

## Grade 3 Mathematics Newton Public Schools

The goal of the mathematics program in the Newton Public Schools is for all students to understand mathematical concepts and procedures; to be able to apply procedures, concepts, and processes to the solution of challenging problems in a variety of school, home and work settings; and to prepare students for continued study of mathematics and fields that require the use of mathematics.

This is the second of our two-year transition to the Massachusetts Curriculum Framework for Mathematics. During this second year, we will continue to use *Everyday Mathematics* as our core text, eliminating topics that are no longer content expectations in Grade 3, adding two units of study from *Context for Learning Mathematics*, and incorporating activities from *Developing Number Concepts* and *Understanding Number Concepts* that deepen students understanding of multiplication, division, place value, and fractions.

Mathematical practices students will use in third grade include:

- making sense of problems and persevering in solving them;
- reasoning abstractly and quantitatively;
- constructing viable arguments and critiquing the reasoning of others;
- modeling with mathematics;
- using appropriate tools strategically;
- attending to precision;
- looking for and making use of structure;
- looking for and expressing regularity in repeated reasoning.

Instructional time in third grade will concentrate on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

## Content Emphasized in Grade 3 Mathematics

Third grade students develop a broad background by learning concepts and skills in all content strands. The third-grade mathematics curriculum emphasizes the following content.

### Operations and Algebraic Thinking

Represent and solve problems involving multiplication and division with one digit whole numbers. Understand properties of multiplication and the relationship between multiplication and division. Identify arithmetic patterns and explain them using properties of operations.

### Number and Operations in Base Ten

Use place value understanding and properties of operations to add and subtract multi-digit whole numbers.

### Number and Operations with Fractions

Understand a fraction  $\frac{1}{b}$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $\frac{a}{b}$  as the quantity formed by  $a$  parts of size  $\frac{1}{b}$ . Understand fractions as a location on the number line. Compare fractions by reasoning about their size.

