chart)
C222: flips, slides, and turns (MC) pp 122-123
C321: strategies, properties, and formulas to solve real-world problems involving
2- and 3-D shapes (MC, SR) pp 129-132, includes C221 (see chart)
C322: positive ordered pairs in a rectangular coordinate system (MC, SR) pp 137-140

Geometry and
Spatial Sense

D121: patterns and relationships using models (MC, GR) pp 146-148
D122: generalize pattern, relation, or function to explain cause-and-effect (SR) pp 152-154,
includes D121 (see chart)
D221: represent a given simple problem situation (MC, SR) pp 159-161, includes D222 (see chart)
D222: informal methods to solve equations and inequalities (MC, GR) pp 166-168, includes D221 (see chart)

Algebraic Thinking

E121: generate, collect, organize, display, and analyze data to solve problems (MC, GR, ER) pp 174-181,
includes E123 (analyzes real world data)
E122: range, mean, median, and mode (MC, GR) pp 186-187, includes E123 (see E121)
E221: display possible outcomes using models (SR) pp 191-192
E222: predict the likelihood of simple events occurring (MC) p 196
E321: collect, organize, analyze, and display data (MC, SR) pp 200-203, includes E322 (uses data to make predictions)

Data Analysis and
Probability

MC - multiple choice, GR - gridded response, SR - short response, ER - extended response
pp - Test Item and Performance Task Specifications pages

SUMMARY OF BENCHMARKS ASSESSED ON FCAT - GRADE 6

A132: relative size of numbers (MC) p 42
A134: equivalent forms of numbers (MC, GR) pp 47-48, includes A131 (verbal and word names for numbers), A133 (concrete and symbolic representations of numbers)
A231: exponential and scientific notation (MC, GR) pp 54-55
A331: effects of operations on numbers (MC) p 61
A332: order of operations (MC, GR) pp 65-66
A333: appropriate methods of computing (MC, GR) pp 72-73
A431: estimation strategies (MC) p 79, includes A421 (reasonableness of results), B231 (direct and indirect measurement), B331 (estimates of measurements)

Number Sense,
Concepts, and
Operations

B131: derive formulas for perimeter, area, surface area, circumference, or volume (MC, GR) pp 84-86, includes B122 (grades 3-5, real world measurement problems), B231 (see A431)
B132: derive formulas for rate, distance, time, angle measures (MC, GR) p 96, includes B122 (see B131), B231 (see A431)
B133: impact of change in one dimension on other measurements (MC, GR) pp 103-105, includes C231 (see chart)
B134: real-world problems involving scale drawings (MC, GR) pp 113-115, includes B231 (see A431)
B232: real-world problems involving conversions within the metric or customary system (MC, GR) pp 122-123

Measurement

C131: relationships and properties among regular and irregular shapes (MC, GR) pp 129-131, includes C121 (grades 3-5, draw or describe 2- and 3-dimensional shapes)
C231: symmetry, reflections, congruency, similarity, perpendicularity, parallelism, and transformations (MC) pp 139-140, includes B133 (see chart), C121 (see C131), C131 (see chart), C331 (see chart)
C331: real-world and mathematical problems involving geometric properties and relationships (MC) pp 153-154, includes C231 (see chart)
C332: rectangular coordinate system and simple properties of lines (MC) pp 163-164

Geometry and
Spatial Sense

D131: patterns, relationships, and functions (MC, GR) pp 176-178, includes A531 (number sequences)
D132: cause-and-effect relationships (MC, GR) pp 185-186, includes A531 (see D131)
D231: algebraic expressions, equations, and inequalities (MC) p 197, includes A133 (see A134)
D232: linear equations and inequalities (MC, GR) pp 203-204

Algebraic Thinking

E131: different ways of presenting data leading to different interpretations (MC, GR) pp 210-212, includes E133 (analyze and organize data in a quality display)
E132: measures of central tendency and range (MC, GR) pp 225-227, includes E133 (see E131)
E231: experimental results compared with mathematical expectations (MC) pp 235-236
E232: odds for and odds against a given situation (MC) p 243, includes E222 (grades 3-5, predicts likelihood of simple events occurring)
E331: inferences and conclusions based on statistics (MC) pp 248-249, includes E332 (common uses and misuses of statistics)

