

Los Angeles Unified School District
Office of Curriculum, Instruction, and School Support
2010-2011 Elementary Mathematics Instructional Guide (MIG)

Introduction to the Document:

With the newly adopted enVisionMATH program, it has been found that a revision to the Elementary Mathematics Instructional Guide (MIG) was needed. The revision of the MIG is attached. Most critically it ensures the teaching and assessment of all grade level standards by the California Standards Testing dates. Additionally, the revised MIG is intended to be a one-stop tool for teachers, administrators, parents, and other school support personal. It blends CST blueprints, California State Mathematics Standards, enVisionMATH Topics which address those standards, and Instructional Blocks into one easy-to-read resource.

The MIG is a living document—it is neither set in stone for all time nor is it perfect. Teachers and other users are encouraged to provide on-going feedback as to its accuracy, usability, and content. Please go to www.lausd.net/math to the Announcement tab. Click on the **2010-2011 MIG** link, and share your comments and suggestions. Your participation in making this instructional guide a meaningful and useful tool for all is needed and appreciated.

Organization of the Document:

This Instructional Guide for Mathematics has been organized in several ways to provide flexibility to teachers in planning instruction. Teachers and other users are encouraged to review the various versions and to choose the one that best fits their instructional planning needs.

Under the section *Organized by Standards*, the standards are listed as they are found in the Mathematics Framework for California Public Schools. In this section, teachers and other users will be able to see at a glance the mathematics standard number and wording for the grade level, the number of questions on the CST for each standard (applicable for 2nd through 6th grade), in which textbook topics (chapters) the standards can be found, and in which Instructional Block(s) the standard will be taught and assessed. For quick identification, the essential key standards, as determined by the Mathematics Framework, are noted by **bold type** and a key ↔ symbol.

Under the section *Organized by Instructional Block*, the standards are listed in a developmental sequence. A significant difference with this section versus the organization by standards is that, in some cases, portions of the standards are lined-out or modified for that particular Instructional Block (IB) as that part of the standard is not taught during that time. While the entire standard will be taught and assessed by the time the CST is given, some longer, more complex standards are parsed out over multiple IB's to allow students

time to develop their understanding of the concept and the essential skills they will need in order to be successful. Please note the following examples:

Second Grade example:

- Number Sense 1.2 asks student to: Use words, models, and expanded forms (e.g., $45 = 4 \text{ tens} + 5$) to represent numbers (to 1,000).
- How NS1.2 will look in IB#1: Use words, models, and expanded forms (e.g., $45 = 4 \text{ tens} + 5$) to represent numbers (to ~~1,000~~ 100).
- How NS1.2 will look in IB#3: Use words, models, and expanded forms (e.g., $45 = 4 \text{ tens} + 5$) to represent numbers (to 1,000).

Fourth Grade example:

- Number Sense 2.1 asks students to: Estimate and compute the sum or difference of whole numbers and positive decimals to two places.
- How NS2.1 will look in IB#1: Estimate and compute the sum or difference of whole numbers ~~and positive decimals to two places.~~
- How NS2.1 will look in IB#2: Estimate and compute the sum or difference of whole numbers and positive decimals to two places.

As in the organized by standards section, this section allows teachers and other users to be able to see at a glance the mathematics standard number and wording for the grade level, the number of questions on the CST for each standard (applicable for 2nd through 6th grade), in which textbook topics (chapters) the standards can be found, and in which Instructional Block(s) the standard will be taught and assessed. Again for quick identification, the essential key standards, as determined by the Mathematics Framework, are noted by bold type and a key symbol.

Symbols and Footnotes:

Additional key information has been embedded into this guide to assist teachers and others in instructional decision-making. Next to the numbers listed in the *enVisionMATH* topics section, occasionally there will be a symbol indicating that a topic has lessons that address standards outside of the targeted grade level. This is designed to assist in instructional decision-making when choosing lessons to prepare and present based on student needs. Please note the following examples:

First Grade example:

2† indicates that this topic contains lessons that include Kindergarten standards, whereas 18‡ indicates that this topic contains lessons that include Second grade standards.

Fifth Grade example:

5‡ indicates that this topic contains lessons that include Fourth grade standards, whereas 14⊕ indicates that this topic contains lessons that include Sixth grade standards.

All symbols used in the guide are defined in the footnote section of the document on every page.

