April 8, 2013 Staples High School

WESTPORT BOARD OF EDUCATION

***AGENDA**

(Agenda Subject to Modification in Accordance with Law)

PUBLIC SESSION/PLEDGE OF ALLEGIANCE:
7:30 p.m., Staples High School, Cafeteria B (Room 301)

ANNOUNCEMENTS FROM BOARD AND ADMINISTRATION

PUBLIC QUESTIONS/COMMENTS ON NON-AGENDA ITEMS (15 MINUTES)

MINUTES: March 18, 2013

PRESENTATION: Common Core Standards – Mathematics	(10 Minutes)	(Encl.)	Ms. Bell Mr. Corbo

DISCUSSION/ACTION:

1. Five Day, Full Day Kindergarten	(45 Minutes)	(Encl.)	Dr. Landon
2. State-Mandated Teacher/Administrator Evaluation Plans	(20 Minutes)	(Encl.)	Ms. Cion
3. S.T.E.M. for the Middle Schools, 2013-14 School Year	(20 Minutes)	(Encl.)	Dr. Landon Dr. Rosen Ms. Szabo Dr. Scheetz
4. School Calendar Modification: June 21 and June 24	(20 Minutes)	(Encl.)	Dr. Landon
5. Underground Fuel Oil Storage Tank Removal Replacement	(20 Minutes)	(Encl.)	Ms. Harris
6. Acceptance of Gifts	(10 Minutes)	(Encl.)	Dr. Landon

DISCUSSION:

1. Quarterly Financial Report: 7/1/2012 – 3/31/2013	(20 Minutes)	(Encl.)	Ms. Harris

ADJOURNMENT

*A 2/3 vote is required to go to executive session, to add a topic to the agenda of a regular meeting, or to start a new topic after 10:30 p.m.
The meeting can also be viewed on cable TV on channel 78; AT&T channel 99 and by video stream @www.westport.k12.ct.us

PUBLIC PARTICIPATION WELCOME USING THE FOLLOWING GUIDELINES:

- Comment on non-agenda topics will occur during the first 15 minutes *except* when staff or guest presentations are scheduled.
- Board will not engage in dialogue on non-agenda items.
- Public may speak as agenda topics come up for discussion or information.
- Speakers on non-agenda items are limited to 2 minutes each, except by prior arrangement with chair.
- Speakers on agenda items are limited to 3 minutes each, except by prior arrangement with chair.
- Speakers must give name and use microphone.
- Responses to questions may be deferred if answers not immediately available.
- Public comment is normally not invited for topics listed for action after having been publicly discussed at one or more meetings.

WESTPORT PUBLIC SCHOOLS

ELLIOTT LANDON
Superintendent of Schools

110 MYRTLE AVENUE
WESTPORT, CONNECTICUT 06880
TELEPHONE: (203) 341-1010
FAX: (203) 341-1029

To: Members of the Board of Education

From: Elliott Landon

Subject: Common Core Standards - Mathematics

Date: April 8, 2013

Janna Bell, Principal, Coleytown Elementary School and Frank Corbo, Department Chair, Mathematics, K-12, will present briefly on the above-referenced subject at our meeting of April 8.

To assist you in preparation for that presentation, I have included the Common Core Standards information and expectations applicable to Kindergarten as an attachment to this memorandum. If you wish to explore the CCS at the other grade levels, 1-12, you may go to the following link:

http://www.sde.ct.gov/sde/cwp/view.asp?a=2710&q=322592#mathematics2

Once on this site, you may examine the following:

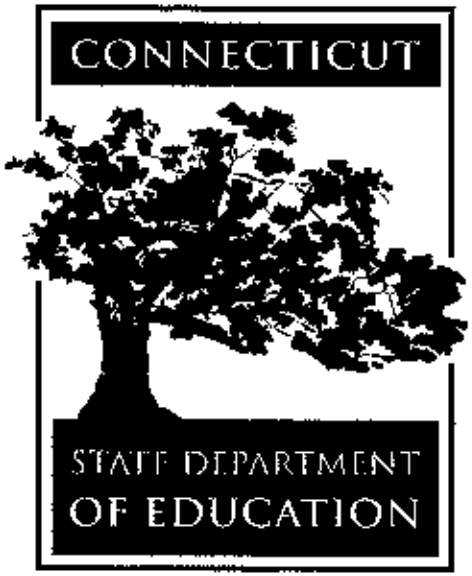
K-12 Math Units of Study

- Kindergarten Illustrated Practices, Pacing Guide, Units 1-9
- Grade 1 Illustrated Practices, Pacing Guide, Units 1-8
- Grade 2 Illustrated Practices, Pacing Guide, Units 1-10
- Grade 3 Illustrated Practices, Pacing Guide, Units 1-8
- Grade 4 Illustrated Practices, Pacing Guide, Units 1-8
- Grade 5 Illustrated Practices, Pacing Guide, Units 1-8
- Grade 6 Illustrated Practices, Pacing Guide, Units 1-7
- Grade 7 Illustrated Practices, Pacing Guide, Units 1-7
- Grade 8 Illustrated Practices, Pacing Guide, Units 1-7
- High School Geometry Units 1-7
- High School Algebra 1 Units 1-8
- High School Algebra 2 Units 1-6

Connecticut Standards for Mathematics

(CCSS)

DRAFT



Standards for Mathematical Practice

Kindergarten

Kindergarten Standards for Mathematical Practice The K-12 Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. This page gives examples of what the practice standards look like at the specified grade level.	
Standards	***Explanations and Examples***
Students are expected to: **1. Make sense of problems and persevere in solving them.**	In Kindergarten, students begin to build the understanding that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" or they may try another strategy.
Students are expected to:. **2. Reason abstractly and quantitatively.**	Younger students begin to recognize that a number represents a specific quantity. Then, they connect the quantity to written symbols. Quantitative reasoning entails creating representation of a problem while attending to the meanings of the quantities.
Students are expected to: **3. Construct viable arguments and critique the reasoning of others.**	Younger students construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like "How did you get that?" and "Why is that true?" They explain their thinking to others and respond to others' thinking.
Students are expected to: **4. Model with mathematics.**	In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.
Students are expected to: **5. Use appropriate tools strategically.**	Younger students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, kindergarteners may decide that it might be advantageous to use linking cubes to represent two quantities and then compare the two representatives side-by-side.
Students are expected to: **6. Attend to precision.**	As kindergarteners begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and in their own reasoning.
Students are expected to: **7. Look for and make use of structure.**	Younger students begin to discern a pattern or structure. For instance, students recognize the pattern that exists in the teen numbers; every teen number is written with a 1 (representing one ten) and ends with the digit that is first stated. They also recognize that $3 + 2 = 5$ and $2 + 3 = 5$.
Students are expected to: **8. Look for and express regularity in repeated reasoning.**	In the early grades, students notice repetitive actions in counting and computation, etc. For example, they may notice that the next number in a counting sequence is one more. When counting by tens, the next number in the sequence is "ten more" (or one more group of ten). In addition, students continually check their work by asking themselves, "Does this make sense?"

Kindergarten Pacing Guide

Unit Title	Pacing	Standards		
1. Counting and Matching Numerals 0-5 with Comparing	4 weeks	K.CC.1 **K.CC.3** **K.CC.4**	K.CC.5 **K.CC.6** K.CC.7	K.MD.3
2. Counting and Match Numerals 6-10 with Comparing	3 weeks	K.CC.1 **K.CC.3** **K.CC.4**	K.CC.5 **K.CC.6** K.CC.7	K.MD.3
3. Counting and Matching Numerals 11 - 20	4 weeks	K.CC.1 K.CC.2 **K.CC.3**	**K.CC.4** K.CC.5	
4. Fluency with Addition & Subtraction within 5	4 weeks	K.CC.1 K.CC.2 **K.CC.3**	K.CC.4 K.CC.5 **K.OA.1**	K.OA.2 **K.OA.3** **K.OA.5**
5. Exploring Addition & Subtraction within 10	4 weeks	K.CC.1 K.CC.2 **K.CC.3**	K.CC.4 K.CC.5 **K.OA.1**	K.OA.2 **K.OA.3** K.OA.4 **K.OA.5**
6. Teen Numbers (11 – 19) & Counting to 100	4 weeks	K.CC.1 K.CC.2 **K.CC.4**	K.CC.5 **K.OA.1** K.NBT.1	
7. Identify and Describe 2-D and 3-D Shapes	2 weeks	K.MD.3 **K.G.1** K.G.2	K.G.3 **K.G.4** **K.G.5**	
8. Compare, Analyze, and Compose 2-D and 3-D Shapes	2 weeks	**K.MD.2** **K.G.1** K.G.2	K.G.3 **K.G.4** **K.G.5**	K.G.6
9. Measurement by Direct Comparison	4 weeks	K.MD.1 **K.MD.2**		

CT Mathematics Unit Planning Organizers are designed to be a resource for developers of curriculum. The documents feature standards organized in units with key concepts and skills identified, and a suggested pacing guide for the unit. The standards for Mathematical Practice are an integral component of CT Standards (CCSS) and are evident highlighted accordingly in the units.

The information in the unit planning organizers can easily be placed into the curriculum model in used at the local level during the revision process. It is expected that local and/or regional curriculum development teams determine the "Big Ideas" and accompanying "Essential Questions" as they complete the units with critical vocabulary, suggested instructional strategies, activities and resources.

Note that all standards are important and are eligible for inclusion on the large scale assessment to be administered during the 2014-15 school year. The Standards were written to emphasize correlations and connections within mathematics. The *priority* and *supporting* standard identification process emphasized that coherence. Standards were identified as *priority* or *supporting* based on the critical areas of focus described in the CT Standards, as well as the connections of the content within and across the K-12 domains and conceptual categories. In some instances, a standard identified as *priority* actually functions as a supporting standard in a particular unit. **No stratification or omission of practice or content standards is suggested by the system of organization utilized in the units.**

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 1 - Counting and Matching Numerals 0-5 with Comparing

Pacing: 4 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices

Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning.

Practices in bold are to be emphasized in the unit.

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.

