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[www.michigan.gov/mde](http://www.michigan.gov/mde)



# A Parent's Guide to

## MATHEMATICS GRADE LEVEL CONTENT EXPECTATIONS

WHAT YOUR CHILD NEEDS  
TO KNOW BY THE END OF

# FIRST GRADE

## Welcome to Our School!

This school year promises to be an exciting time for your child, filled with learning, discovery, and growth. It is also a time to share a new guide the Michigan Department of Education has developed for you. *A Parent's Guide to Grade Level Content Expectations* outlines the types of literacy and mathematics skills students should know and be able to do at the end of each grade.

Please feel free to share this guide with your family and friends. Use it when you talk with your child's teacher. Ask what *you* can do to support learning in the classroom and reinforce learning at home. You can find more ideas and tools to help you stay involved in your child's education at [www.michigan.gov/mde](http://www.michigan.gov/mde).

Your school principal (customize)

## Notes

# Glossary Page

- **data analysis and statistics** – interpret information and see relationships, by using tables, graphs and charts
- **fluently** – the ability to calculate numbers with ease and accuracy
- **geometry** – the area of mathematics that involves shape, size, space, position, direction, and movement. It describes and classifies the physical world in which we live.
- **measurement** – finding the length, height, and weight of an object using units like inches, feet, meters, centimeters, and pounds. Time is measured using hours, minutes and seconds.
- **perimeter** – the distance around a two-dimensional shape found by adding together the measured length of all the sides of the shape
- **pictographs** – a graph constructed with pictures or icons. Pictures are used to represent numbers.  
Example: Each ☺ = 1 cookie



## Questions to ask of your child's teacher:

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# A Parent's Guide to the Grade Level Content Expectations

## Michigan Sets High Academic Standards –for ALL

This booklet is a part of Michigan's Mathematics and English Language Arts Grade Level Content Expectations (GLCE). It is just one in a series of tools available for schools and families. The Michigan Department of Education (MDE) provides similar booklets for families of children in kindergarten, first and second grade.

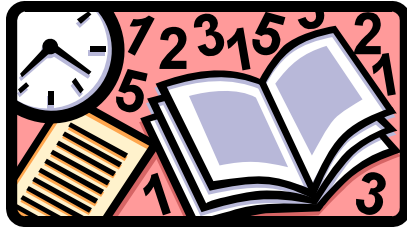
Teacher versions of the Grade Level Content Expectations are finished for grades Kindergarten through eight. They state in clear and measurable terms what students in each grade are expected to know and be able to do. They also guide the design of the state's grade level MEAP tests required in the No Child Left Behind Act (NCLB) legislation.

Educators and classroom teachers from Michigan school districts have been involved in the development and/or review of Michigan's GLCE. The expectations were designed to ensure that students receive seamless instruction, from one grade to the next, leaving no gaps in any child's education. More importantly, they set high expectations in literacy and mathematics so we can better prepare all K-12 students for the challenges they will face in a global 21<sup>st</sup> century.

To learn more about the Michigan Curriculum Framework, visit [www.michigan.gov/mde](http://www.michigan.gov/mde) and click on "K-12 Curriculum."

**First Grade Mathematics** is the science of patterns and relationships. It is the language and logic of our technological world. Mathematical power is the ability to explore, to imagine, to reason logically and to use a variety of mathematical methods to solve problems - all important tools for children's futures. A mathematically powerful person should be able to:

- reason mathematically.
- communicate mathematically.
- solve problems using mathematics.
- make connections within mathematics and between mathematics and other fields.



Michigan's **Mathematics Grade Level Content**

**Expectations** (GLCE) are organized into five strands:

- Number and Operations
- Algebra
- Geometry
- Measurement
- Data and Probability

In the first grade, children are asked to strengthen their **counting** knowledge, and to explore addition and subtraction using concrete materials and situations. Students will begin to measure time and money, geometry concepts are based on children's experiences in the real world.

**Glossary Terms**

Words that have asterisks (\*) are defined in the Glossary located in the back of this booklet.

