Reading Public Schools

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Mathematics Curriculum Guide **Kindergarten**

Kindergarten Priority Areas

Representing, relating, and operating on whole numbers, initially with sets of objects (CC/OA)

Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as 5 + 2 = 7 and 7 – 2 = 5. Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

Identifying, describing, analyzing, comparing, creating, and composing shapes (G)

Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Mathematical Practice Standards

- 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

Content Standards

Counting and Cardinality (CC)

- Know number names and the counting sequence
- Count to tell the number of objects.
- Compare numbers

Operations and Algebraic Thinking (OA)

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from

Number and Operations in Base Ten (NBT)

- Work with numbers 11–19 to gain foundations for place value

Measurement and Data (MD)

- Describe and compare measurable attributes
- Classify objects and count the number of objects in each category

Geometry (G)

- Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)
- Analyze, compare, create, and compose shapes

Concepts	Essential Questions	Resources
Counting and Cardinality (CC): **Know number names and the counting sequence**	• What are numbers? Why do we use them? • How can numbers from 1-20 be counted, read, and written? • What are the properties of numbers? • How does our number system function? • What is counting and how can it be used?	Developing Number Concepts (bk 1 ch 1) Math in Focus (ch. 1,2,4,5,6,8,9,12,14, 15, 17,18,19,20) Calendar Math
Counting and Cardinality (CC): **Count to tell the number of objects**	• What number name can be given to a set of objects? • How are numbers named and quantities related? • How can a numerical representation for given situations be shown?	Developing Number Concepts (bk 1 ch 1) Math in Focus (ch. 1,2,4,5,6,8,9,12,14,15, 17,18,20) Calendar Math
Counting and Cardinality (CC): **Compare numbers**	• What strategies can be used to compare numbers? • How can the numbers from 0-10 be compared and ordered?	Developing Number Concepts (bk 1) Math in Focus (ch 2,6,9,12,14,18,19)
Operations and Algebraic Thinking (OA): **Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from**	• What is addition? • What is subtraction? • What types of situations involve addition? • What types of situations involve subtraction? • What are the different ways to make a number? • How can simple attributes be repeated to create patterns? • What happens when we combine groups and what happens when we take groups apart?	Developing Number Concepts (bk 1 ch1, bk 2 ch 1,2,3) Math in Focus (ch. 4,5,6,9,12,14,15,17, 18,20) Calendar Math
Number and Operations in Base Ten (NBT): **Work with numbers 11–19 to gain foundations for place value**	• How can you add one ten and some ones to make the numbers from 11 to 19? • What are different ways to represent and record the teen numbers? • Why do we break numbers apart into tens and ones? • What is base ten and how can it be used?	Developing Number Concepts (bk 1) Math in Focus (ch 6,14) Calendar Math
Measurement and Data (MD): **Describe and compare measurable attributes**	• What are measurable attributes? • What is length, height, and weight? • How can objects be compared and ordered using length, height, and weight? • How do we tell which object is heavier or longer?	Developing Number Concepts (bk 1) Math in Focus (ch 1,3,5,11,15,16,19) Calendar Math
Measurement and Data (MD): **Classify objects and count the number of objects in each category**	• How can objects be classified and sorted? • What attributes can be used to sort objects into categories?	Developing Number Concepts (bk 1 ch 1) Math in Focus (ch 5,11,16) Calendar Math
Geometry (G): **Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)**	• What words can be used to describe the position and location of shapes? • How can shapes be named, described, and compared? • What is the difference between two-dimensional and three-dimensional shapes?	Math in Focus (ch 5,7,13,16) Calendar Math
Geometry (G): **Analyze, compare, create, and compose shapes**	• How can you describe shapes? • How are shapes different? How are shapes the same? • How can you represent your model?	Math in Focus (ch 7) Calendar Math

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Curriculum Guide Overview

Curriculum Guide	Curriculum guides are public documents that are aligned with the Massachusetts Department of Education Curriculum Frameworks. They focus on the set of standards that students will learn within certain disciplines at appropriate grade levels. Curriculum Guides are intended for teachers, parents, and the wider school community as an overview document of the course of study for the year.
Curriculum Map	Curriculum maps are internal documents utilized as planning tools for teachers. Curriculum maps keep a focus on the end-of-year standards and chart a course for the teaching and learning over the year. They are typically organized in a grade-level overview organized by month or marking period. Curriculum maps typically include; standards and expectations for the grade/content, essential skills/concepts, methods of assessment, and major content resources. Maps are never "done" as ongoing work of educators include revisions, additions, and revisits to the maps. They provide an overview for the year while also allowing educators to see a vertical picture of how the content develops as students progress through each grade.
Standards	The standards used as the foundation of our curriculum come directly from the Massachusetts Department of Education Curriculum Frameworks. State standards may be viewed here: http://www.doe.mass.edu/frameworks/
Priority Areas	The state of Massachusetts identifies critical areas that should be the priority focus of that grade's instructional time.
Practice Standards	Practice Standards are a set of skills/behaviors that are replicated in grades preK-12 and are currently found in Mathematics, Social Studies, and Science standards. These standards describe ways in which students engage with the content and the level of application grows increasingly complex as students progress vertically throughout their education.
Content Standards	The Content Standards describe what students should know and be able to do within each grade-level.
Essential Questions	Essential questions are questions that are not answerable with an easy answer or a simple instruction. The purpose of essential questions is to provide opportunities for inquiry into the learning and act as an umbrella to anchor the unit/lesson.
Resources	Resources identified in Curriculum Guides are not intended to be exhaustive, nor are they intended to be prescriptive. The resources identified may function as a menu of curriculum resources from which educators identify the most appropriate tools to utilized in their classrooms. More specifics about identified resources are identified within the curriculum map documents.