Domain and Standards Overview

Counting and Cardinality K.CC

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

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
K.CC.1. Count to 100 by ones and by tens.	K.CC.1.The emphasis of this standard is on the counting sequence (rote counting). When counting by ones, students need to understand that the next number in the sequence is one more. When counting by tens, the next number in the sequence is "ten more" (or one more group of ten). Instruction on the counting sequence should be scaffolded (e.g., 1-10, then 1-20, etc.). Counting should be reinforced throughout the day, not in isolation. Examples: • Count the number of chairs of the students who are absent. • Count the number of stairs, shoes, etc. • Counting groups of ten such as "fingers in the classroom" (ten fingers per student). When counting orally, students should recognize the patterns that exist from 1 to 100. They should also recognize the patterns that exist when counting by 10s.
K.CC3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	K.CC.3. Students should be given multiple opportunities to count objects and recognize that a numeral represents a specific quantity. Once this is established, students begin to read and write numerals (numerals are the symbols for the quantities). The emphasis should first be on quantity and then connecting quantities to the written symbols. **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.CC.3. Continued • A sample unit sequence might include: 1. Counting up to 20 objects in many settings and situations over several weeks. 2. Beginning to recognize, identify, and read the written numerals, and match the numerals to given sets of objects. 3. Writing the numerals to represent counted objects. • Since the teen numbers are not written as they are said, teaching the teen numbers as one group of ten and extra ones is foundational to understanding both the concept and the symbol that represents each teen number. For example, when focusing on the number "14," students should count out fourteen objects using one-to-one correspondence and then use those objects to make one group of ten and four extra ones. Students should connect the representation to the symbol "14."
K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. **a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.** **b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.** **c. Understand that each successive number name refers to a quantity that is one larger.**	K.CC.4. This standard focuses on one-to-one correspondence and how cardinality connects with quantity. • For example, when counting three bears, the student should use the counting sequence, "1-2-3," to count the bears and recognize that "three" represents the group of bears, not just the third bear. A student may use an interactive whiteboard to count objects, cluster the objects, and state, "This is three". (Cardinality tells "how many".) In order to understand that each successive number name refers to a quantity that is one larger, students should have experience counting objects, placing one more object in the group at a time. **Continued on next page**

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 1 - Counting and Matching Numerals 0-5 with Comparing

Priority and Supporting CCSS	Explanations and Examples*
	K.CC.4. Continued • For example, using cubes, the student should count the existing group, and then place another cube in the set. Some students may need to re-count from one, but the goal is that they would count on from the existing number of cubes. S/he should continue placing one more cube at a time and identify the total number in order to see that the counting sequence results in a quantity that is one larger each time one more cube is placed in the group. • A student may use a clicker (electronic response system) to communicate his/her count to the teacher.
K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	K.CC.5. Students should develop counting strategies to help them organize the counting process to avoid re-counting or skipping objects. Examples: • If items are placed in a circle, the student may mark or identify the starting object. • If items are in a scattered configuration, the student may move the objects into an organized pattern. • Some students may choose to use grouping strategies such as placing objects in twos, fives, or tens (note: this is not a kindergarten expectation). • Counting up to 20 objects should be reinforced when collecting data to create charts and graphs. • A student may use a clicker (electronic response system) to communicate his/her count to the teacher.

Priority and Supporting CCSS	Explanations and Examples*
K.CC.6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.* * Include groups with up to ten objects.	K.CC.6 Students should develop a strong sense of the relationship between quantities and numerals before they begin comparing numbers. Other strategies: • Matching: Students use one-to-one correspondence, repeatedly matching one object from one set with one object from the other set to determine which set has more objects. • Counting: Students count the objects in each set, and then identify which set has more, less, or an equal number of objects. • Observation: Students may use observation to compare two quantities (e.g., by looking at two sets of objects, they may be able to tell which set has more or less without counting). This method may not always be as reliable as counting or matching. • Observations in comparing two quantities can be accomplished through daily routines of collecting and organizing data in displays. Students create object graphs and pictographs using data relevant to their lives (e.g., favorite ice cream, eye color, pets, etc.). Graphs may be constructed by groups of students as well as by individual students. • Benchmark Numbers: This would be the appropriate time to introduce the use of 0, 5 and 10 as benchmark numbers to help students further develop their sense of quantity as well as their ability to compare numbers. o Students state whether the number of objects in a set is more, less, or equal to a set that has 0, 5, or 10 objects.
K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.	K.CC.7. Given two numerals, students should determine which is greater or less than the other.

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Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 1 - Counting and Matching Numerals 0-5 with Comparing

Priority and Supporting CCSS	Explanations and Examples*
K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by\ count. ** ** Limit category counts to be less than or equal to 10.	K.MD.3. Possible objects to sort include buttons, shells, shapes, beans, etc. After sorting and counting, it is important for students to: • explain how they sorted the objects; • label each set with a category; • answer a variety of counting questions that ask, "How many …"; and • compare sorted groups using words such as, "most", "least", "alike" and "different".

Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels
Number	COUNT (objects)	1
Relationships (zero to 20)	SAY numbers (in order)	2
• Number and quantity	PAIR (each object with one number)	3
• Counting and cardinality	UNDERSTAND	3
• Number names in standard order	• (last number name tells objects counted) • (number of objects is the same regardless of arrangement) • (number of objects is the same regardless of order) • (each successive number refers to a quantity that is one larger)	
• Number comparisons (zero to 10)	IDENTIFY(compare) groups of objects	1
o Greater than o Less than o Equal to	WRITE (numbers zero to twenty)	1
Written numerals zero to twenty	REPRESENT (number of objects with written numeral)	3

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Essential Questions

1. Why do we count?
2. How are numerals used?
3. How can two quantities be related?

Corresponding Big Ideas

1. Counting tells how many there are in a group regardless of their arrangement. The last number said when counting tells the total number of objects counted.
2. Numerals are the symbols we read and write to communicate quantities (numbers).
3. One quantity is either greater than, less than or equal to other.

Standardized Assessment Correlations (State, College and Career)

Expectations for Learning (in development)
This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

Test Mode: Administer one on one

Teacher directions: Read bolded statement aloud to child and record results on Interview Recording sheet.

Rote Count

TASK 1

a) Teacher: Count out loud starting at 1 and count as high as you can.

Record highest number student *accurately* counts to.
Ex: Child counts from 1-15 accurately, then skips 16. Stop student and record last correct number stated.

b) Teacher: Count out loud by tens starting at 10 and count as high as you can.

Record highest multiple of 10 student *accurately* counts to.
Ex: Child counts from 10 -50 accurately, then skips 60. Stop student and record last correct number stated.

TASK 2

Preparation: Teacher shows student a group of four objects.

Teacher: How many are there?

Observe and record (✔ or -).

Student correctly counts 4 objects.

Note: This item can be repeated for any quantity up to 5.

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 3

Preparation: Provide child with a group of objects (bears, counters, etc.).

Teacher: Count out 5 bears. Say the numbers aloud as you count the bears.

When finished counting, ask the child to restate how many he/she has counted.

Observe and record (✔ or -):

a. Uses one-to-one correspondence
b. Says number names in the correct order
c. States the last number counted as the total (cardinality of number)

TASK 4
Preparation: Teacher arranges 4 bears (or counters) in a circle or in a scattered arrangement.

Teacher: Teacher asks, **"How many bears (counters) are there?"**

Observe and record (✔ or -):
Child correctly counts 4 objects arranged in a circle or scattered configuration, using a strategy to keep track of items already counted.

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Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 5

Preparation: Teacher shows students a group of three objects and a group of four objects.

a. Teacher: Point to the group that has more. *Observe and record (✔ or -).*

b. Teacher: Point to the group that has less? *Observe and record (✔ or -).*

c. Teacher: How do you know?

Student counts or uses a matching strategy to align the objects in each group in a one-to- one correspondence comparison.

TASK 6

Preparation: Teacher shows student a group of two objects and a group of five objects (one at a time). Teacher has numeral cards 1-5 spread out on the table in random order.

Teacher: Count how many objects are in the first group. Point to the numeral that matches the number you counted. Repeat for the second group.

Observe and record (✔ or -).

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 7

Preparation: Teacher shows student a group of three objects and has students count the objects to determine how many are in the group. Teacher places another object in the group and asks the question below.

Teacher: How many objects are now in the group?

Observe and record (✓+, ✓, or -).

- ✓+ student correctly states 4 without having to recount the set of objects
- ✓ student correctly states 4, however has to recount the set of objects
- - student gave incorrect answer.

Note: This item can be repeated for additional numbers within 5.

TASK 8

Preparation: Teacher has a set of numeral cards, 1-5 and some counters. Teacher or student draws 2 cards from the set or numeral cards. Teacher asks student to compare the two numerals.

a. Teacher: Which number is greater? You can use the counters to help you decide.

Observe and record (✓ or -).

Repeat the activity. However, students will be asked to compare the numbers to find the one that is less than the other.

b. Teacher: Which number is less? You can use the counters to help you decide.

Observe and record (✓ or -).

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 2 - Counting and Matching Numerals 6-10 with Comparing

Pacing: 3 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices
Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning. *Practices in bold are to be emphasized in the unit.* **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.**
Domain and Standards Overview
Counting and Cardinality K.CC • Know number names and the count sequence. • Count to tell the number of objects. • Compare numbers.

Priority and Supporting CCSS	Explanations and Examples*
K.CC3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	K.CC.3. Students should be given multiple opportunities to count objects and recognize that a number represents a specific quantity. Once this is established, students begin to read and write numerals (numerals are the symbols for the quantities). The emphasis should first be on quantity and then connecting quantities to the written symbols. • A sample unit sequence might include: 4. Counting up to 20 objects in many settings and situations over several weeks. 5. Beginning to recognize, identify, and read the written numerals, and match the numerals to given sets of objects. 6. Writing the numerals to represent counted objects. • Since the teen numbers are not written as they are said, teaching the teen numbers as one group of ten and extra ones is foundational to understanding both the concept and the symbol that represents each teen number. For example, when focusing on the number "14," students should count out fourteen objects using one-to-one correspondence and then use those objects to make one group of ten and four extra ones. Students should connect the representation to the symbol "14."
K.CC.1. Count to 100 by ones and by tens.	K.CC.1. The emphasis of this standard is on the counting sequence. When counting by ones, students need to understand that the next number in the sequence is one more. When counting by tens, the next number in the sequence is "ten more" (or one more group of ten). **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.CC.1. Continued Instruction on the counting sequence should be scaffolded (e.g., 1-10, then 1-20, etc.). Counting should be reinforced throughout the day, not in isolation. Examples: • Count the number of chairs of the students who are absent. • Count the number of stairs, shoes, etc. • Counting groups of ten such as "fingers in the classroom" (ten fingers per student). When counting orally, students should recognize the patterns that exist from 1 to 100. They should also recognize the patterns that exist when counting by 10s.
K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. **a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.** **b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.** **c . Understand that each successive number name refers to a quantity that is one larger.**	K.CC.4. This standard focuses on one-to-one correspondence and how cardinality connects with quantity. • For example, when counting three bears, the student should use the counting sequence, "1-2-3," to count the bears and recognize that "three" represents the group of bears, not just the third bear. A student may use an interactive whiteboard to count objects, cluster the objects, and state, "This is three". In order to understand that each successive number name refers to a quantity that is one larger, students should have experience counting objects, placing one more object in the group at a time. **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.CC.4. Continued • For example, using cubes, the student should count the existing group, and then place another cube in the set. Some students may need to re-count from one, but the goal is that they would count on from the existing number of cubes. S/he should continue placing one more cube at a time and identify the total number in order to see that the counting sequence results in a quantity that is one larger each time one more cube is placed in the group. • A student may use a clicker (electronic response system) to communicate his/her count to the teacher.
K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	K.CC.5. Students should develop counting strategies to help them organize the counting process to avoid re-counting or skipping objects. Examples: • If items are placed in a circle, the student may mark or identify the starting object. • If items are in a scattered configuration, the student may move the objects into an organized pattern. • Some students may choose to use grouping strategies such as placing objects in twos, fives, or tens (note: this is not a kindergarten expectation). • Counting up to 20 objects should be reinforced when collecting data to create charts and graphs. • A student may use a clicker (electronic response system) to communicate his/her count to the teacher.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 2 - Counting and Matching Numerals 6-10 with Comparing