General Calendar for Instruction and Assessment:

It is imperative to have this information in the hands of our teachers, administrators, and instructional support staff, especially those working at multi-track schools, prior to the beginning of the 2010-2011 school year. However, as of the publication of this document, all assessment dates listed are currently TENTATIVE pending the new Periodic Assessment contract. At this time, *the schedule included in this guide is meant for initial planning purposes only*. As contracts are finalized and dates are officially set, updates to the MIG will be forthcoming. As updates occur, they will be sent electronically to all Local District mathematics contacts for distribution to all schools. Updates will also be posted on the LAUSD PreK-12 Mathematics website: www.lausd.net/math. Please check this site regularly for updates. The instructional calendar includes the furlough days for 2010-2011.

The first three Instructional Blocks (IB) and their periodic assessments will reflect the standards or portions of the standards as indicated in the *Organized by Instructional Block* portion of the guide. The guide is designed to ensure full instruction and assessment of the grade level standards by the CST window.

The fourth IB is scheduled for after the CST window. This block of time is intended for teachers to use, based on student data, to strengthen areas of weakness the students may still have (intervention) or to “step up” to the next grade level. This is where out-of-grade-level lessons which may have been skipped could be taught or other mathematical concepts could be deepened to support the students’ success in the next grade level.

Grade Level Expectations:

Included on the first page of each grade level guide is a boxed statement of grade level expectations. This is taken directly from the Mathematics Framework for California Public Schools. This provides teachers, parents, students, administrators, and other instructional support staff an overview of what students should accomplish by the end of the targeted grade level.

Using the Mathematics Instructional Guide:

The guide can be thought of as a menu. It cannot be expected that one would do every lesson and activity from the instructional resources provided. To try to teach every lesson or use every activity would be like ordering everything on a menu for a single meal. It is not a logical option. Nor is it possible given the number of instructional days and the quantity of resources. That is why the document is called a "Mathematics Instructional Guide" and not a "Mathematics Pacing Plan." And, like a menu, teachers select, based on instructional data, which lessons best fit the needs of their students – sometimes students need more time with a concept and at other times, less.

An effective way to use this guide is to review the mathematical concepts to be taught in each Instructional Block. From there, teachers would map out how much time they feel is needed to teach the concepts within the block based on the data of their students' needs. For example, some classes may need more time devoted to developing division concepts, while another class at the same grade level may need more focused time on understanding the functions of fractions within an Instructional Block.

The starting point for instructional planning is the standards. The textbook resources are just the first tools for teachers in helping to build mathematical understanding. Like going to a restaurant specializing in customer service, there may be times one wishes to order "off-the-menu". There are hundreds of resources available, both publisher- and teacher-created, that may be used to best teach a concept or skill. Collaborative planning, both within and among grade levels, is strongly encouraged in order to design effective instructional programs for students.

Input and Feedback

This is a living document. We strongly encourage teachers and other users of this document to provide on-going feedback as to its accuracy, usability, and content. Please go to www.lausd.net/math, on the Announcement tab click on the **2010-2011 MIG** link, and share your comments and suggestions. Your participation in making this instructional guide a meaningful and useful tool for all is needed and appreciated.

