

# Fifth Grade Benchmarks Mathematics

Level 5 – Student performance exceeds year-end standard

Level 4 – Student performance meets year-end standard

Level 3 – Student performance approaches year-end standard

Level 2 – Student demonstrates limited performance to year-end standard

Level 1 – Student does not yet evidence understanding or application of skills related to year-end standard

NOTE: MPI and MPII performance levels are determined based on performance expectations at the time of reporting

Student Performance Standard	Level 1	Level 2	Level 3	Level 4	Level 5
<i>Operations and Algebraic Thinking:</i>					
Write and interpret simple expressions.	Writes and interprets simple expressions with guidance.	Writes simple expressions that record some calculations with numbers; interprets some expressions; does not recognize errors.	Writes simple expressions that record calculations with numbers with few errors; interprets expressions with few errors; self-corrects most errors.	Consistently and accurately writes simple expressions that record calculations with numbers; consistently and accurately interprets expressions.	In addition to Level 4 performance, able to write expressions for novel problems or situations.
<i>Numbers and Operations in Base Ten:</i>					
Read and write whole numbers and decimals.	Reads and writes whole numbers and decimals with guidance.	Reads and writes some multi-digit whole numbers; reads and writes some decimals to the thousandths place; does not recognize most errors; evidences limited understanding of place value in whole numbers and decimals.	Reads and writes multi-digit whole numbers with few errors; reads and writes decimals to the thousandths place with few errors; self-corrects most errors; evidences some understanding of place value in whole numbers and decimals.	Consistently and accurately reads and writes multi-digit whole numbers; consistently and accurately reads and writes decimals to the thousandths place; evidences understanding of place value in whole numbers and decimals.	In addition to Level 4 performance, able to apply place value understanding to novel problems or situations.

Compare and round whole numbers and decimals.	Compares and rounds whole numbers and decimals with guidance.	Compares and rounds some whole numbers and decimals to a given place; does not recognize errors; evidences limited understanding of place value when rounding.	Compares and rounds whole numbers and decimals to any given place with few errors; self-corrects most errors; evidences some understanding of place value when rounding.	Consistently and accurately compares and rounds whole numbers and decimals to any given place; evidences understanding of place value when rounding.	In addition to Level 4 performance, able to compare and round numbers based on novel problems or situations.
Fluently multiply multi-digit whole numbers.	Multiplies multi-digit whole numbers with guidance; limited memorization of multiplication facts impacts both speed and accuracy.	Multiplies multi-digit whole numbers with limited speed and accuracy; limited memorization of multiplication facts impacts both speed and accuracy.	Multiplies multi-digit whole numbers with increasing speed and accuracy; self-corrects most errors.	Fluently (with speed and accuracy) multiplies multi-digit whole numbers.	In addition to Level 4 performance, models and explains multi-digit multiplication of whole numbers to peers.
Divide four-digit dividends by two-digit divisors.	Divides with guidance; limited understanding of the relationship between multiplication and division impacts division process.	Divides up to four-digit divisors by up to two-digit dividends with scaffolding using some strategies; does not recognize errors; illustrates and explains calculations with scaffolding; limited understanding of the relationship between multiplication and division impacts division process.	Divides up to four-digit divisors by up to two-digit dividends with minimal errors using strategies based on place value, properties of operations, and the relationship between multiplication and division; self-corrects most errors; illustrates and explains some calculations using equations, arrays and area models.	Consistently and accurately divides up to four-digit divisors by up to two-digit dividends using strategies based on place value, properties of operations, and the relationship between multiplication and division; clearly illustrates and explains calculations using equations, arrays and area models.	In addition to Level 4 performance, models and explains division algorithm to peers; able to solve novel problems involving division.