**DATA AND PROBABILITY**

Data analysis and statistics (\*)

**Use Pictographs (\*)**

- ❑ Collect and organize data to use in pictographs. Read and interpret pictographs.
- ❑ Make pictographs of given data using both horizontal and vertical graphs. Example: Which child has the most children living on his or her block? Each ☺ = 1 child

James	☺ ☺ ☺ ☺
Kylia	☺ ☺
Bob	☺ ☺ ☺ ☺ ☺ ☺ ☺



## GEOMETRY(\*)

- Create and describe shapes.
- Describe common two-dimensional and three-dimensional shapes. Example: the small blue triangle, the large silver can.
- Describe the position of objects using words such as above, below, behind, in front of.
- Create and describe patterns involving geometric objects.
- Create and describe patterns, such as repeating patterns, and growing patterns using number, shape and size. Example: What would come next in these patterns?

Shapes



Size



- Tell the difference between a repeating pattern and a growing pattern.
- Predict the next element in a simple repeating pattern.
- Describe ways to get to the next element in simple repeating patterns.

### Ways to Praise Your Child

*Great work!*

*I knew you could do it!*

*You are getting better every day!*

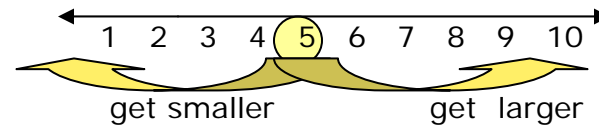
*Keep on trying.*



## NUMBER AND OPERATIONS

### Count, Write, and Order Numbers

- Count to 110 by 1s, 2s, 5s, and 10s, starting from any number. Count to 500 by 100s and 10s.
- Use numbers to show position in a sequence (1st, 2nd, 3rd).
- Read and write numbers to 110 and match them to the same number of objects.
- Put numbers in order to 110. Compare numbers using the phrases same as, more than, greater than, fewer than; use the = symbol.
- Arrange small sets of numbers in increasing or decreasing order. (Write the following from smallest to largest: 21, 16, 35, 8)
- Identify one more than, one less than, 10 more than and 10 less than for any number up to 100.
- When using a number line, know that a number to the left of a number is smaller and a number to the right of a number is larger. Example:



- Count backward by 1s starting from any number between 1 and 100.
- Explore place value by bundling (straws) into groups of tens and ones (24 is made of 2 tens and 4 ones or 24 ones).

## Add and Subtract Numbers

- List number facts for 2 through 10.  
Example:  
Here are different facts to make 5.  
 $1+4=5$   $2+3=5$   $3+2=5$   $4+1=5$   $5+0=5$
- Compare the difference of objects in two groups.
- Add and subtract numbers less than 20. Be able to solve and explain story problems using objects, pictures and/or numerals.
- Understand that subtraction is connected to addition.  
Example: Because  $3+5=8$ , we know that  $8-3=5$ .
- Know all the addition facts up to  $10+10$  and solve the related subtraction facts.
- Find the missing numbers for addition and subtraction facts.  
Example:  $2 + \underline{\quad} = 6$      $6 - \underline{\quad} = 2$
- Add three one-digit numbers. Example:  $1 + 2 + 4 = \underline{\quad}$
- Add and subtract in his/her head (mental math) when the problem involves a 2-digit number and a 1-digit number without regrouping or carrying.  
Example:  $22 + 2 = \underline{\quad}$



## MEASUREMENT(\*)

- Measure the lengths of objects in non-standard units.  
Example: Use a pencil as a ruler to get pencil lengths of objects, or connected paper clips as a ruler to get paperclip lengths of objects.
- Compare measured lengths using the words shorter, shortest, longer, longest, taller, tallest.

### Explore Concepts of Time

#### Tell Time

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



### Work with Money

- Name different coins and bills.
- Match one coin or bill to another way to form that same amount of money. Example: 1 quarter = 2 dimes and 1 nickel.
- Tell the amount of money they see/have: using cents up to \$1.00 and using dollars up to \$100.00
- Use the symbols \$ and ¢.
- Add and subtract money in dollars only or in cents only.



### Solve Problems

- Solve one-step word problems using addition and subtraction, money and time, including 'how much more or less, without mixing units.  
Example:  $\$1.00 + \$2.00 = \$3.00$