Priority and Supporting CCSS	Explanations and Examples*
K.CC.6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.* * Include groups with up to ten objects.	**K.CC.6** Students should develop a strong sense of the relationship between quantities and numerals before they begin comparing numbers. Other strategies: • Matching: Students use one-to-one correspondence, repeatedly matching one object from one set with one object from the other set to determine which set has more objects. • Counting: Students count the objects in each set, and then identify which set has more, less, or an equal number of objects. • Observation: Students may use observation to compare two quantities (e.g., by looking at two sets of objects, they may be able to tell which set has more or less without counting). • Observations in comparing two quantities can be accomplished through daily routines of collecting and organizing data in displays. Students create object graphs and pictographs using data relevant to their lives (e.g., favorite ice cream, eye color, pets, etc.). Graphs may be constructed by groups of students as well as by individual students. • Benchmark Numbers: This would be the appropriate time to introduce the use of 0, 5 and 10 as benchmark numbers to help students further develop their sense of quantity as well as their ability to compare numbers. ○ Students state whether the number of objects in a set is more, less, or equal to a set that has 0, 5, or 10 objects.
K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.	K.CC.7. Given two numerals, students should determine which is greater or less than the other.

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 2 - Counting and Matching Numerals 6-10 with Comparing

Priority and Supporting CCSS	Explanations and Examples*
K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.* * Limit category counts to be less than or equal to 10.	K.MD.3. Possible objects to sort include buttons, shells, shapes, beans, etc. After sorting and counting, it is important for students to: • explain how they sorted the objects; • label each set with a category; • answer a variety of counting questions that ask, "How many …"; and • compare sorted groups using words such as, "most", "least", "alike" and "different".

Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels
Number Relationship between: • Number and quantity • Counting & cardinality • Number names Number of objects: • Greater than • Less than • Equal to Number of objects zero to twenty Written numerals zero to twenty	RECOGNIZE (place value relationships) EXPLAIN USE COUNT (objects) SAY numbers (in order) PAIR (each object with one number) UNDERSTAND • (last number name tells objects counted) • (number of objects is the same regardless of arrangement) • (number of objects is the same regardless of order) • (each successive number refers to a quantity that is one larger) IDENTIFY (compare) groups of objects	4 2 3 1 2 3

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

	WRITE (numbers zero to twenty) REPRESENT (number of objects)	1 3

Essential Questions
Corresponding Big Ideas
Standardized Assessment Correlations (State, College and Career)
Expectations for Learning (in development) This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.
Unit Assessments **The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.**

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

Teacher directions: Read bolded statement aloud to child and record results on Interview Recording sheet.

Rote Count

TASK 1

a) Teacher: Count out loud starting at 1 and count as high as you can.

Record highest number student *accurately* counts to.

Ex: Child counts from 1-15 accurately, then skips 16. Stop student and record last correct number stated.

b) Teacher: Count out loud by tens starting at 10 and count as high as you can.

Record highest multiple of 10 student *accurately* counts to.
Ex: Child counts from 10 -50 accurately, then skips 60. Stop student and record last correct number stated.

Counting and Cardinality

TASK 2

Preparation: Provide child with a group of objects (bears, counters, etc.).

Teacher: Count out 10 bears. Say the numbers aloud as you count the bears.

When finished counting, ask the child to restate how many he/she has counted.

Observe and record (✔ or -):

1. Uses one-to-one correspondence

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

2. Says number names in the right order

3. States the last number counted as the total (cardinality of number)

TASK 3

Preparation: Teacher arranges 10 bears (or counters) in a circle or in a scattered arrangement.

Teacher: Teacher asks, **"How many bears (counters) are there?"**

Observe and record (✔ or -):

Child correctly counts 10 bears (counters) arranged in a circle or scattered configuration, using a strategy to keep track of items already counted.

Match Numerals

TASK 4

Preparation: In advance, teacher puts out *groups of objects* (ex: counters, unifix cubes or bears) and numeral cards 0-10. Objects should be arranged in groups of 3, 5, 8 and 10.

Teacher: Give students the shuffled set of numeral cards.

Count each group. Put the matching numeral card next to each set.

Observe and record (✔ or -) if student correctly matches all four sets.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

Compare Quantities

TASK 5

Preparation: Teacher uses dot card collection to assess students' ability to identify relationships of more, less and same.

a. Show student 7 and 4 dot cards.

   Teacher: Choose the set that is more.

b. Show student 9 and 3 dot cards.

   Teacher: Choose the set that is less or fewer.

c. Show student 5, 8 and 5 dot cards.

   Teacher: Choose the two sets that are the same.

Note: Please make dot cards for the numbers 1-10. May use a domino arrangement for the cards.

Compare Numbers

TASK 6

Preparation: Teacher gathers twenty objects and a set of numeral cards 1-10. Teacher selects two numeral cards and places them in front of the student (example: 5 and 7).

Teacher: Which is more? Show how you know. You can use these objects to help you. (Encourage children to use the manipulatives to justify their answer).

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 3- Counting and Matching Numerals 11-20

Pacing: 4 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices
Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning. *Practices in bold are to be emphasized in the unit.* **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.**
Domain and Standards Overview
<u>Counting and Cardinality K.CC</u> • Know number names and the count sequence. • Count to tell the number of objects. • Compare numbers.

Priority and Supporting CCSS	Explanations and Examples*
K.CC.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	**K.CC.3.** Students should be given multiple opportunities to count objects and recognize that a numeral represents a specific quantity. Once this is established, students begin to read and write numerals (numerals are the symbols for the quantities). The emphasis should first be on quantity and then connecting quantities to the written symbols. • A sample unit sequence might include: 7. Counting up to 20 objects in many settings and situations over several weeks. 8. Beginning to recognize, identify, and read the written numerals, and match the numerals to given sets of objects. 9. Writing the numerals to represent counted objects. Since the teen numbers are not written as they are said, teaching the teen numbers as one group of ten and extra ones is foundational to understanding both the concept and the symbol that represents each teen number. For example, when focusing on the number "14," students should count out fourteen objects using one-to-one correspondence and then use those objects to make one group of ten and four extra ones. Students should connect the representation to the symbol "14."
K.CC.1. Count to 100 by ones and by tens.	K.CC.1.The emphasis of this standard is on the counting sequence (rote counting). When counting by ones, students need to understand that the next number in the sequence is one more. When counting by tens, the next number in the sequence is "ten more" (or one more group of ten). Instruction on the counting sequence should be scaffolded (e.g., 1-10, then 1-20, etc.). Counting should be reinforced throughout the day, not in isolation. **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.CC.1 Continued Examples: • Count the number of chairs of the students who are absent. • Count the number of stairs, shoes, etc. • Counting groups of ten such as "fingers in the classroom" (ten fingers per student). When counting orally, students should recognize the patterns that exist from 1 to 100. They should also recognize the patterns that exist when counting by 10s.
K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	K.CC.2. The emphasis of this standard is on the counting sequence to 100. Students should be able to count forward from any number, 1-99.
K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. • **When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.** • **b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.** • **c. Understand that each successive number name refers to a quantity that is one larger.**	**K.CC.4.** This standard focuses on one-to-one correspondence and how cardinality connects with quantity. • For example, when counting three bears, the student should use the counting sequence, "1-2-3," to count the bears and recognize that "three" represents the group of bears, not just the third bear. A student may use an interactive whiteboard to count objects, cluster the objects, and state, "This is three" (Cardinality tells "how many"). In order to understand that each successive number name refers to a quantity that is one larger, students should have experience counting objects, placing one more object in the group at a time. • For example, using cubes, the student should count the existing group, and then place another cube in the set. Some students may need to re-count from one, but the goal is that they would count on from the existing number of cubes. S/he should continue placing one more cube at a time and identify the total number in order to see that the counting sequence results in a quantity that is one larger each time one more cube is placed in the group. A student may use a clicker (electronic response system) to communicate his/her count to the teacher.

Priority and Supporting CCSS	Explanations and Examples*
K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	K.CC.5. Students should develop counting strategies to help them organize the counting process to avoid re-counting or skipping objects. Examples: • If items are placed in a circle, the student may mark or identify the starting object. • If items are in a scattered configuration, the student may move the objects into an organized pattern. • Some students may choose to use grouping strategies such as placing objects in twos, fives, or tens (note: this is not a kindergarten expectation). • Counting up to 20 objects should be reinforced when collecting data to create charts and graphs. A student may use a clicker (electronic response system) to communicate his/her count to the teacher.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 3- Counting and Matching Numerals 11-20

Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels
Number	COUNT (objects)	1
Relationship between:	SAY numbers (in order)	2
• Number and quantity	PAIR (each object with one number)	3
• Counting & cardinality	UNDERSTAND	4
• Number names	• (last number name tells objects counted)	
	• (number of objects is the same regardless of arrangement)	
Number of objects: • Greater than • Less than • Equal to	• (number of objects is the same regardless of order)	
	• (each successive number refers to a quantity that is one larger)	
Number of objects zero to twenty	IDENTIFY (compare) groups of objects	1
Written numerals zero to twenty	WRITE (numbers zero- twenty)	1
	REPRESENT (number of objects)	3

Essential Questions
4. Why do we count? 5. How are numerals used? 6. How can two quantities be related?

Corresponding Big Ideas
4. Counting tells how many there are in a group regardless of the order in which the objects are counted. The last number said when counting, tells the total number of objects counted. 5. Numerals are the symbols we read and write to communicate quantities (numbers). 6. One quantity is either greater than, less than or equal to other.