Instructional Components for PreK-12 Mathematics Program 2010-11

Kindergarten – 5th Grade General Calendar*

Calendar	Activity	Track	Instructional Block 1	Instructional Block 2	Instructional Block 3	Instructional Block 4
Single Track	Instruction	---	Sept. 13-Nov. 18	Nov. 19; Nov. 29-Dec. 17; Jan 10-Feb. 17	Feb. 18-Apr. 15	Apr. 25-June 24
	Assessment		Nov. 16-18*	Feb. 15-17*	Apr. 13-15*	N/A
Three Track	Instruction	A	Aug. 30-Oct. 21	Oct. 22-Nov. 19; Nov. 29-Dec. 16	Dec. 17-22; Mar. 7-Apr. 28	Apr. 29-June 30
	Assessment		Oct. 19-21*	Dec. 14-16*	Apr. 26-28*	N/A
	Instruction	B	July 6-Aug. 26	Aug. 27; Oct. 25-Nov. 19; Nov. 29-Dec. 16	Dec. 17-22; Jan. 3-Feb. 25	Feb. 28-Mar. 4; May 5-June 30
	Assessment		Aug. 24-26*	Dec. 14-16*	Feb. 23-25*	N/A
	Instruction	C	July 6-Aug. 26	Aug. 27-Oct. 20	Oct. 21-22; Jan. 3-Feb. 18	Feb. 28-May 3
	Assessment		Aug. 24-26*	Oct. 18-20*	Feb. 16-18*	N/A
Four track	Instruction	A	Aug. 17-Oct. 21	Oct. 22-Nov. 19; Nov. 29-Dec. 17; Feb. 16-Mar. 3	Mar. 4-Apr. 28	Apr. 29-June 28
	Assessment		Oct. 19-21*	Mar. 1-3*	Apr. 26-28*	N/A
	Instruction	B	July 6-Sept. 10	Sept. 13-29; Nov. 15-19; Nov. 29-Dec. 17; Jan 3-20	Jan. 21-Mar. 17	Mar. 18-25; May 9-June 28
	Assessment		Sept. 8-10*	Jan. 18-20*	Mar. 15-17*	N/A
	Instruction	C	July 6-Aug. 13; Sept. 30-Oct. 28	Oct. 29-Nov. 19; Nov. 29-Dec. 17; Jan. 3-20	Jan. 21-Feb. 11; Mar. 28-Apr. 28	Apr. 29-June 28
	Assessment		Oct. 26-28*	Jan. 18-20*	Apr. 26-28*	N/A
	Instruction	D	July 6-Sept. 10	Sept. 13-Nov. 8	Nov. 9-10; Jan. 3-Feb. 17	Feb. 18: Feb. 28-May 6
	Assessment		Sept. 8-10*	Nov. 4-5, 8*	Feb. 15-17*	N/A

*All dates listed are currently TENTATIVE pending new Periodic Assessment contract. This schedule is meant for initial planning purposes only. Updates will be forthcoming. For updates, please check the LAUSD PreK-12 Mathematics website: www.lausd.net/math. The calendar reflects the furlough days for 2010-2011.

Kindergarten

Revision for 2010-11 MIG Topics and Instructional Components*

Kindergarten	Instructional Block 1			Instructional Block 2				Instructional Block 3				Instructional Block 4				
Topics addressing Standards	1-5			6-10				11-16				Step up to 1 st grade				
Assessment windows: Single Track*	November 16, 17, 18			February 15, 16, 17				April 13, 14, 15				N/A				
Assessment windows: 3 Track*	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
	Oct. 19-21	Aug. 24-26	Aug. 24-26	Dec. 14-16	Dec. 14-16	Oct. 18-20	Apr. 26-28	Feb. 23-25	Feb. 16-18	N/A	N/A	N/A	N/A	N/A	N/A	
Assessment windows: 4 Track*	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
	Oct. 19-21	Sept. 8-10	Oct. 26-28	Sept. 8-10	March 1-3	Jan. 18-20	Jan. 18-20	Nov. 4-8	Apr. 26-28	March 15-17	Apr. 26-28	Feb. 15-17	N/A	N/A	N/A	N/A

By the end of kindergarten, students understand small numbers, quantities, and simple shapes in their everyday environment. They count, compare, describe and sort objects, and develop a sense of properties and patterns.

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KINDERGARTEN

ORGANIZED BY STANDARDS

Revision for 2010-11 MIG Topics and Instructional Components

By the end of kindergarten, students understand small numbers, quantities, and simple shapes in their everyday environment. They count, compare, describe and sort objects, and develop a sense of properties and patterns.

Kindergarten Standard Number	Kindergarten Standard Wording	<u>enVisionMATH</u> TOPIC*	IB 1	IB 2	IB 3	IB 4
↔NS 1.0	Students understand the relationship between numbers and quantities (i.e., that a set of objects has the same number of objects in different situations regardless of its position or arrangement):	3, 5	✓			
NS 1.1	Compare two or more sets of objects (up to ten objects in each group) and identify which set is equal to, more than, or less than the other.	3, 5	✓			
NS 1.2	Count, recognize, represent, name, and order a number of objects (up to 30).	2, 3, 4, 5, 8, 9	✓	✓		
NS 1.3	Know that the larger numbers describe sets with more objects in them than the smaller numbers have.	5, 9	✓	✓		
NS 2.0	Students understand and describe simple additions and subtractions:	6, 7		✓		
↔NS 2.1	Use concrete objects to determine the answers to addition and subtraction problems (for two numbers that are each less than 10).	6, 7		✓		
NS 3.0	Students use estimation strategies in computation and problem solving that involve numbers that use the ones and tens places:	9		✓		
NS 3.1	Recognize when an estimate is reasonable.	9, 12		✓	✓	
AF 1.0	Students sort and classify objects:	1	✓			

* based on *enVisionMATH* Overview and Implementation Guide.