Add and subtract decimals to the hundredths place.	Adds and subtracts decimals with guidance.	Adds and subtracts decimals to the hundredths place with scaffolding using some strategies; does not recognize errors; explains reasoning for using some strategies with scaffolding.	Adds and subtracts decimals to the hundredths place with few errors using strategies based on place value, properties of operations, and the relationship between addition and subtraction; self-corrects most errors; explains reasoning for using some strategies.	Consistently and accurately adds and subtracts decimals to the hundredths place using strategies based on place value, properties of operations, and the relationship between addition and subtraction; clearly explains reasoning for using strategy.	In addition to Level 4 performance, models and explains addition and subtraction of decimals to peers; able to solve novel problems involving addition and subtraction of decimals.
Multiply decimals to the hundredths place.	Multiplies decimals with guidance; limited memorization of multiplication facts impacts multiplication of decimals.	Multiplies decimals to the hundredths place with scaffolding using some strategies; does not recognize errors; explains reasoning for using some strategies with scaffolding; limited memorization of multiplication facts impacts multiplication of decimals.	Multiplies decimals to the hundredths place with few errors using strategies based on place value and properties of operations; self-corrects most errors; explains reasoning for using some strategies.	Consistently and accurately multiplies decimals to the hundredths place using strategies based on place value and properties of operations; explains reasoning for using strategy.	In addition to Level 4 performance, models and explains multiplication of decimals to peers; able to solve novel problems involving multiplication of decimals.
Divide decimals to the hundredths place.	Divides decimals with guidance; limited memorization of multiplication facts and limited understanding of the relationship between multiplication and division impacts division of decimals.	Divides decimals to the hundredths place with scaffolding using some strategies; does not recognize errors; explains reasoning for using some strategies with scaffolding; limited memorization of multiplication facts and limited understanding of the relationship between	Divides decimals to the hundredths place with few errors using strategies based on place value and properties of operations; self-corrects most errors; explains reasoning for using some strategies.	Consistently and accurately divides decimals to the hundredths place using strategies based on place value and properties of operations; explains reasoning for using selected strategy.	In addition to Level 4 performance, models and explains division of decimals to peers; able to solve novel problems involving division of decimals.

		multiplication and division impacts division of decimals.			
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<i>Number and Operations – Fractions:</i>					
Add and subtract fractions with unlike denominators.	Adds and subtracts fractions with unlike denominators with guidance.	Adds and subtracts some fractions with unlike denominators including mixed numbers with scaffolding; does not recognize errors.	Adds and subtracts fractions with unlike denominators including mixed numbers with few errors by replacing given fractions with equivalent fractions; self-corrects most errors.	Consistently and accurately adds and subtracts fractions with unlike denominators including mixed numbers by replacing given fractions with equivalent fractions.	In addition to Level 4 performance, models and explains addition and subtraction of fractions with unlike denominators with peers; able to solve novel problems involving addition and subtraction of fractions with unlike denominators.
Solve word problems involving addition and subtraction of fractions.	Solves problems involving addition and subtraction of fractions with guidance.	Solves problems involving addition and subtraction of fractions with scaffolding; does not recognize errors.	Solves problems involving addition and subtraction of fractions with few errors; self-corrects most errors; assesses reasonableness of some responses by use of mental estimation, number sense, and benchmark fractions.	Consistently and accurately solves problems involving addition and subtraction of fractions; assesses reasonableness of responses by use of mental estimation, number sense, and benchmark fractions.	In addition to Level 4, models and explains solving word problems involving addition and subtraction of fractions to peers.
Multiply a fraction or whole number by a fraction.	Multiplies a fraction or whole number by a fraction with guidance; limited memorization of multiplication facts impacts multiplication of fractions.	Multiplies fractions or whole numbers by fractions with scaffolding; does not recognize errors; limited memorization of multiplication facts impacts multiplication of fractions.	Multiplies fractions or whole numbers by fractions with few errors by applying or extending previous understandings of multiplication; self-corrects most errors.	Consistently and accurately multiplies fractions or whole numbers by fractions by applying or extending previous understandings of multiplication.	In addition to Level 4 performance, models and explains multiplication of a fraction or whole number by a fraction to peers; able to solve novel problems involving multiplication of a