Standardized Assessment Correlations (State, College and Career)
Expectations for Learning (in development) This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.

Unit Assessments The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 4 – Fluency with Addition and Subtraction Within 5

Pacing: 4 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices

Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning.

Practices in bold are to be emphasized in the unit.

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.**

Domain and Standards Overview

Counting and Cardinality K.CC

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

Operations and Algebraic Thinking K.OA

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

Priority and Supporting CCSS	Explanations and Examples*
K.CC.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	**K.CC.3.** Students should be given multiple opportunities to count objects and recognize that a numeral represents a specific quantity. Once this is established, students begin to read and write numerals (numerals are the symbols for the quantities). The emphasis should first be on quantity and then connecting quantities to the written symbols. • A sample unit sequence might include: 10. Counting up to 20 objects in many settings and situations over several weeks. 11. Beginning to recognize, identify, and read the written numerals, and match the numerals to given sets of objects. 12. Writing the numerals to represent counted objects. Since the teen numbers are not written as they are said, teaching the teen numbers as one group of ten and extra ones is foundational to understanding both the concept and the symbol that represents each teen number. For example, when focusing on the number "14," students should count out fourteen objects using one-to-one correspondence and then use those objects to make one group of ten and four extra ones. Students should connect the representation to the symbol "14."
K.CC.1. Count to 100 by ones and by tens.	K.CC.1.The emphasis of this standard is on the counting sequence (rote counting). When counting by ones, students need to understand that the next number in the sequence is one more. When counting by tens, the next number in the sequence is "ten more" (or one more group of ten). Instruction on the counting sequence should be scaffolded (e.g., 1-10, then 1-20, etc.). Counting should be reinforced throughout the day, not in isolation. **Continued on next page**

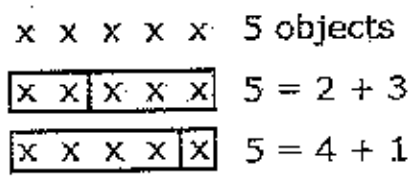
Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.CC.1 Continued Examples: • Count the number of chairs of the students who are absent. • Count the number of stairs, shoes, etc. • Counting groups of ten such as "fingers in the classroom" (ten fingers per student). When counting orally, students should recognize the patterns that exist from 1 to 100. They should also recognize the patterns that exist when counting by 10s.
K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	K.CC.2. The emphasis of this standard is on the counting sequence to 100. Students should be able to count forward from any number, 1-99.
K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. • **When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.** • **b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.** • **c. Understand that each successive number name refers to a quantity that is one larger.**	**K.CC.4.** This standard focuses on one-to-one correspondence and how cardinality connects with quantity. • For example, when counting three bears, the student should use the counting sequence, "1-2-3," to count the bears and recognize that "three" represents the group of bears, not just the third bear. A student may use an interactive whiteboard to count objects, cluster the objects, and state, "This is three" (Cardinality tells "how many"). In order to understand that each successive number name refers to a quantity that is one larger, students should have experience counting objects, placing one more object in the group at a time. • For example, using cubes, the student should count the existing group, and then place another cube in the set. Some students may need to re-count from one, but the goal is that they would count on from the existing number of cubes. S/he should continue placing one more cube at a time and identify the total number in order to see that the counting sequence results in a quantity that is one larger each time one more cube is placed in the group. A student may use a clicker (electronic response system) to communicate his/her count to the teacher.

Priority and Supporting CCSS	Explanations and Examples*
K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	K.CC.5. Students should develop counting strategies to help them organize the counting process to avoid re-counting or skipping objects. Examples: • If items are placed in a circle, the student may mark or identify the starting object. • If items are in a scattered configuration, the student may move the objects into an organized pattern. • Some students may choose to use grouping strategies such as placing objects in twos, fives, or tens (note: this is not a kindergarten expectation). • Counting up to 20 objects should be reinforced when collecting data to create charts and graphs. A student may use a clicker (electronic response system) to communicate his/her count to the teacher.
K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings*, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. *** Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)**	**K.OA.1.** Using addition and subtraction in a word problem context allows students to develop their understanding of what it means to add and subtract. Students should use objects, fingers, mental images, drawing, sounds, acting out situations and verbal explanations in order to develop the concepts of addition and subtraction. Then, they should be introduced to writing expressions and equations using appropriate terminology and symbols which include "+," "–," and "=". • Addition terminology: add, join, put together, plus, combine, total • Subtraction terminology: minus, take away, separate, difference, compare Students may use document cameras or interactive whiteboards to represent the concept of addition or subtraction. This gives them the opportunity to communicate their thinking.

Priority and Supporting CCSS	Explanations and Examples*
K.OA.2, Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	K.OA.2 Using a word problem context allows students to develop their understanding about what it means to add and subtract. Addition is putting together and adding to. Subtraction is taking apart and taking from. Kindergarteners develop the concept of addition/subtraction by modeling the actions in word problem using objects, fingers, mental images, drawings, sounds, acting out situations, and/or verbal explanations. Students may use different representations based on their experiences, preferences, etc. They may connect their conceptual representations of the situation using symbols, expressions, and/or equations. Students should experience the following addition and subtraction problem types (see Table 1). • Add To word problems, such as, "Mia had 3 apples. Her friend gave her 2 more. How many does she have now?" o A student's "think aloud" of this problem might be, "I know that Mia has some apples and she's getting some more. So she's going to end up with more apples than she started with." • Take From problems such as: o José had 8 markers and he gave 2 away. How many does he have now? When modeled, a student would begin with 8 objects and remove two to get the result. • Put Together/Take Apart problems with Total Unknown gives students opportunities to work with addition in another context such as: o There are 2 red apples on the counter and 3 green apples on the counter. How many apples are on the counter? • Solving Put Together/Take Apart problems with Both Addends Unknown provides students with experiences with finding all the decompositions of a number and investigating the patterns involved. o There are 10 apples on the counter. Some are red and some are green. How many apples could be green? How many apples could be red? **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.OA.2. Continued Students may use a document camera or interactive whiteboard to demonstrate addition or subtraction strategies. This gives them the opportunity to communicate and justify their thinking.
K.OA.3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	**K.OA.3.** This standard focuses on number pairs which add to a specified total, 1-10. These number pairs may be examined either in or out of context. Students may use objects such as cubes, two-color counters, square tiles, etc. to show different number pairs for a given number. For example, for the number 5, students may split a set of 5 objects into 1 and 4, 2 and 3, etc. Students may also use drawings to show different number pairs for a given number. For example, students may draw 5 objects, showing how to decompose in several ways.  **Continued with next page**

Priority and Supporting CCSS	Explanations and Examples*
	K.OA.3. Continued Sample unit sequence: • A contextual problem (word problem) is presented to the students such as, "Mia goes to Nan's house. Nan tells her she may have 5 pieces of fruit to take home. There are lots of apples and bananas. How many of each can she take?" • Students find related number pairs using objects (such as cubes or two-color counters), drawings, and/or equations. Students may use different representations based on their experiences, preferences, etc. • Students may write equations that equal 5 such as: o 5=4+1 o 3+2=5 o 2+3=4+1 This is a good opportunity for students to systematically list all the possible number pairs for a given number. For example, all the number pairs for 5 could be listed as 0+5, 1+4, 2+3, 3+2, 4+1, and 5+0. Students should describe the pattern that they see in the addends, e.g., each number is one less or one than the previous addend.
K.OA.5. Fluently add and subtract within 5.	**K.OA.5.** This standard focuses on students being able to add and subtract numbers within 5. Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently. Strategies students may use to attain fluency include: • Counting on (e.g., for 3+2, students will state, "3," and then count on two more, "4, 5," and state the solution is "5") • Counting back (e.g., for 4-3, students will state, "4," and then count back three, "3, 2, 1" and state the solution is "1")

Priority and Supporting CCSS	Explanations and Examples*
	Continued on next page **K.OA.5.** Continued • Counting up to subtract (e.g., for 5-3, students will say, "3," and then count up until they get to 5, keeping track of how many they counted up, stating that the solution is "2") • Using doubles (e.g., for 2+3, students may say, "I know that 2+2 is 4, and 1 more is 5") • Using commutative property (e.g., students may say, "I know that 2+1=3, so 1+2=3") • Using fact families (e.g., students may say, "I know that 2+3=5, so 5-3=2") Students may use electronic versions of five frames to develop fluency of these facts.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 4 – Fluency with Addition and Subtraction Within 5

Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels
Number Relationship between: • Number and quantity • Counting & cardinality • Number names	COUNT (objects) SAY numbers (in order) PAIR (each object with one number) UNDERSTAND • (last number name tells objects counted) • (number of objects is the same regardless of arrangement) • (number of objects is the same regardless of order) • (each successive number refers to a quantity that is one larger)	1 2 3
Number of objects zero to twenty		
Written numerals zero to twenty		1 3
Addition	WRITE (numbers zero to twenty) REPRESENT number of objects	
Subtraction	REPRESENT (addition and subtraction) with: • Objects • Fingers • Drawings • Sounds • Equations • Expressions	2 3
Numbers (operations and algebraic thinking) • Less than ten • Equal to ten • Pairs		
Drawings and Equations	ACT out addition and subtraction situations EXPLAIN (addition and subtraction)	3
Addition and sub traction within zero to five	DECOMPOSE (numbers) RECORD (decompositions) ADD (fluently) SUBTRACT fluently)	1 1 3

Essential Questions

Corresponding Big Ideas

Standardized Assessment Correlations (State, College and Career)
Expectations for Learning (in development) This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 1

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

There is 1 tomato on a plant.

There are 3 tomatoes on another plant.

How many tomatoes are there in all?

Answer: 4

TASK 2

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

There are no books on the shelf.

The teacher buys 3 books and puts them on the shelf.

How many books are on the shelf now?

Answer: 3

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 3

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

There are 2 birds on a branch.

2 more birds sit on the branch.

How many birds are now sitting on the branch?

Answer: 4

TASK 4:

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

There are 4 cats playing outside.

1 cat joins them.

How many cats are playing outside now?

Answer: 5

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 5

Read the following problem to student:

How many crayons are shown in the picture below?

(Replace these images as needed - problem should show a set of 2 crayons and a set of 3 crayons that are not overlapping each other)

Answer: 5

TASK 6

Read the following problem to student:

How many cookies are shown in the picture below?

(Replace these images as needed- problem should show a set of 2 cookies and another set of 2 cookies that are not overlapping each other)

Answer: 4

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 7

Show student the expression below. Ask student to draw a picture and tell a story that matches the expression, and then solve the problem.

$$1 + 3$$

Answer: Student correctly addresses all 3 criteria: draws a picture, tells a matching story and has the correct solution.
(Example of story: I have 1 truck. My friend has 3 trucks. We have 4 trucks in all.)

