Math: Concepts and Procedures

Competency: Using conceptual understanding and procedures to solve a variety of problems accurately.

Grade Level Competency: Kindergarten
Students will use conceptual understanding of mathematical ideas to develop procedural fluency.

Criteria	Extending	Proficient	In Progress	Beginning
Measurement	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can identify and appropriately use units of measurement.	I can use units of measurement.	I can measure.
Number & Operations		I can fluently apply my understanding of whole number systems and operations.	I can understand whole number systems and operations.	I can count numbers.
Data Analysis		I can collect, display, and draw conclusions from given data.	I can collect and display data.	I can collect data.
Geometry		I can apply my knowledge of 2-D and 3-D shapes to model objects in my world.	I can name attributes of 2-D and 3-D shapes.	I can name shapes.
Algebraic Thinking		I can compare and analyze situations that involve change and equivalence.	I can solve equations that involve change.	I can count forward and backward.

MDE grade level benchmarks embedded explicitly in the rubric

Kindergarten
K.1.1.5 Compare and order whole numbers, with and without objects, from 0 to 20.
K.1.2.2 Compose and decompose numbers up to 10 with objects and pictures.
K.3.1.3 Use basic shapes and spatial reasoning to model objects in the real-world.

Math: Concepts and Procedures

Competency: Using conceptual understanding and procedures to solve a variety of problems accurately.

Grade Level Competency: Grades 1-2
Students will use conceptual understanding of mathematical ideas to develop procedural fluency.

Criteria	Extending	Proficient	In Progress	Beginning
Measurement	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can identify and appropriately use units of measurement. ☐ Grade 1 ☐ Grade 2	I can use units of measurement. ☐ Grade 1 ☐ Grade 2	I can measure. ☐ Grade 1 ☐ Grade 2
Number & Operations		I can fluently apply my understanding of whole number systems and operations. ☐ Grade 1 ☐ Grade 2	I can understand whole number systems and operations. ☐ Grade 1 ☐ Grade 2	I can count numbers. ☐ Grade 1 ☐ Grade 2
Data Analysis		I can collect, display, and draw conclusions from given data. ☐ Grade 1 ☐ Grade 2	I can collect and display data. ☐ Grade 1 ☐ Grade 2	I can collect data. ☐ Grade 1 ☐ Grade 2
Geometry		I can apply my knowledge of 2-D and 3-D shapes to model objects in my world. ☐ Grade 1 ☐ Grade 2	I can name attributes of 2-D and 3-D shapes. ☐ Grade 1 ☐ Grade 2	I can name shapes. ☐ Grade 1 ☐ Grade 2
Algebraic Thinking		I can compare and analyze situations that involve change and equivalence. ☐ Grade 1 ☐ Grade 2	I can solve equations that involve change. ☐ Grade 1 ☐ Grade 2	I can count forward and backward. ☐ Grade 1 ☐ Grade 2

Math: Concepts and Procedures

Competency: Using conceptual understanding and procedures to solve a variety of problems accurately.

Grade Level Competency: Grades 3-4
Students will use conceptual understanding of mathematical ideas to develop procedural fluency.

Criteria	Extending	Proficient	In Progress	Beginning
Measurement	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can identify, apply, model, and convert between units of measurement. ☐ Grade 3 ☐ Grade 4	I can identify and apply units of measurement. ☐ Grade 3 ☐ Grade 4	I can identify units of measurement. ☐ Grade 3 ☐ Grade 4
Number & Operations		I can fluently apply my understanding of positive rational number systems and operations. ☐ Grade 3 ☐ Grade 4	I can apply the whole number system and operations ☐ Grade 3 ☐ Grade 4	I can understand whole number systems. ☐ Grade 3 ☐ Grade 4
Data Analysis		I can collect, organize, display, and draw conclusions about given data in multiple ways. ☐ Grade 3 ☐ Grade 4	I can collect and display data in multiple ways. ☐ Grade 3 ☐ Grade 4	I can collect and display data. ☐ Grade 3 ☐ Grade 4
Geometry		I can apply my knowledge of geometric properties in relation to the world around me. ☐ Grade 3 ☐ Grade 4	I can apply my knowledge of geometric properties. ☐ Grade 3 ☐ Grade 4	I can name geometric properties. ☐ Grade 3 ☐ Grade 4
Algebraic Thinking		I can compare, analyze, and apply concepts that involve change and equivalence. ☐ Grade 3 ☐ Grade 4	I can represent change and unknowns with variables and properties of equivalence. ☐ Grade 3 ☐ Grade 4	I can compare situations that involve change and equivalence. ☐ Grade 3 ☐ Grade 4

Math: Concepts and Procedures

Competency: Using conceptual understanding and procedures to solve a variety of problems accurately.

Grade Level Competency: Grades 5-6:
Students will use conceptual and procedural understanding to accurately solve problems.

Criteria	Extending	Proficient	In Progress	Beginning
Measurement	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can accurately reason and convert units of measurement that are appropriate in the context of the problem. ☐ Grade 5 ☐ Grade 6	I can convert units of measurement that are appropriate in the context of the problem. ☐ Grade 5 ☐ Grade 6	I can identify appropriate units of measurement for the context of the problem. ☐ Grade 5 ☐ Grade 6
Number & Operations		I can fluently apply my understanding of positive rational number systems and operations. ☐ Grade 5 ☐ Grade 6	I can apply my understanding of positive rational number systems and operations. ☐ Grade 5 ☐ Grade 6	I can apply my understanding of natural numbers ☐ Grade 5 ☐ Grade 6
Data Analysis		I can collect and analyze data and communicate the results in a meaningful way. I can use data to make decisions. ☐ Grade 5 ☐ Grade 6	I can collect data and use it to make decisions. ☐ Grade 5 ☐ Grade 6	I can use given data to answer questions. ☐ Grade 5 ☐ Grade 6
Geometry		I can apply my knowledge of geometric properties in relation to the world around me. ☐ Grade 5 ☐ Grade 6	I can identify and use geometric properties to solve problems. ☐ Grade 5 ☐ Grade 6	I can identify geometric properties for 2-D and 3-D shapes. ☐ Grade 5 ☐ Grade 6

