FIRST GRADE

MATHEMATICS

GRADE LEVEL CONTENT EXPECTATIONS

1 MATH

v.12.05

NUMBER & OPERATIONS

ALGEBRA

MEASUREMENT

GEOMETRY

DATA & PROBABILITY

Welcome to Michigan's K-8 Grade Level Content Expectations

Purpose & Overview

In 2004, the Michigan Department of Education embraced the challenge of creating Grade Level Content Expectations in response to the federal No Child Left Behind Act of 2001. This act mandated the existence of a set of comprehensive state grade level assessments that are designed based on rigorous grade level content.

In this global economy, it is essential that Michigan students possess personal, social, occupational, civic, and quantitative literacy. Mastery of the knowledge and essential skills defined in Michigan's Grade Level Content Expectations will increase students' ability to be successful academically, contribute to the future businesses that employ them and the communities in which they choose to live.

The Grade Level Content Expectations build from the Michigan Curriculum Framework and its Teaching and Assessment Standards. Reflecting best practices and current research, they provide a set of clear and rigorous expectations for all students and provide teachers with clearly defined statements of what students should know and be able to do as they progress through school.

Why Create a 12.05 Version of the Expectations?

The Office of School Improvement is committed to creating the best possible product for educators. This commitment served as the impetus for the revision of the 6.04 edition that was previously released in June of 2004. This new version, v.12.05, refines and clarifies the original expectations, while preserving their essence and original intent. As education continues to evolve, it is important to remember that each curriculum document should be considered as a work in progress, and will continue to be refined to improve the quality.

The revision process greatly improved the continuity from one grade to the next, and better ensured coherence both in content and pedagogy. To obtain more specific details about the revisions, please refer to the addendum included in this document. The forward of the ***Across the Grades v.12.05*** companion document also clarifies the types of changes made. Educators can access the *Across the Grades* companion document by visiting the Michigan Department of Education Grade Level Content Expectations web page at www.michigan.gov/glce.

Assessment

The Grade Level Content Expectations document is intended to be a state assessment tool with the expectations written to convey expected performances by students. The Office of Assessment and Accountability was involved in the development of version 12.05 and has incorporated the changes in the construction of test and item specifications for the K-8 Michigan Education Assessment Program (MEAP) and MI-Access. This updated version will assist us in the creation of companion documents, content examples, and to guide program planners in focusing resources and energy.

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Curriculum

Using this document as a focal point in the school improvement process, schools and districts can generate conversations among stakeholders concerning current policies and practices to consider ways to improve and enhance student achievement. Together, stakeholders can use these expectations to guide curricular and instructional decisions, identify professional development needs, and assess student achievement.

Understanding the Organizational Structure

The expectations in this document are divided into strands with multiple domains within each, as shown below. The skills and content addressed in these expectations will in practice be woven together into a coherent, Mathematics curriculum. The domains in each mathematics strand are broader, more conceptual groupings. In several of the strands, the "domains" are similar to the "standards" in Principles and Standards for School Mathematics from the National Council of Teachers of Mathematics.

To allow for ease in referencing expectations, each expectation has been coded with a strand, domain, grade-level, and expectation number. For example, **M.UN.00.01** indicates:

M - Measurement strand

UN - Units & systems of measurement domain of the Measurement strand

00 - Kindergarten Expectation

01 - First Expectation in the Grade-Level view of the Measurement strand

Strand 1 Number & Operations	**Strand 2 Algebra**	**Strand 3 Measurement**	**Strand 4 Geometry**	**Strand 5 Data and Probability**
Domains				
Meaning, notation, place value, and comparisons (ME) Number relationships and meaning of operations (MR) Fluency with operations and estimation (FL)	Patterns, relations, functions, and change (PA) Representation (RP) Formulas, expressions, equations, and inequalities (RP)	Units and systems of measurement (UN) Techniques and formulas for measurement (TE) Problem solving involving measurement (PS)	Geometric shape, properties, and mathematical arguments (GS) Location and spatial relationships (LO) Spatial reasoning and geometric modeling (SR) Transformation and symmetry (TR)	Data representation (RE) Data interpretation and analysis (AN) Probability (PR)

Preparing Students for Academic Success

Within the hands of teachers, the Grade Level Content Expectations are converted into exciting and engaging learning for Michigan's students. As we use these expectations to develop units of instruction and plan instructional delivery, it is critical to keep in mind that content knowledge alone is not sufficient for academic success. Students must be able to apply knowledge in new situations, to solve problems by generating new ideas, and to make connections between what they learn in class to the world around them. The art of teaching is what makes the content of learning become a reality.