Partial Credit: Student correctly addresses 1 or 2 criteria.

No Credit: Student does not address any of the criteria correctly.

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 8

Read the following problem to student:

There are 5 apples in a bowl.

Some apples are red. Some apples are green.

A) How many of each color apple could be in the bowl? _____ red apples _____ green apples

B) Find a different answer. _____ red apples _____ green apples

(Replace this image as needed - problem should show a bowl that students can use as a work mat to solve the problem)

Answer: Student finds 2 correct combinations of red and green apples that total 5.

Partial Credit: Student correctly finds 1correct combination of red and green apples.

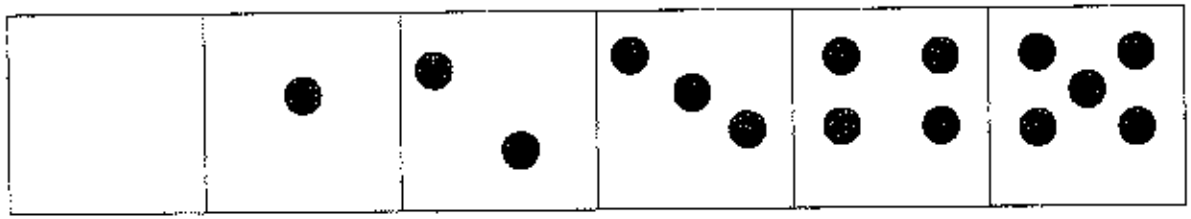
No Credit: Student does not find a correct combination of red and green apples.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 9

Have dot cards show below cut out and available for students to use.



Make 5 rows of the table above to complete the card set. Dot cards should be roughly 1 ½ inches x 1 ½ inches

Read the following problem to student:

Use the dot cards to help you find different ways to make 5.

Show as many different ways to make 5 as you can.

Answer: Student finds 5 or more different ways to make 5.

Partial Credit: Student finds 1 to 4 different ways to make 5.

No Credit: The student does not find a correct way to make 5.

Note: This problem can be repeated using different numbers (example: find ways to make 4)

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 10

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

There are 4 ducks in a pond.

One duck swims away.

How many ducks are left?

Answer: 3

TASK 11

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

Sara had 5 pennies.

She lost some pennies.

Now she has 3 pennies left.

How many pennies did she lose?

Answer: 2

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 12

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

Joe had 5 slices of pizza.

He ate 2 slices.

How many slices of pizza are left?

Answer: 3

TASK 13

Provide students with some (10 or more) counters (snap cubes, bears, etc.) to solve the following problem.

Ask the student to count out 5 in order to create a group of 5 counters.

Teacher takes 2 counters away from the 5 and hides them (in your hand, under a cup, etc.) so that 3 counters are visible.

Ask: How many counters are hidden?

*Note: Problem can be repeated with different amounts.

Answer: 2

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 14

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

Tell a subtraction story about the 4 children and solve the problem.

(Replace this image as needed - problem should show a set of 4 children, 2 boys and 2 girls)

Answer: Student correctly addresses both criteria: tells an appropriate story with a correct answer.
(Example of story: Four children are playing a game. Two of the children are boys. How many girls are there? Answer: 2.)

Partial Credit: Student correctly addresses 1 criterion (Tells an appropriate story problem with an incorrect or missing answer.)

No Credit: Student is unable to tell a correct subtraction story problem.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 15

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

Tell a subtraction story about the 5 fish and solve the problem.

(Replace this image as needed - problem should show a set of 5 fish that have some similar characteristic – this picture shows 2 purple fish, two tan fish, 3 striped fish)

Answer: Student correctly addresses both criteria: tells an appropriate story with a correct answer.

(Example of story: Sam has 5 fish. Three of the fish have stripes. How many fish do not have stripes? Answer: 2. OR There are 2 fish that do not have stripes.)

Partial Credit: Student correctly addresses 1 criterion (Tells an appropriate story problem with an incorrect or missing answer.)

No Credit: Student is unable to tell a correct subtraction story problem.

TASK 16

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

Show student the expression below. Ask student to draw a picture and tell a story that matches the expression and then solve the problem.

$$4 - 1$$

Answer: Student correctly addresses all 3 criteria: draws a picture, tells a matching story and has the correct solution.
(Example of story: I have 4 bears. I gave 1 to my sister. I have 3 bears left.)

Partial Credit: Student correctly addresses 1 or 2 criteria.

No Credit: Student does not address any of the criteria correctly.

TASK 17

Show student the expression below. Ask student to draw a picture and tell a story that matches the expression and then solve the problem.

$$3 - 3$$

Answer: Student correctly addresses all 3 criteria: draws a picture, tells a matching story and has the correct solution.
(Example of story: I saw 3 bees on a flower. The 3 bees flew away, now there are 0 bees left.)

Partial Credit: Student correctly addresses 1 or 2 criteria.

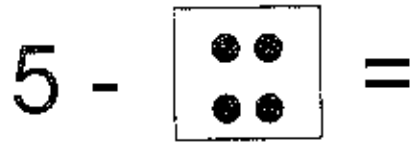
No Credit: Student does not address any of the criteria correctly.

TASK 18

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

Show student the expression below. Ask student to draw a picture and tell a story that matches the expression and then solve the problem.



Answer: Student correctly addresses all 3 criteria: draws a picture, tells a matching story and has the correct solution.
(Example of story: There were 5 eggs in a bowl. Four eggs were used to make breakfast, now there is 1 egg left in the bowl.)

Partial Credit: Student correctly addresses 1 or 2 criteria.

No Credit: Student does not address any of the criteria correctly.

TASK 19

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

Read the following problem to student.

a) Using the fingers on both your hands, show me a way to make 5.

b) Show me a different way to make five.

Note: This item can be used to identify number pairs for other sums in this unit as well.

Answer: Student correctly shows two different representations for the number 5 using his/her fingers on both hands. For example, student shows 4 fingers on left hand and 1 finger on the right hand and then shows 3 fingers on the left hand and 2 fingers on the right hand.
Note: Accept 5 fingers on one hand and no fingers on another hand as a correct response. If student uses the same number combination for both examples, 4 + 1 and 1 + 4, probe further by asking student to find a different way that does not use the numbers 1 and 4.

Partial Credit: Student correctly identifies only one number combination that totals 5.

No Credits: Student is unable to find a combination that totals 5.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 5 – Exploring Addition and Subtraction Within 10

Pacing: 4 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices

Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning.

Practices in bold are to be emphasized in the unit.

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.

Domain and Standards Overview

Counting and Cardinality K.CC

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

Operations and Algebraic Thinking K.OA

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

Priority and Supporting CCSS	Explanations and Examples*
K.CC.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	**K.CC.3.** Students should be given multiple opportunities to count objects and recognize that a numeral represents a specific quantity. Once this is established, students begin to read and write numerals (numerals are the symbols for the quantities). The emphasis should first be on quantity and then connecting quantities to the written symbols. • A sample unit sequence might include: 13. Counting up to 20 objects in many settings and situations over several weeks. 14. Beginning to recognize, identify, and read the written numerals, and match the numerals to given sets of objects. 15. Writing the numerals to represent counted objects. Since the teen numbers are not written as they are said, teaching the teen numbers as one group of ten and extra ones is foundational to understanding both the concept and the symbol that represents each teen number. For example, when focusing on the number "14," students should count out fourteen objects using one-to-one correspondence and then use those objects to make one group of ten and four extra ones. Students should connect the representation to the symbol "14."
K.CC.1. Count to 100 by ones and by tens.	K.CC.1.The emphasis of this standard is on the counting sequence (rote counting). When counting by ones, students need to understand that the next number in the sequence is one more. When counting by tens, the next number in the sequence is "ten more" (or one more group of ten). Instruction on the counting sequence should be scaffolded (e.g., 1-10, then 1-20, etc.). Counting should be reinforced throughout the day, not in isolation. **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.CC.1 Continued Examples: • Count the number of chairs of the students who are absent. • Count the number of stairs, shoes, etc. • Counting groups of ten such as "fingers in the classroom" (ten fingers per student). When counting orally, students should recognize the patterns that exist from 1 to 100. They should also recognize the patterns that exist when counting by 10s.
K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	K.CC.2. The emphasis of this standard is on the counting sequence to 100. Students should be able to count forward from any number, 1-99.
K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. • **When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.** • **b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.** • **c. Understand that each successive number name refers to a quantity that is one larger.**	**K.CC.4.** This standard focuses on one-to-one correspondence and how cardinality connects with quantity. • For example, when counting three bears, the student should use the counting sequence, "1-2-3," to count the bears and recognize that "three" represents the group of bears, not just the third bear. A student may use an interactive whiteboard to count objects, cluster the objects, and state, "This is three" (Cardinality tells "how many"). In order to understand that each successive number name refers to a quantity that is one larger, students should have experience counting objects, placing one more object in the group at a time. • For example, using cubes, the student should count the existing group, and then place another cube in the set. Some students may need to re-count from one, but the goal is that they would count on from the existing number of cubes. S/he should continue placing one more cube at a time and identify the total number in order to see that the counting sequence results in a quantity that is one larger each time one more cube is placed in the group. A student may use a clicker (electronic response system) to communicate his/her count to the teacher.

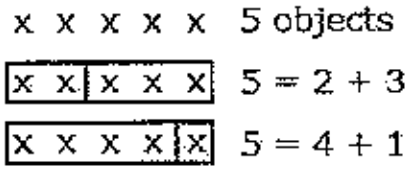
Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 5 – Exploring Addition and Subtraction Within 10

Priority and Supporting CCSS	Explanations and Examples*
K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	K.CC.5. Students should develop counting strategies to help them organize the counting process to avoid re-counting or skipping objects. Examples: • If items are placed in a circle, the student may mark or identify the starting object. • If items are in a scattered configuration, the student may move the objects into an organized pattern. • Some students may choose to use grouping strategies such as placing objects in twos, fives, or tens (note: this is not a kindergarten expectation). • Counting up to 20 objects should be reinforced when collecting data to create charts and graphs. A student may use a clicker (electronic response system) to communicate his/her count to the teacher.
K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings*, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. *** Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)**	**K.OA.1.** Using addition and subtraction in a word problem context allows students to develop their understanding of what it means to add and subtract. Students should use objects, fingers, mental images, drawing, sounds, acting out situations and verbal explanations in order to develop the concepts of addition and subtraction. Then, they should be introduced to writing expressions and equations using appropriate terminology and symbols which include "+," "–," and "=". • Addition terminology: add, join, put together, plus, combine, total • Subtraction terminology: minus, take away, separate, difference, compare Students may use document cameras or interactive whiteboards to represent the concept of addition or subtraction. This gives them the opportunity to communicate their thinking.