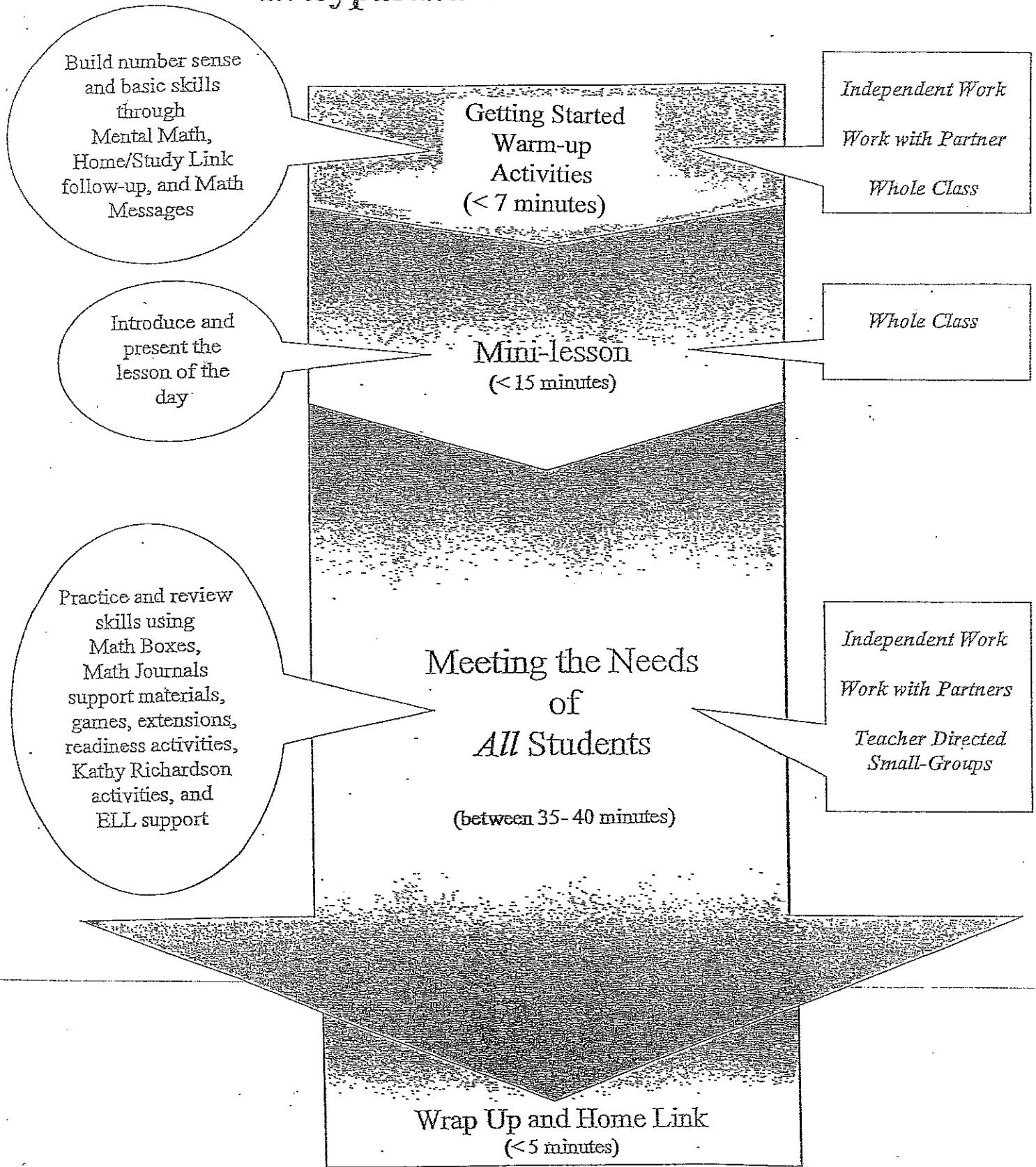
### Measurement and Data

Solve problems involving measurement and estimation of liquid volumes, masses of objects, and intervals of time. Represent and interpret data in bar graphs and picture graphs. Understand the concept of area and relate area to multiplication and division. Understand the concept of perimeter and distinguish between linear and area measures.

### Geometry

Reason with shapes and their attributes with emphasis on quadrilaterals. Partition shapes into parts with equal areas, and express the area of each part as a fraction of the whole.

# A Typical Mathematics Lesson



## For More Information . . .

### Websites

- *Everyday Mathematics* authors at the University of Chicago have developed an excellent website for parents - *Everyday Mathematics* Resource and Information Center - [everydaymath.uchicago.edu/parents](http://everydaymath.uchicago.edu/parents). Information about the research basis for *Everyday Mathematics* routines is included along with family letters, homework help, a math glossary and a list of grade-appropriate literature with math themes. *Note: At this time we do not subscribe to Everyday Mathematics Online.*
- The complete text of the 2011 mathematics framework can be downloaded from the Massachusetts Department of Elementary and Secondary Education website: [www.doe.mass.edu/frameworks/current.html](http://www.doe.mass.edu/frameworks/current.html)
- More information about units of study from *Contexts for Learning Mathematics* can be found at [www.contextsforlearning.com](http://www.contextsforlearning.com).
- More information about materials from *Developing Number Concepts* can be found at [www.mathperspectives.com/pub\\_dnc.html](http://www.mathperspectives.com/pub_dnc.html).

### Home Links

Homework often comes as a Home Link. Each Home Link includes a Family Note which describes the day's lesson and suggests ways to help your child complete the homework task(s). If you need more information about a specific Home Link, check the "Help with Home & Study Links" section of the *Everyday Mathematics* website.

### The Student Reference Book

Students all have access to the *Everyday Mathematics Student Reference Book* for third grade. Topics in the book include directions for all the games played in third grade; essays on each strand of mathematics which provide definitions, examples, a few practice problems, and review of topics from previous years; data tables for use with projects, and a glossary.