Through the collaborative efforts of Michigan educators and creation of professional learning communities, we can enable our young people to attain the highest standards, and thereby open doors for them to have fulfilling and successful lives.

NUMBER AND OPERATIONS

Count, write, and order numbers

N.ME.01.01 Count to 110 by 1's, 2's, 5's, and 10's, starting from any number in the sequence; count to 500 by 100's and 10's; use ordinals to identify position in a sequence, e.g., 1st, 2nd, 3rd.

N.ME.01.02 Read and write numbers to 110 and relate them to the quantities they represent.

N.ME.01.03 Order numbers to 110; compare using phrases such as "same as", "more than", "greater than", "fewer than"; use = symbol. Arrange small sets of numbers in increasing or decreasing order, e.g., write the following from smallest to largest: 21, 16, 35, 8.

N.ME.01.04 Identify one more than, one less than, 10 more than, and 10 less than for any number up to 100.

N.ME.01.05 Understand that a number to the right of another number on the number line is bigger and that a number to the left is smaller.

N.ME.01.06 Count backward by 1's starting from any number between 1 and 100.

Explore place value

N.ME.01.07 *Compose and decompose numbers through 30, including using bundles of tens and units, e.g., recognize 24 as 2 tens and 4 ones, 10 and 10 and 4, 20 and 4, and 24 ones.**

Add and subtract whole numbers

N.ME.01.08 List number facts (partners inside of numbers) for 2 through 10, e.g., 8 = 7 + 1 = 6 + 2 = 5 + 3 = 4 + 4; 10 = 8 + 2 = 2 + 8.

N.MR.01.09 Compare two or more sets in terms of the difference in number of elements.

N.MR.01.10 *Model addition and subtraction for numbers through 30 for a given contextual situation using objects or pictures; explain in words; record using numbers and symbols; solve.**

N.MR.01.11 Understand the inverse relationship between addition and subtraction, e.g., subtraction "undoes" addition: if 3 + 5 = 8, we know that 8 - 3 = 5 and 8 - 5 = 3; recognize that some problems involving combining, "taking away," or comparing can be solved by either operation.

N.FL.01.12 Know all the addition facts up to 10 + 10, and solve the related subtraction problems fluently.

N.MR.01.13 Apply knowledge of fact families to solve simple open sentences for addition and subtraction, such as: □ + 2 = 7 and 10 - □ = 6.

N.FL.01.14 Add three one-digit numbers.

N.FL.01.15 Calculate mentally sums and differences involving: a two-digit number and a one-digit number without regrouping; a two-digit number and a multiple of 10.

N.FL.01.16 *Compute sums and differences through 30 using number facts and strategies, but no formal algorithm.**

MEASUREMENT

Estimate and measure length

M.UN.01.01 Measure the lengths of objects in non-standard units, e.g., pencil lengths, shoe lengths, to the nearest whole unit.

M.UN.01.02 Compare measured lengths using the words shorter, shortest, longer, longest, taller, tallest, etc.

**revised expectations in italics*

MEASUREMENT

Tell time

M.UN.01.03 Tell time on a twelve-hour clock face to the hour and half-hour.

Work with money

M.UN.01.04 Identify the different denominations of coins and bills.

M.UN.01.05 Match one coin or bill of one denomination to an equivalent set of coins/bills of other denominations, e.g., 1 quarter = 2 dimes and 1 nickel.

M.UN.01.06 Tell the amount of money: in cents up to $1, in dollars up to $100. Use the symbols $ and ¢.

M.PS.01.07 Add and subtract money in dollars only or in cents only.

Solve problems

M.PS.01.08 Solve one-step word problems using addition and subtraction of length, money and time, including "how much more/less", without mixing units.

GEOMETRY

Create and describe shapes

G.GS.01.01 Create common two-dimensional and three-dimensional shapes, and describe their physical and geometric attributes, such as color and shape.

G.LO.01.02 Describe relative position of objects on a plane and in space, using words such as above, below, behind, in front of.

Create and describe patterns involving geometric objects

G.SR.01.03 Create and describe patterns, such as repeating patterns and growing patterns using number, shape, and size.

G.SR.01.04 Distinguish between repeating and growing patterns.

G.SR.01.05 Predict the next element in a simple repeating pattern.

G.SR.01.06 Describe ways to get to the next element in simple repeating patterns.

DATA AND PROBABILITY

Use pictographs

D.RE.01.01 Collect and organize data to use in pictographs.

D.RE.01.02 Read and interpret pictographs.

D.RE.01.03 Make pictographs of given data using both horizontal and vertical forms of graphs; scale should be in units of one and include symbolic representations, e.g., ☺ represents one child.