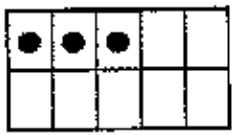
Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
K.OA.2, Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	K.OA.2. Using a word problem context allows students to develop their understanding about what it means to add and subtract. Addition is putting together and adding to. Subtraction is taking apart and taking from. Kindergarteners develop the concept of addition/subtraction by modeling the actions in word problem using objects, fingers, mental images, drawings, sounds, acting out situations, and/or verbal explanations. Students may use different representations based on their experiences, preferences, etc. They may connect their conceptual representations of the situation using symbols, expressions, and/or equations. Students should experience the following addition and subtraction problem types (see Table 1). • Add To word problems, such as, "Mia had 3 apples. Her friend gave her 2 more. How many does she have now?" o A student's "think aloud" of this problem might be, "I know that Mia has some apples and she's getting some more. So she's going to end up with more apples than she started with." • Take From problems such as: o José had 8 markers and he gave 2 away. How many does he have now? When modeled, a student would begin with 8 objects and remove two to get the result. • Put Together/Take Apart problems with Total Unknown gives students opportunities to work with addition in another context such as: o There are 2 red apples on the counter and 3 green apples on the counter. How many apples are on the counter? • Solving Put Together/Take Apart problems with Both Addends Unknown provides students with experiences with finding all the decompositions of a number and investigating the patterns involved. o There are 10 apples on the counter. Some are red and some are green. How many apples could be green? How many apples could be red? **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.OA.2. Continued Students may use a document camera or interactive whiteboard to demonstrate addition or subtraction strategies. This gives them the opportunity to communicate and justify their thinking.
K.OA.3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	**K.OA.3.** This standard focuses on number pairs which add to a specified total, 1-10. These number pairs may be examined either in or out of context. Students may use objects such as cubes, two-color counters, square tiles, etc. to show different number pairs for a given number. For example, for the number 5, students may split a set of 5 objects into 1 and 4, 2 and 3, etc. Students may also use drawings to show different number pairs for a given number. For example, students may draw 5 objects, showing how to decompose in several ways.  Sample unit sequence: • A contextual problem (word problem) is presented to the students such as, "Mia goes to Nan's house. Nan tells her she may have 5 pieces of fruit to take home. There are lots of apples and bananas. How many of each can she take?" • Students find related number pairs using objects (such as cubes or two-color counters), drawings, and/or equations. Students may use different representations based on their experiences, preferences, etc. • Students may write equations that equal 5 such as: o 5=4+1 o 3+2=5 o 2+3=4+1 **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.OA.3. Continued This is a good opportunity for students to systematically list all the possible number pairs for a given number. For example, all the number pairs for 5 could be listed as 0+5, 1+4, 2+3, 3+2, 4+1, and 5+0. Students should describe the pattern that they see in the addends, e.g., each number is one less or one than the previous addend.
K.OA.4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	K.OA.4. the number pairs that total ten are foundational for students' ability to work fluently within base-ten numbers and operations. Different models, such as ten-frames, cubes, two-color counters, etc., assist students in visualizing these number pairs for ten. Example 1: Students place three objects on a ten frame and then determine how many more are needed to "make a ten." Students may use electronic versions of ten frames to develop this skill.  Example 2: The student snaps ten cubes together to make a "train." • Student breaks the "train" into two parts. S/he counts how many are in each part and record the associated equation (10 = ___ + ___). • Student breaks the "train into two parts. S/he counts how many are in one part and determines how many are in the other part without directly counting that part. Then s/he records the associated equation (if the counted part has 4 cubes, the equation would be 10 = 4 + ___). **Continued on next page**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
	K.OA.4 Continued Examples Continued: • Student covers up part of the train, without counting the covered part. S/he counts the cubes that are showing and determines how many are covered up. Then s/he records the associated equation (if the counted part has 7 cubes, the equation would be 10 = 7 + ___). Example 3: The student tosses ten two-color counters on the table and records how many of each color are facing up.
K.OA.5. Fluently add and subtract within 5. (This priority standard is only supporting in this unit.)	**K.OA.5.** This standard focuses on students being able to add and subtract numbers within 5. Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently. Strategies students may use to attain fluency include: • Counting on (e.g., for 3+2, students will state, "3," and then count on two more, "4, 5," and state the solution is "5") • Counting back (e.g., for 4-3, students will state, "4," and then count back three, "3, 2, 1" and state the solution is "1") • Counting up to subtract (e.g., for 5-3, students will say, "3," and then count up until they get to 5, keeping track of how many they counted up, stating that the solution is "2") • Using doubles (e.g., for 2+3, students may say, "I know that 2+2 is 4, and 1 more is 5") • Using commutative property (e.g., students may say, "I know that 2+1=3, so 1+2=3") • Using fact families (e.g., students may say, "I know that 2+3=5, so 5-3=2") Students may use electronic versions of five frames to develop fluency of these facts.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 5 – Exploring Addition and Subtraction Within 10

Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels*
Number Relationship between: • Number and quantity • Counting & cardinality • Number names Number of objects zero to twenty Written numerals zero to twenty Addition Subtraction Numbers (operations and algebraic thinking) • Less than ten • Equal to ten • Pairs Drawings and Equations Addition and sub traction within zero to five	COUNT (objects) SAY numbers (in order) PAIR (each object with one number) UNDERSTAND • (last number name tells objects counted) • (number of objects is the same regardless of arrangement) • (number of objects is the same regardless of order) • (each successive number refers to a quantity that is one larger) WRITE (numbers zero to twenty) REPRESENT number of objects REPRESENT (addition and subtraction) with: • Objects • Fingers • Drawings • Sounds • Equations • Expressions ACT out addition and subtraction situations EXPLAIN (addition and subtraction) DECOMPOSE (numbers) RE CORD (decompositions) ADD (fluently) SUBTRACT fluently)	1 2 3 1 3 2 3 3 1 1 3

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 5 – Exploring Addition and Subtraction Within 10

Essential Questions

Corresponding Big Ideas

Standardized Assessment Correlations (State, College and Career)
Expectations for Learning (in development) This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 1

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

There are 5 pumpkins on a vine.

There are 5 pumpkins on the ground.

How many pumpkins are there in all?

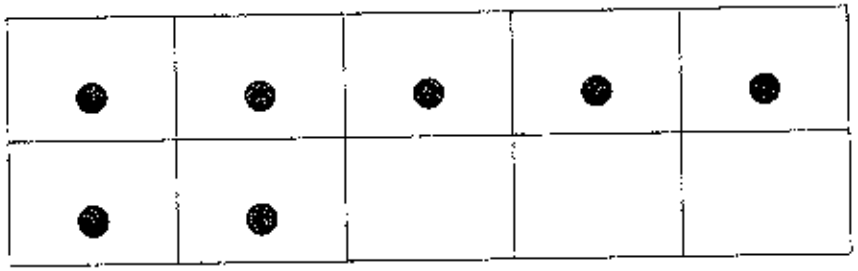
Answer: 10

TASK 2

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

There are 7 counters on the ten-frame below.

How many more counters do we need to make 10?



Answer: 3

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*Adapted from the Arizona Academic Content Standards.

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 3

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

I have 6 cookies.

My friend has 4 cookies.

How many cookies are there in all?

Answer: 10

TASK 4

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

How many fingers are pointing up in the picture below?

How many more will make 10 fingers pointing up?

(Replace images as needed - hands should show 5 fingers up and 4 fingers up.)

Answer: 1

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

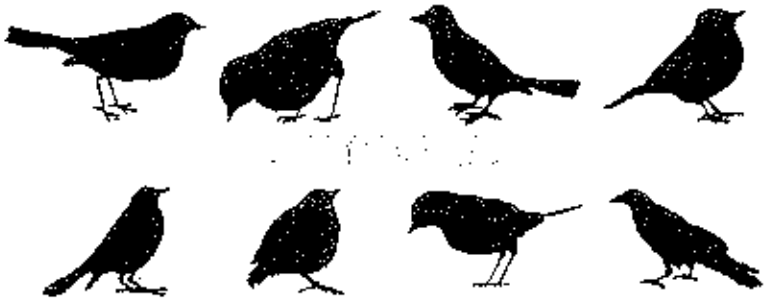
TASK 5

Read the following problem to student:

8 birds are in the yard.

2 birds fly away.

How many birds are left?



(Replace these images as needed- problem should show a set of 8 birds that are not overlapping each other)

Answer: 6

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 6

Read the following problem to student:

I had 10 gingerbread cookies.

I gave 6 away.

How many do I have left?

(Replace these images as needed- problem should show a set of 10 cookies that are not overlapping each other)

Answer: 4

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 7

Show student the expression below. Ask student to draw a picture and tell a story that matches the expression and then solve the problem.

$$5 + 2$$

Answer: Student correctly addresses all 3 criteria: draws a picture, tells a matching story and has the correct solution.
(Example of story: I have 5 trucks. My friend has 2 trucks. We have 7 trucks in all.)

Partial Credit: Student correctly addresses 1 or 2 criteria.

No Credit: Student does not address any of the criteria correctly.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 8

Read the following problem to student:

There are 10 jelly beans in a jar.

Some jelly beans are red. Some jelly beans are blue.

C) How many of each color could be in the jar?

_____ red jelly beans _____ blue jelly beans

a) Find a different answer.

_____ red jelly beans _____ blue jelly beans

(Replace this image as needed - problem should show an empty jar that students can use as a work mat to solve the problem)

Answer: Student finds 2 appropriate combinations of red and blue jelly beans that total 10.

Partial Credit: Student finds 1 appropriate combination of red and blue jelly beans that total 10.