Data Analysis and
Probability

All FCAT math items at Grade 6 are tested in multiple choice (MC) or gridded response (GR) format
pp - Test Item and Performance Task Specifications pages

SUMMARY OF BENCHMARKS ASSESSED ON FCAT - GRADE 7

A132: relative size of numbers (MC) p 43
A134: equivalent forms of numbers (MC, GR) pp 49-50, includes A131 (verbal and word names for numbers),
A133 (concrete and symbolic representations of numbers)
A231: exponential and scientific notation (MC, GR) pp 56-57
A331: effects of operations on numbers (MC) p 62
A332: order of operations (MC, GR) pp 67-68
A333: appropriate methods of computing (MC, GR) pp 74-75
A431: estimation strategies (MC) p 80, includes A421 (reasonableness of results), B231 (direct and indirect
measurement), B331 (estimates of measurements)

Number Sense,
Concepts, and
Operations

B131: derive formulas for perimeter, area, surface area, circumference, or volume (MC, GR) pp 87-89,
includes B122 (grades 3-5, real world measurement problems), B231 (see A431)
B132: derive formulas for rate, distance, time, angle measures (MC, GR) pp 97-99, includes B122 (see B131), B231 (see
A431)
B133: impact of change in one dimension on other measurements (MC, GR) pp 106-108, includes C231 (see chart)
B134: real-world problems involving scale drawings (MC, GR) pp 116-117, includes B231 (see A431)
B232: real-world problems involving conversions within the metric or customary system (MC, GR) pp 124-125

Measurement

C131: relationships and properties among regular and irregular shapes (MC, GR) pp 132-134,
includes C121 (grades 3-5, draw or describe 2- and 3-dimensional shapes)
C231: symmetry, reflections, congruency, similarity, perpendicularity, parallelism, and
transformations (MC) p 141, includes B133 (see chart), C121 (see C131), C131 (see chart), C331 (see chart)
C232: patterns involving tessellations (MC) p 150
C331: real-world and mathematical problems involving geometric properties and relationships (MC) pp 155-156,
includes C231 (see chart)
C332: rectangular coordinate system and simple properties of lines (MC) pp 165-166

Geometry and
Spatial Sense

D131: patterns, relationships, and functions (MC, GR) pp 179-181, includes A531 (number sequences)
D132: cause-and-effect relationships (MC, GR) pp 187-189, includes A531 (see D131)
D231: algebraic expressions, equations, and inequalities (MC) p 198, includes A133 (see A134)
D232: linear equations and inequalities (MC, GR) pp 205-206

Algebraic Thinking

E131: different ways of presenting data leading to different interpretations (MC, GR) pp 213-215,
includes E133 (analyze and organize data in a quality display)
E132: measures of central tendency and range (MC, GR) pp 228-230, includes E133 (see E131)
E231: experimental results compared with mathematical expectations (MC) pp 237-238
E232: odds for and odds against a given situation (MC) p 244, includes E222 (grades 3-5, predicts likelihood of simple
events occurring)
E331: inferences and conclusions based on statistics (MC) p 250, includes E332 (common uses and misuses of
statistics)

Data Analysis and
Probability

All FCAT math items at Grade 7 are tested in multiple choice (MC) or gridded response (GR) format
pp - Test Item and Performance Task Specifications pages

SUMMARY OF BENCHMARKS ASSESSED ON FCAT - GRADE 8

A132: relative size of numbers (MC) pp 44-45
A134: equivalent forms of numbers (MC, GR) pp 51-52, includes A131 (verbal and word names for numbers), A133 (concrete and symbolic representations of numbers)
A231: exponential and scientific notation (MC, GR) pp 58-59
A331: effects of operations on numbers (MC) p 63
A332: order of operations (MC, GR) pp 69-70
A333: appropriate methods of computing (MC, GR) pp 76-77
A431: estimation strategies (SR) pp 81-82, includes A421 (reasonableness of results), B231 (direct and indirect measurement), B331 (estimates of measurements)