↔**Bold** standards are essential Key Standards for the grade level.

~~Double lined through~~ are portions of the standard not taught in that topic. Full coverage of the standard will occur in later topics.

Italics indicate partial coverage of a longer standard. Full coverage of the standard will occur in later topics.

✓ = Instructional Block in which the standard is taught according to LAUSD Mathematics Instructional Guide.

KINDERGARTEN

Kindergarten Standard Number	Kindergarten Standard Wording	<i>enVision</i> MATH TOPIC*	IB 1	IB 2	IB 3	IB 4
↔ AF 1.1	Identify, sort, and classify objects by attribute and identify objects that do not belong to a particular group (e.g., all these balls are green, those are red).	1	✓			
↔ MG 1.0	Students understand the concept of time and units to measure it; they understand that objects have properties, such as length, weight, and capacity, and that comparisons may be made by referring to those properties:	12, 13, 14			✓	
MG 1.1	Compare the length, weight, and capacity of objects by making direct comparisons with reference objects (e.g., note which object is shorter, longer, taller, lighter, heavier, or holds more).	12, 13			✓	
MG 1.2	Demonstrate an understanding of concepts of time (e.g., morning, afternoon, evening, today, yesterday, tomorrow, week, year) and tools that measure time (e.g., clock, calendar).	14, 15			✓	
MG 1.3	Name the days of the week.	15			✓	
MG 1.4	Identify the time (to the nearest hour) of everyday events (e.g., lunch time is 12 o'clock; bedtime is 8 o'clock at night).	14			✓	
MG 2.0	Students identify common objects in their environment and describe the geometric features:	11			✓	
MG 2.1	Identify and describe common geometric objects (e.g., circle, triangle, square, rectangle, cube, sphere, cone).	11			✓	
MG 2.2	Compare familiar plane and solid objects by common attributes (e.g., position, shape, size, roundness, number of corners).	11			✓	
SDAP 1.0	Students collect information about objects and events in their environment:	16			✓	

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KINDERGARTEN

Kindergarten Standard Number	Kindergarten Standard Wording	<u>enVisionMATH</u> TOPIC*	IB 1	IB 2	IB 3	IB 4
SDAP 1.1	Pose information questions; collect data; and record the results using objects, pictures, and picture graphs.	4, 16	✓		✓	
SDAP 1.2	Identify, describe, and extend simple patterns (such as circles or triangles) by referring to their shapes, sizes, or colors.	10		✓		

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KINDERGARTEN

ORGANIZED BY INSTRUCTIONAL BLOCK

Revision for 2010-11 MIG Topics and Instructional Components

By the end of kindergarten, students understand small numbers, quantities, and simple shapes in their everyday environment. They count, compare, describe and sort objects, and develop a sense of properties and patterns.

Kindergarten Standard Number	Kindergarten Standard Wording	<i>enVision</i> MATH TOPIC*	IB 1	IB 2	IB 3	IB 4
AF 1.0	Students sort and classify objects:	1	✓			
↔ AF 1.1	Identify, sort, and classify objects by attribute and identify objects that do not belong to a particular group (e.g., all these balls are green, those are red).	1	✓			
NS 1.2	Count, recognize, represent, name, and order a number of objects (up to 30 1 to 5).	2	✓			
↔ NS 1.0	Students understand the relationship between numbers and quantities (i.e., that a set of objects has the same number of objects in different situations regardless of its position or arrangement):	3	✓			
NS 1.1	Compare two or more sets of objects (up to ten objects in each group) and identify which set is equal to, more than, or less than the other.	3	✓			
NS 1.2	Count, recognize, represent, name, and order a number of objects (up to 30 0 to 5).	3	✓			
NS 1.2	Count, recognize, represent, name, and order a number of objects (up to 30 up to 10).	4	✓			