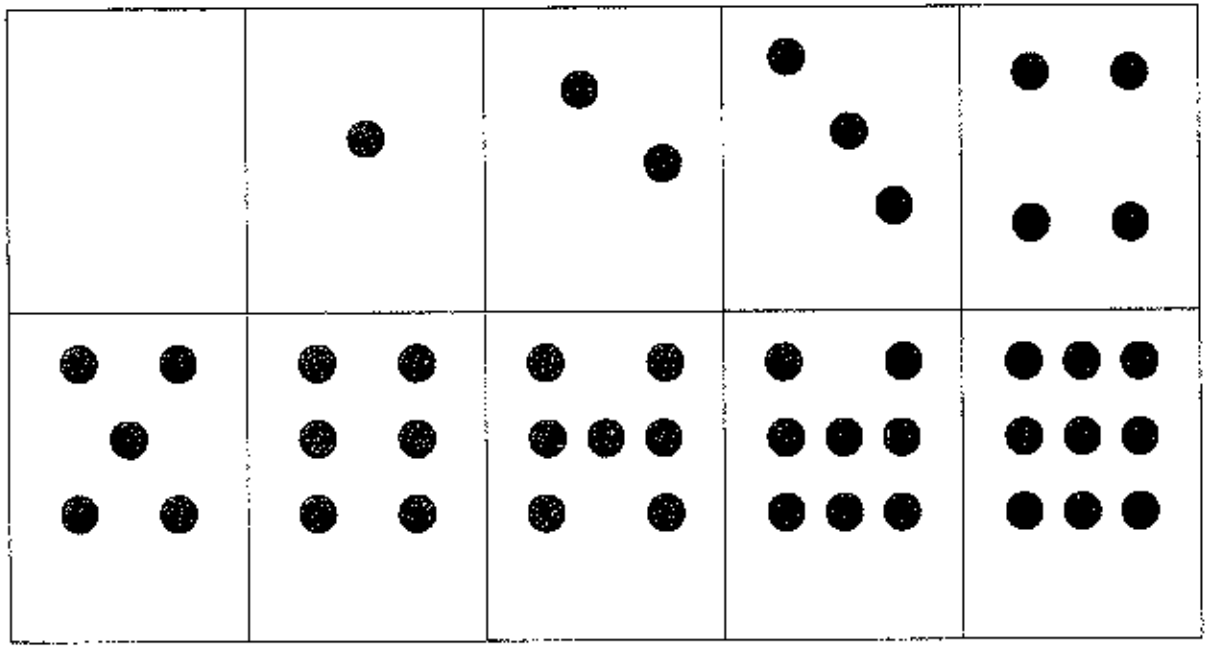
No Credit: Student is unable to find an appropriate combination of red and blue jelly beans that totals 10.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 9

Have dot cards shown below cut out and available for students to use.



***Make 5 rows of the table above to complete the card set- so that students have multiple cards with the same number. Dot cards should be enlarged (approx.: 2 inches x 2 inches)**

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Unit Assessments

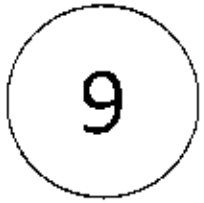
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 9 (Cont.)

Read the following problem to student:

Use the dot cards to help you find different ways to make 9.

Show as many different ways to make 9 as you can.



Note: This problem can be repeated using different numbers (example: find ways to make 6)

Answer: Student finds 7 or more different ways to make 9.

Partial Credit: Student finds 1 to 6 different ways to make 9.

No Credit: The student does not find a correct way to make 9.

Note: This problem can be repeated using different numbers (example: find ways to make 6)

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*Adapted from the Arizona Academic Content Standards.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 10

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

There are 7 puppies in the park.

4 puppies run away.

How many puppies are left?

Answer: 3

TASK 11

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

Emma has 8 apples.

She gave 1 apple away.

How many apples does she have left?

Answer: 7

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 12

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

Kate had 7 pencils.
She lost some.
Now she has 2 pencils left.

How many pencils did she lose?

Answer: 5

TASK 13
Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

Tell a subtraction story about the 8 children and solve the problem.

(Replace this image as needed, problem should have 8 children standing next to each other.)

Answer: Student tells an appropriate subtraction story with an appropriate answer.
(Example of story: There are 8 children on a school bus. Six of the children got off the bus. There are 2 children left on the bus.)

Partial Credit: Student correctly addresses 1 criterion (Tells an appropriate story problem with an incorrect or missing answer.)
No Credit: Student is unable to tell a correct subtraction story problem.

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 14

Read the following problem to student. Student may use fingers, objects, drawings or write an equation to solve the problem.

Tell a subtraction story about the 7 teddy bears and solve the problem.

(Replace this image as needed; problem should have 7 teddy bears next to each other.)

Answer: Student tells an appropriate subtraction story with an appropriate answer.
(Example of story: A toy store had 7 teddy bears. Four of the teddy bears were sold. There are 3 teddy bears left in the store.)

Partial Credit: Student correctly addresses 1 criterion (Tells an appropriate story problem with an incorrect or missing answer.)

No Credit: Student is unable to tell a correct subtraction story problem.

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 15

Show student the expression below. Ask student to draw a picture and tell a story that matches the expression and then solve the problem.

$$6 - 3$$

Answer: Student correctly addresses all 3 criteria: draws a picture, tells a matching story and has the correct solution.
(Example of story: I have 6 bears. I gave 3 to my sister. I have 3 bears left.)

Partial Credit: Student correctly addresses 1 or 2 criteria.
No Credit: Student does not address any of the criteria correctly.

TASK 16

Show student the expression below. Ask student to draw a picture and tell a story that matches the expression and then solve the problem.

$$8 - 8$$

Answer: Student correctly addresses all 3 criteria: draws a picture, tells a matching story and has the correct solution.
Example of story: I saw 8 bees on the flower. The 8 bees flew away, now there are 0 bees left.

Partial Credit: Student correctly addresses 1 or 2 criteria.

No Credit: Student does not address any of the criteria correctly.

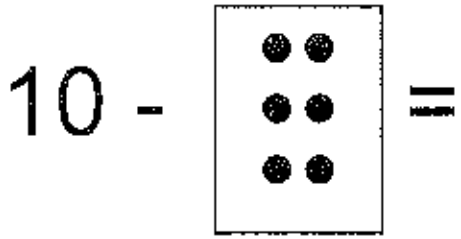
Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Unit Assessments

The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 17

Show student the expression below. Ask student to draw a picture and tell a story that matches the expression and then solve the problem.



Answer: Student correctly addresses all 3 criteria: draws a picture, tells a matching story and has the correct solution.
(Example of story: I saw 10 bees on the flower. 6 bees flew away, now there are 4 bees left.)

Partial Credit: Student correctly addresses 1 or 2 criteria.

No Credit: Student does not address any of the criteria correctly.

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

TASK 18

Read the following problem to student.

a) Using the fingers on both your hands, show me a way to make 6.

b) Show me a different way to make 6.

Note: This item can be used to identify number pairs for other sums in this unit as well.

Answer: Student correctly shows at least 3 different representations for the number 6 using his/her fingers on both hands. For example, student shows 4 fingers on left hand and 2 fingers on the right hand, and then shows 5 fingers on the left hand and 1 finger on the right hand.

Partial Credit: Student correctly identifies only one representation for the number 6.

No Credits: Student is unable to represent the number 6 using his/her fingers on both hands.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 6 – Teen Numbers (11-19) and Counting to 100

Pacing: 4 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices

Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning.

Practices in bold are to be emphasized in the unit.

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.

Domain and Standards Overview

Counting and Cardinality K.CC

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

Operations and Algebraic Thinking K.OA

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

Number and Operations in Base Ten K.NBT.

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

Priority and Supporting CCSS	Explanations and Examples*
K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality. **a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.** **b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.** **c. Understand that each successive number name refers to a quantity that is one larger.**	K.CC.4. This standard focuses on one-to-one correspondence and how cardinality connects with quantity. • For example, when counting three bears, the student should use the counting sequence, "1-2-3," to count the bears and recognize that "three" represents the group of bears, not just the third bear. A student may use an interactive whiteboard to count objects, cluster the objects, and state, "This is three" (Cardinality tells "how many"). In order to understand that each successive number name refers to a quantity that is one larger, students should have experience counting objects, placing one more object in the group at a time. • For example, using cubes, the student should count the existing group, and then place another cube in the set. Some students may need to re-count from one, but the goal is that they would count on from the existing number of cubes. S/he should continue placing one more cube at a time and identify the total number in order to see that the counting sequence results in a quantity that is one larger each time one more cube is placed in the group. • A student may use a clicker (electronic response system) to communicate his/her count to the teacher.
K.CC.1. Count to 100 by ones and by tens.	K.CC.1.The emphasis of this standard is on the counting sequence (rote counting). When counting by ones, students need to understand that the next number in the sequence is one more. When counting by tens, the next number in the sequence is "ten more" (or one more group of ten). **Continued on next page**

Priority and Supporting CCSS	Explanations and Examples*
	K.CC.1. Continued Instruction on the counting sequence should be scaffolded (e.g., 1-10, then 1-20, etc.). When counting orally, students should recognize the patterns that exist from 1 to 100. They should also recognize the patterns that exist when counting by 10s Counting should be reinforced throughout the day, not in isolation. Examples: • Count the number of chairs of the students who are absent. • Count the number of stairs, shoes, etc. • Count groups of ten such as "fingers in the classroom" (ten fingers per student).
K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	K.CC.2. The emphasis of this standard is on the counting sequence to 100. Students should be able to count forward from any number, 1-99.
K.CC.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	K.CC.5. Students should develop counting strategies to help them organize the counting process to avoid re-counting or skipping objects. Examples: • If items are placed in a circle, the student may mark or identify the starting object. • If items are in a scattered configuration, the student may move the objects into an organized pattern. • Some students may choose to use grouping strategies such as placing objects in twos, fives, or tens (note: this is not a kindergarten expectation). • Counting up to 20 objects should be reinforced when collecting data to create charts and graphs. A student may use a clicker (electronic response system) to communicate his/her count to the teacher.

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
K.NBT.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed by ten ones and one, two, three, four, five, six, even, eight, or nine ones.	K.NBT.1 Special attention needs to be paid to this set of numbers as they do not follow a consistent pattern in the verbal counting sequence. • Eleven and twelve are special number words. • "Teen" means one "ten" plus ones. • The verbal counting sequence for teen numbers is backwards – we say the ones digit before the tens digit. For example "27" reads tens to ones (twenty-seven), but 17 reads ones to tens (seven-teen). • In order for students to interpret the meaning of written teen numbers, they should read the number as well as describe the quantity. For example, for 15, the students should read "fifteen" and state that it is one group of ten *and* five ones and record that 15 = 10 + 5. Teaching the teen numbers as one group of ten and extra ones is foundational to understanding both the concept and the symbol that represent each teen number. For example, when focusing on the number "14," students should count out fourteen objects using one-to-one correspondence and then use those objects to make one group of ten ones and four additional ones. Students should connect the representation to the symbol "14." Students should recognize the pattern that exists in the teen numbers; every teen number is written with a 1 (representing one ten) and ends with the digit that is first stated.
K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings *, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. * Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)	**K.OA.1**. Using addition and subtraction in a word problem context allows students to develop their understanding of what it means to add and subtract. Students should use objects, fingers, mental images, drawing, sounds, acting out situations and verbal explanations in order to develop the concepts of addition and subtraction. Then, they should be introduced to writing expressions and equations using appropriate terminology and symbols which include "+," "–," and "=". • Addition terminology: add, join, put together, plus, combine, total • Subtraction terminology: minus, take away, separate, difference,

Priority and Supporting CCSS	Explanations and Examples*
	compare Students may use document cameras or interactive whiteboards to represent the concept of addition or subtraction. This gives them the opportunity to communicate their thinking.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 6 – Teen Numbers (11-19) and Counting to 100

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Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels
Number	COUNT (objects)	1
Relationship between: • Number and quantity • Counting & cardinality • Number names	SAY numbers (in order)	2
	PAIR (each object with one number)	3
Number of objects: • Greater than • Less than • Equal to	UNDERSTAND • (last number name tells objects counted) • (number of objects is the same regardless of arrangement) • (number of objects is the same regardless of order) • (each successive number refers to a quantity that is one larger)	
Addition	IDENTIFY (compare) groups of objects	
Subtraction	REPRESENT (addition and subtraction) with:	2
	• Objects	3
	• Fingers	
	• Drawings	
	• Sounds	
	• Equations	
	• Expressions	
	ACT out one situation	
	EXPLAIN (addition and subtraction)	

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 6 – Teen Numbers (11-19) and Counting to 100

Essential Questions

Corresponding Big Ideas

Standardized Assessment Correlations (State, College and Career)
Expectations for Learning (in development) This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.

