

LINCOLN PUBLIC SCHOOLS  
Mathematics Learning Expectations: Grade 4

**Massachusetts  
Standards**

The 2011 Massachusetts Curriculum Framework for Mathematics incorporates the common core standards and a select number of additional standards unique to Massachusetts.

**Critical Areas for  
Instructional Focus:**

- Multi-digit multiplication and division
- Fraction equivalence and operations
- Geometric properties

*See 2011  
Massachusetts  
Curriculum  
Frameworks for  
Mathematics:  
Grade 4 Introduction  
for more detail.*

**Content Domains and Key Outcomes**

**Operations and Algebraic Thinking**

- Write an equation to represent a word problem, using a symbol for an unknown quantity
- Recognize and generate factors and multiples of a number
- Generate and analyze numerical patterns

**Number and Operations in Base 10**

- Fluently find products up to  $12 \times 12$  and the related division facts
- Use place value understanding and properties of operations to perform multi-digit computation

**Number and Operations Fractions**

- Recognize and generate equivalent fractions; order fractions
- Use knowledge of unit fractions to add and subtract fractions with like denominators; multiply fractions by whole numbers
- Read, write and compare decimals

**Measurement and Data**

- Use tools to measure length, liquid volume, mass, angle degrees and time intervals
- Convert measurements from a larger unit to a small unit
- Represent and interpret data using line plots

**Geometry**

- Draw and identify lines and angles and classify shapes by properties of their lines and angles

*See 2011 Massachusetts Curriculum Frameworks for Mathematics: Grade 4 for more detail.*

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**Standards for Mathematical Practice**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.

5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

*See 2011 Massachusetts Curriculum Frameworks for Mathematics:  
pp.15-17 for more detail on the use of these standards in all domains.*