Number Sense,
Concepts, and
Operations

B131: derive formulas for perimeter, area, surface area, circumference, or volume (GR, SR) pp 90-94, includes B122 (grades 3-5, real world measurement problems), B231 (see A431)
B132: derive formulas for rate, distance, time, angle measures (GR, SR) p 100-101, includes B122 (see B131), B231 (see A431)
B133: impact of change in one dimension on other measurements (MC, GR) pp 109-111, includes C231 (see chart)
B134: real-world problems involving scale drawings (MC, GR) pp 118-120, includes B231 (see A431)
B232: real-world problems involving conversions within the metric or customary system (MC, GR) pp 126-127

Measurement

C131: relationships and properties among regular and irregular shapes (MC, GR) pp 135-137, includes C121 (grades 3-5, draw or describe 2- and 3-dimensional shapes)
C231: symmetry, reflections, congruency, similarity, perpendicularity, parallelism, and transformations (MC, GR, ER) pp 142-147, includes B133 (see chart), C121 (see C131), C131 (see chart), C331 (see chart)
C232: patterns involving tessellations (MC) p 151
C331: real-world and mathematical problems involving geometric properties and relationships (MC, SR) pp 157-161, includes C231 (see chart)
C332: rectangular coordinate system and simple properties of lines (MC, SR) pp 167-174

Geometry and
Spatial Sense

D131: patterns, relationships, and functions (MC, GR) pp 182-183, includes A531 (number sequences)
D132: cause-and-effect relationships (MC, GR, SR) pp 190-195, includes A531 (see D131)
D231: algebraic expressions, equations, and inequalities (MC, SR) p 199-201, includes A133 (see A134)
D232: linear equations and inequalities (MC, GR) pp 207-208

Algebraic
Thinking

E131: different ways of presenting data leading to different interpretations (MC, GR, ER) pp 216-223, includes E133 (analyze and organize data in a quality display)
E132: measures of central tendency and range (MC, GR) pp 231-233, includes E133 (see E131)
E231: experimental results compared with mathematical expectations (SR) pp 239-241
E232: odds for and odds against a given situation (MC, GR) p 245-246, includes E222 (grades 3-5, predicts likelihood of simple events occurring)
E331: inferences and conclusions based on statistics (MC, SR) pp 251-253, includes E332 (common uses and misuses of statistics)

Data Analysis and
Probability

MC - multiple choice, GR - gridded response, SR - short response, ER - extended response
pp - Test Item and Performance Task Specifications pages

SUMMARY OF BENCHMARKS ASSESSED ON FCAT - GRADE 9

A142: relative size of numbers (MC) p 40

A144: equivalent forms of numbers (MC, GR) pp 44-45, includes A141 (verbal and word names for numbers), A143 concrete and symbolic representations of numbers

A341: effects of operations on numbers (MC, GR) pp 49-50, includes A242 (real number system)

A342: properties of numbers as operational shortcuts (MC, GR) pp 54-55, includes A242 (see A341)

A343: appropriate methods of computing (MC, GR) pp 58-59, includes A242 (see A341)

A441: estimation strategies in complex situations (MC) pp 63-64, includes B341 (estimates of measurements)

Number Sense,
Concepts, and
Operations

B141: derive formulas for perimeter, area, surface area, circumference, or volume (MC, GR) pp 69-71, includes B122 (grades 3-5, real-world problems involving other common units of measure)

B142: derive formulas for rate, distance, time, angle measures, or arc lengths (MC, GR) pp 77-78, includes B122 (see B141)

B143: real-world problems involving similarity and proportionality (MC, GR) pp 84-86

B241: direct and indirect measurement (MC, GR) pp 89-90

B242: real-world problems involving rated measures (mph, fps) (MC, GR) pp 94-95, includes B232 (grades 6-8, problems and conversions within the metric or customary systems)

Measurement

C141: formal and informal proofs (MC, GR) pp 100-101, includes C121 (grades 3-5, describes/draws 2- and 3-D shapes), C131 (grades 6-8, basic properties of 2- and 3-D shapes)

C241: perpendicularity, parallelism, tangency, congruency, similarity, reflections, symmetry, and transformations (MC, GR) pp 109-111, includes B143, C141, C341 (see chart)

C341: ratio, proportion, right triangle geometry (MC) pp 124-126, includes C241 (see chart)

C342: algebraic properties in a rectangular coordinate system (MC, GR) pp 133-135, includes C332 (grades 6-8, ordered pairs and simple properties of lines), D241 (sequences and series)