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KINDERGARTEN

Kindergarten Standard Number	Kindergarten Standard Wording	<i>enVision</i> MATH TOPIC*	IB 1	IB 2	IB 3	IB 4
SDAP 1.1	Pose information questions; collect data; and record the results using objects, pictures, and picture graphs.	4	✓			
↔ NS 1.0	Students understand the relationship between numbers and quantities (i.e., that a set of objects has the same number of objects in different situations regardless of its position or arrangement):	5	✓			
NS 1.1	Compare two or more sets of objects (up to ten objects in each group) and identify which set is equal to, more than, or less than the other.	5	✓			
NS 1.2	Count, recognize, represent, name, and order a number of objects (up to 30 <i>up to 10</i>).	5	✓			
NS 1.3	Know that the larger numbers describe sets with more objects in them than the smaller numbers have.	5	✓			
NS 2.0	Students understand and describe simple additions and subtractions :	6		✓		
↔ NS 2.1	Use concrete objects to determine the answers to addition and subtraction problems (for two numbers that are each less than 10).	6		✓		
NS 2.0	Students understand and describe simple additions and subtractions :	7		✓		
↔ NS 2.1	Use concrete objects to determine the answers to addition and subtraction problems (for two numbers that are each less than 10).	7		✓		
NS 1.2	Count, recognize, represent, name, and order a number of objects (up to 30 <i>up to 20</i>).	8		✓		
NS 1.2	Count, recognize, represent, name, and order a number of objects (up to 30).	9		✓		
NS 1.3	Know that the larger numbers describe sets with more objects in them than the smaller numbers have.	9		✓		

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Kindergarten Standard Number	Kindergarten Standard Wording	<i>enVision</i> MATH TOPIC*	IB 1	IB 2	IB 3	IB 4
NS 3.0	Students use estimation strategies in computation and problem solving that involve numbers that use the ones and tens places:	9		✓		
NS 3.1	Recognize when an estimate is reasonable.	9		✓		
↔SDAP 1.2	Identify, describe, and extend simple patterns (such as circles or triangles) by referring to their shapes, sizes, or colors.	10		✓		
MG 2.0	Students identify common objects in their environment and describe the geometric features:	11			✓	
MG 2.1	Identify and describe common geometric objects (e.g., circle, triangle, square, rectangle, cube, sphere, cone).	11			✓	
MG 2.2	Compare familiar plane and solid objects by common attributes (e.g., position, shape, size, roundness, number of corners).	11			✓	
NS 3.1	Recognize when an estimate is reasonable.	12			✓	
↔MG 1.0	Students understand the concept of time and units to measure it; they understand that objects have properties, such as length, weight, and capacity, and that comparisons may be made by referring to those properties:	12			✓	
MG 1.1	Compare the length, weight, and capacity of objects by making direct comparisons with reference objects (e.g., note which object is shorter, longer, taller, lighter, heavier, or holds more).	12			✓	
↔MG 1.0	Students understand the concept of time and units to measure it; they understand that objects have properties, such as length, weight, and capacity, and that comparisons may be made by referring to those properties:	13			✓	

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MG 1.1	Compare the length, weight, and capacity of objects by making direct comparisons with reference objects (e.g., note which object is shorter, longer, taller, lighter, heavier, or holds more).	13			✓	
↔ MG 1.0	Students understand the concept of time and units to measure it; they understand that objects have properties, such as length, weight, and capacity, and that comparisons may be made by referring to those properties:	14			✓	
MG 1.2	Demonstrate an understanding of concepts of time (e.g., morning, afternoon, evening, today, yesterday, tomorrow, week, year) and tools that measure time (e.g., clock, calendar).	14			✓	
MG 1.4	Identify the time (to the nearest hour) of everyday events (e.g., lunch time is 12 o'clock; bedtime is 8 o'clock at night).	14			✓	
MG 1.2	Demonstrate an understanding of concepts of time (e.g., morning, afternoon, evening, today, yesterday, tomorrow, week, year) and tools that measure time (e.g., clock, calendar).	15			✓	
MG 1.3	Name the days of the week.	15			✓	
SDAP 1.0	Students collect information about objects and events in their environment:	16			✓	
SDAP 1.1	Pose information questions; collect data; and record the results using objects, pictures, and picture graphs.	16			✓	

* based on *enVision*MATH Overview and Implementation Guide.

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