Algebraic Thinking		I can represent change and unknowns with variables and apply concepts and properties of equivalence to create and compare algebraic expressions and equations. ☐ Grade 5 ☐ Grade 6	I can represent change and unknowns with variables and properties of equivalence to create algebraic expressions and equations. ☐ Grade 5 ☐ Grade 6	I can represent change and unknowns with variables. ☐ Grade 5 ☐ Grade 6

Math: Concepts and Procedures

Competency: Using conceptual understanding and procedures to solve a variety of problems accurately.

Grade Level Competency: Grades 7-8

Students will use conceptual and procedural understanding to accurately solve problems.

Criteria	Extending	Proficient	In Progress	Beginning
Measurement	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can accurately reason, convert, and defend units of measurement that are appropriate in the context of the problem. ☐ Grade 7 ☐ Grade 8	I can reason and convert units of measurement that are appropriate in the context of the problem. ☐ Grade 7 ☐ Grade 8	I can determine the appropriate unit of measurement needed to solve the problem. ☐ Grade 7 ☐ Grade 8
Number & Operations		I can fluently apply my understanding of rational number systems and operations. ☐ Grade 7 ☐ Grade 8	I can apply my understanding of positive rational number systems and operations. ☐ Grade 7 ☐ Grade 8	I can apply my understanding of natural number systems and operations. ☐ Grade 7 ☐ Grade 8
Data Analysis		I can collect and analyze data and communicate the results in a meaningful way. I can use data to make decisions. ☐ Grade 7 ☐ Grade 8	I can collect data and use it to make decisions. ☐ Grade 7 ☐ Grade 8	I can use given data to answer questions. ☐ Grade 7 ☐ Grade 8
Geometry		I can apply my knowledge of geometric properties and make connections to the world around me. ☐ Grade 7 ☐ Grade 8	I can identify and use geometric properties to solve problems. ☐ Grade 7 ☐ Grade 8	I can identify geometric properties. ☐ Grade 7 ☐ Grade 8

Algebraic Thinking		I can represent change and unknowns with variables and apply concepts and properties of equivalence to create and compare algebraic expressions and equations. ☐ Grade 7 ☐ Grade 8	I can represent change and unknowns with variables and show an understanding of equivalence. ☐ Grade 7 ☐ Grade 8	I can represent change and unknowns with variables. ☐ Grade 7 ☐ Grade 8

MDE grade level benchmarks embedded explicitly in the rubric:

Grade 7	**Grade 8**
7.1.2.1- Add, subtract, multiply and divide positive and negative rational numbers that are integers, fractions and terminating decimals; use efficient and generalizable procedures, including standard algorithms; raise positive rational numbers to whole-number exponents. 7.3.2.2- Apply scale factors, length ratios and area ratios to determine side lengths and areas of similar geometric figures. 7.3.1.2- Calculate the volume and surface area of cylinders and justify the formulas used. 7.1.1.5- Recognize and generate equivalent representations of positive and negative rational numbers, including equivalent fractions. 7.1.1.4- Compare positive and negative rational numbers expressed in various forms using the symbols $<, >, =, \le, \ge$. 7.3.2.1- Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors. 7.3.2.3- Use proportions and ratios to solve problems involving scale drawings and conversions of measurement units. 7.2.4.1- Represent relationships in various contexts with equations involving variables and positive and negative rational numbers. Use the properties of equality to solve for the value of a variable. Interpret the solution in the original context.	8.1.1.2 Compare real numbers; locate real numbers on a number line. Identify the square root of a positive integer as an integer, or if it is not an integer, locate it as a real number between two consecutive positive integers. 8.1.1.4 Know and apply the properties of positive and negative integer exponents to generate equivalent numerical expressions. 8.2.1.3 Understand that a function is linear if it can be expressed in the form $f(x) = mx + b$ or if its graph is a straight line. 8.2.4.2 Solve multi-step equations in one variable. Solve for one variable in a multi-variable equation in terms of the other variables. Justify the steps by identifying the properties of equalities used.

Math: Concepts and Procedures

Competency: Using conceptual understanding and procedures to solve a variety of problems accurately.

Grade Level Competency: Grades 9-12

Students will apply concepts and procedures from a variety of mathematical disciplines to solve problems.

Criteria	Extending	Proficient	In Progress	Beginning
Measurement	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can accurately reason, convert, and defend units that are appropriate in the context of the problem, including for newly introduced units of measurement.	I can identify units of measurement and convert between units of measurement when necessary.	I can identify units of measurement in a given scenario.
Number & Operations		I can fluently apply my knowledge of real and complex number systems and operations.	I can expand on properties and operations of whole and rational number systems to understand the real number system.	I can apply properties and operations of whole and rational number systems.
Data Analysis		I can use data and statistical thinking to infer, make predictions and justify conclusions.	I can collect and categorize data. I can calculate statistics.	I can read and understand a set of data.
Geometry		I can analyze characteristics of geometric shapes and apply spatial reasoning to make arguments and solve real-world problems.	I can analyze characteristics of geometric shapes and apply spatial reasoning to solve problems.	I can identify characteristics of geometric shapes
Algebraic Thinking		I can represent change and unknowns with variables and apply concepts and properties of equivalence to create and compare algebraic expressions and equations.	I can represent change and unknowns with variables and solve simple expressions.	I can represent change and unknowns with variables.