					fraction or whole number by a fraction.
Solve word problems involving multiplication of fractions and mixed numbers.	Solves problems involving multiplication of fractions and mixed numbers with guidance.	Solves some real world problems involving multiplication of fractions and mixed numbers with scaffolding; does not recognize errors.	Solves real world problems involving multiplication of fractions and mixed numbers with few errors; self-corrects most errors.	Consistently and accurately solves real world problems involving multiplication of fractions and mixed numbers.	In addition to Level 4 performance, models and explains multiplication of fractions and mixed numbers to peers.
Divide fractions by whole numbers and whole numbers by fractions.	Divides fractions by whole numbers and whole numbers by fractions with guidance; limited understanding of the relationship between multiplication and division impacts division of fractions.	Divides fractions by whole numbers and whole numbers by fractions with scaffolding; does not recognize errors; limited understanding of the relationship between multiplication and division impacts division of fractions.	Divides fractions by whole numbers and whole numbers by fractions with few errors by applying or extending previous understandings of division; self-corrects most errors.	Consistently and accurately divides fractions by whole numbers and whole numbers by fractions by applying or extending previous understandings of division.	In addition to Level 4 performance, models and explains division of fractions by whole numbers and fractions to peers; able to solve novel problems involving division of fractions by whole numbers and fractions.

<i>Measurement and Data:</i>					
Convert measurement units.	Converts measurement units with guidance.	Converts some different-sized standard measurement units with scaffolding; does not recognize errors; uses these conversions to solve specific real world problems.	Converts different-sized standard measurement units within a given measurement system with few errors; self-corrects most errors; uses these conversions to solve some real world problems.	Consistently and accurately converts different-sized standard measurement units within a given measurement system; uses these conversions to solve real world problems.	In addition to Level 4 performance, able to solve novel problems involving conversion of measurement units.
Display a data set of measurements in fractional increments.	Displays a data set of measurements with guidance; limited understanding of how	Makes a line plot to display a data set of measurements in fractions of a unit with	Makes a line plot to display a data set of measurements in fractions of a unit with	Consistently and accurately makes a line plot to display a data set of	In addition to Level 4 performance, models and explains data sets of

	operations on fractions impacts ability to solve problems.	scaffolding; does not recognize errors; limited understanding of how operations of fractions impacts ability to solve problems.	few errors; self-corrects most errors; uses operations of fractions to solve some problems involving information presented in line plots.	measurements in fractions of a unit; uses operations of fractions to solve problems involving information presented in line plots.	measurements in fractional increments to peers.
Measure cubic volume.	Measures cubic volume with guidance.	Measures volume by counting unit cubes as well as using standard measures of volume (cubic cm, cubic in, cubic ft) with scaffolding; does not recognize errors.	Measures volume by counting unit cubes as well as using standard measures of volume (cubic cm, cubic in, cubic ft) with few errors; self-corrects most errors.	Consistently and accurately measures volume by counting unit cubes as well as using standard measures of volume (cubic cm, cubic in, cubic ft).	In addition to Level 4 performance, models and explains measuring cubic volume to peers.
Solve word problems for volume.	Solves problems for volume with guidance; limited understanding of the operations of how multiplication and addition impact ability to solve problems.	Solves some real world problems involving volume with scaffolding; limited understanding of how operations of multiplication and addition impact ability to solve problems.	Solves some real world problems involving volume by relating volume to the operations of multiplication and addition.	Consistently and accurately solves real world problems involving volume by relating volume to the operations of multiplication and addition.	In addition to Level 4 performance, able to solve novel problems involving volume.

<i>Geometry:</i>					
Graph points on the coordinate plane.	Graphs points on the coordinate plan with guidance.	Graphs points in the first quadrant of the coordinate plane with scaffolding; does not recognize errors; interprets values of points with scaffolding.	Graphs points in the first quadrant of the coordinate plane with few errors; self-corrects most errors; interprets values of points based on context and exemplars.	Consistently and accurately graphs points in the first quadrant of the coordinate plane; interprets values of points based on context.	In addition to Level 4 performance, models and explains graphing points on the coordinate plane to peers.
Classify two-dimensional figures.	Classifies two-dimensional figures with guidance.	Classifies two-dimensional figures based on properties	Classifies two-dimensional figures based on properties	Consistently and accurately classifies two-dimensional	In addition to Level 4 performance, models and explains

		with scaffolding; does not recognize errors.	with few errors; self-corrects most errors.	figures based on properties.	classification of two-dimensional figures.
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