Geometry and
Spatial Sense

D141: relationships, patterns, and functions (MC, GR) pp 143-144

D142: impact when changing parameters of functions (MC, GR) pp 151-153

D242: systems of linear equations and inequalities (MC, GR) pp 158-160, includes D241 (see C342)

Algebraic Thinking

E141: interpret data from charts, tables, and plots (MC, GR) pp 169-171, includes E131 (grades 6-8, different ways of presenting data, leading to different interpretations), E143 (use of statistics to make predictions)

E142: measures of central tendency and dispersion (MC, GR) pp 182-184, includes E143 (see E141)

E241: probability, including permutations and combinations (MC, GR) pp 188-190, includes E242 (probability for simple and compound events)

E341: interpret data that results from statistical experiments (MC, GR) pp 195-197, includes E331 (grades 6-8, inferences and conclusions based on statistics), E342 (limitations of statistical techniques and data in making inferences)

Data Analysis
and Probability

All FCAT math items at Grade 9 are tested in multiple choice (MC) or gridded response (GR) format
pp - Test Item and Performance Task Specifications pages

SUMMARY OF BENCHMARKS ASSESSED ON FCAT - GRADE 10

A142: relative size of numbers (MC) pp 41-42
A144: equivalent forms of numbers (MC, GR) pp 46-47, includes A141 (verbal and word names for numbers), A143 concrete and symbolic representations of numbers
A341: effects of operations on numbers (MC, GR) pp 51-52, includes A242 (real number system)
A342: properties of numbers as operational shortcuts (MC) p 56, includes A242 (see A341)
A343: appropriate methods of computing (MC, GR) pp 60-61, includes A242 (see A341)
A441: estimation strategies in complex situations (SR) pp 65-67, includes B341 (estimates of measurements)

Number Sense,
Concepts, and
Operations

B141: derive formulas for perimeter, area, surface area, circumference, or volume (GR, SR) pp 72-75, includes B122 (grades 3-5, real-world problems involving other common units of measure)
B142: derive formulas for rate, distance, time, angle measures, or arc lengths (MC, SR) pp 79-82, includes B122 (see B141)
B241: direct and indirect measurement (MC) pp 91-92
B242: real-world problems involving rated measures (mph, fps) (MC, GR) pp 96-98, includes B232 (grades 6-8, problems and conversions within the metric or customary systems)

Measurement

C141: formal and informal proofs (MC, GR, SR) pp 102-107, includes C121 (grades 3-5: describes/draws 2- and 3-D shapes), C131 (grades 6-8, basic properties of 2- and 3-D shapes)
C241: perpendicularity, parallelism, tangency, congruency, similarity, reflections, symmetry, and transformations (MC, GR, ER) pp 112-118, includes B143 (similarity and proportionality), C141, C341 (see chart)
C242: planar cross sections (MC) pp 121-122
C341: ratio, proportion, right triangle geometry (MC, SR) pp 127-131, includes C241 (see chart)
C342: algebraic properties in a rectangular coordinate system (MC, GR, SR) pp 136-141, includes C332 (grades 6-8, ordered pairs and simple properties of lines), D241 (sequences and series)

Geometry and
Spatial Sense

D141: relationships, patterns, and functions (MC, GR) pp 145-149
D142: impact when changing parameters of functions (SR) pp 154-156
D242: systems of linear equations and inequalities (MC, GR, SR) pp 161-167, includes D241 (see C342)

Algebraic Thinking

E141: interpret data from charts, tables, and plots (MC, GR, SR) pp 172-180, includes E131 (grades 6-8, different ways of presenting data, leading to different interpretations), E143 (use of statistics to make predictions)
E142: measures of central tendency and dispersion (MC, GR) pp 185-186, includes E143 (see E141)
E241: probability, including permutations and combinations (MC, GR) pp 191-193, includes E242 (probability for simple and compound events)
E341: interpret data that results from statistical experiments (MC, GR, SR) pp 198-202, includes E331 (grades 6-8, inferences and conclusions based on statistics), E342 (limitations of statistical techniques and data in making inferences)

Data Analysis
and Probability

MC - multiple choice, GR - gridded response, SR - short response, ER - extended response
pp - Test Item and Performance Task Specifications pages