Unit Assessments The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

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Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 7 – Identify & Describe 2-D & 3-D Shapes

Pacing: 2 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices

Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning.

Practices in bold are to be emphasized in the unit.

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.

Domain and Standards Overview

Geometry K.G.

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

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Priority and Supporting CCSS	Explanations and Examples*
K.G.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.	**K.G.1.** Examples of environments in which students would be encouraged to identify shapes would include nature, buildings, and the classroom using positional words in their descriptions. Teachers should work with children and pose four mathematical questions: Which way? How far? Where? And what objects? To answer these questions, children develop a variety of important skills contributing to their spatial thinking. Examples: • Teacher holds up an object such as an ice cream cone, a number cube, ball, etc. and asks students to identify the shape. Teacher holds up a can of soup and asks," What shape is this can?" Students respond "cylinder!" • Teacher places an object next to, behind, above, below, beside, or in front of another object and asks positional questions. Where is the water bottle? (water bottle is placed behind a book) Students say "The water bottle is behind the book." Students should have multiple opportunities to identify shapes; these may be displayed as photographs, or pictures using the document camera or interactive whiteboard.
K.G.2. Correctly name shapes regardless of their orientations or overall size.	K.G.2. Students should be exposed to many types of triangles in many different orientations in order to eliminate the misconception that a triangle is always right-side-up and equilateral.  **Continued on next page**

Priority and Supporting CCSS	Explanations and Examples*
	K.G.2. Continued Students should also be exposed to many shapes in many different sizes. Examples: • Teacher makes pairs of paper shapes that are different sizes. Each student is given one shape and the objective is to find the partner who has the same shape. • Teacher brings in a variety of spheres (tennis ball, basketball, globe, ping pong ball, etc) to demonstrate that size doesn't change the name of a shape.
K.G.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	K.G.3. Student should be able to differentiate between two dimensional and three dimensional shapes. • Student names a picture of a shape as two dimensional because it is flat and can be measured in only two ways (length and width). • Student names an object as three dimensional because it is not flat (it is a solid object/shape) and can be measured in three different ways (length, width, height/depth).
K.G.4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	**K.G.4.** Students analyze and compare two- and three-dimensional shapes by observations. Their visual thinking enables them to determine if things are alike or different based on the appearance of the shape. Students sort objects based on appearance. Even in early explorations of geometric properties, they are introduced to how categories of shapes are subsumed within other categories. For instance, they will recognize that a square is a special type of rectangle. **Continued on next page**

Priority and Supporting CCSS	Explanations and Examples*
	K.G.4. Continued Students should be exposed to triangles, rectangles, and hexagons whose sides are not all congruent. They first begin to describe these shapes using everyday language and then refine their vocabulary to include sides and vertices/corners. Opportunities to work with pictorial representations, concrete objects, as well as technology helps student develop their understanding and descriptive vocabulary for both two- and three-dimensional shapes.
K.G. 5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. (This priority standard is supporting in this unit.)	**K.G.5.** Because two-dimensional shapes are flat and three-dimensional shapes are solid, students should draw two-dimensional shapes and build three-dimensional shapes. Shapes may be built using materials such as clay, toothpicks, marshmallows, gumdrops, straws, etc.
K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. * * Limit category counts to be less than or equal to 10.	K.MD.3. Possible objects to sort include buttons, shells, shapes, beans, etc. After sorting and counting, it is important for students to: • explain how they sorted the objects; • label each set with a category; • answer a variety of counting questions that ask, "How many…", and • compare sorted groups using words such as "most", "least", "alike", and "different".

Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 7 – Identify & Describe 2-D & 3-D Shapes

Shapes Relative positions Two- and three-dimensional shapes • Similarities • Differences • Parts • Attributes	DESCRIBE (objects in the environment) USE • (Names of shapes) • Terms (positions) ANALYZE (two- and three-dimensional shapes) COMPARE (two- and three-dimensional shapes) DESCRIBE (similarities and differences, parts, and other attributes)	2 4

Essential Questions
Corresponding Big Ideas
Standardized Assessment Correlations (State, College and Career)
Expectations for Learning (in development) This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.
Unit Assessments **The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.**

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 8 – Compare, Analyze and Compose 2-D and 3-D Shapes

Pacing: 2 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices

Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning.

Practices in bold are to be emphasized in the unit.

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.

Domain and Standards Overview

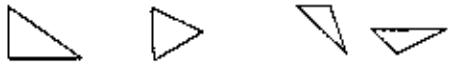
Geometry K.G.

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

Measurement and Data K.MD.

- Describe and compare measureable attributes

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 8 – Compare, Analyze and Compose 2-D and 3-D Shapes

Priority and Supporting CCSS	Explanations and Examples*
K.G.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.	**K.G.1.** Examples of environments in which students would be encouraged to identify shapes would include nature, buildings, and the classroom using positional words in their descriptions. Teachers should work with children and pose four mathematical questions: Which way? How far? Where? And what objects? To answer these questions, children develop a variety of important skills contributing to their spatial thinking. Examples: • Teacher holds up an object such as an ice cream cone, a number cube, ball, etc. and asks students to identify the shape. Teacher holds up a can of soup and asks," What shape is this can?" Students respond "cylinder!" • Teacher places an object next to, behind, above, below, beside, or in front of another object and asks positional questions. Where is the water bottle? (water bottle is placed behind a book) Students say "The water bottle is behind the book."
K.G.2. Correctly name shapes regardless of their orientations or overall size.	K.G.2. Students should have multiple opportunities to identify shapes; these may be displayed as photographs, or pictures using the document camera or interactive whiteboard. Students should be exposed to many types of triangles in many different orientations in order to eliminate the misconception that a triangle is always right-side-up and equilateral.  **Continued on next page**

Priority and Supporting CCSS	Explanations and Examples*
	K.G.2 Continued Students should also be exposed to many shapes in many different sizes. Examples: • Teacher makes pairs of paper shapes that are different sizes. Each student is given one shape and the objective is to find the partner who has the same shape. Teacher brings in a variety of spheres (tennis ball, basketball, globe, ping pong ball, etc) to demonstrate that size doesn't change the name of a shape.
K.G.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three dimensional ("solid").	K.G.3. Student should be able to differentiate between two dimensional and three dimensional shapes. • Student names a picture of a shape as two dimensional because it is flat and can be measured in only two ways (length and width). • Student names an object as three dimensional because it is not flat (it is a solid object/shape) and can be measured in three different ways (length, width, height/depth).
K.G.4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	**K.G.4.** Students analyze and compare two- and three-dimensional shapes by observations. Their visual thinking enables them to determine if things are alike or different based on the appearance of the shape. Students sort objects based on appearance. Even in early explorations of geometric properties, they are introduced to how categories of shapes are subsumed within other categories. For instance, they will recognize that a square is a special type of rectangle. **Continued on next page** **K.G.4.** Continued

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Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 8 – Compare, Analyze and Compose 2-D and 3-D Shapes

Priority and Supporting CCSS	Explanations and Examples*
	Students should be exposed to triangles, rectangles, and hexagons whose sides are not all congruent. They first begin to describe these shapes using everyday language and then refine their vocabulary to include sides and vertices/corners. Opportunities to work with pictorial representations, concrete objects, as well as technology helps student develop their understanding and descriptive vocabulary for both two- and three- dimensional shapes.
K.G.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes *(This priority standard is supporting in this unit.)*	K.G.5. Because two-dimensional shapes are flat and three-dimensional shapes are solid, students should draw two-dimensional shapes and build three-dimensional shapes. Shapes may be built using materials such as clay, toothpicks, marshmallows, gumdrops, straws, etc.
K.G.6. Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*	K.G.6. Students use pattern blocks, tiles, or paper shapes and technology to make new two- and three-dimensional shapes. Their investigations allow them to determine what kinds of shapes they can join to create new shapes. They answer questions such as "What shapes can you use to make a square, rectangle, circle, triangle? …etc." Students may use a document camera to display shapes they have composed from other shapes. They may also use an interactive whiteboard to copy shapes and compose new shapes. They should describe and name the new shape

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 8 – Compare, Analyze and Compose 2-D and 3-D Shapes

Priority and Supporting CCSS	Explanations and Examples*
K.MD.2. Students use pattern blocks, tiles, or paper shapes and technology to make new two- and three-dimensional shapes. Their investigations allow them to determine what kinds of shapes they can join to create new shapes. They answer questions such as "What shapes can you use to make a square, rectangle, circle, triangle? ...etc." **Students may use a document camera to display shapes they have composed from other shapes. They may also use an interactive whiteboard to copy shapes and compose new shapes. They should describe and name the new shape**	**K.MD.2.** When making direct comparisons for length, students must attend to the "starting point" of each object. For example, the ends need to be lined up at the same point, or students need to compensate when the starting points are not lined up (conservation of length includes understanding that if an object is moved, its length does not change; an important concept when comparing the lengths of two objects). Language plays an important role in this standard as students describe the similarities and differences of measurable attributes of objects (e.g., shorter than, taller than, lighter than, the same as, etc.). An interactive whiteboard or document camera may be used to compare objects with measurable attributes.

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Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 8 – Compare, Analyze and Compose 2-D and 3-D Shapes

Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels
Shapes	DESCRIBE (objects in the environment)	2
Relative positions	USE:	4
Two and three dimensional shapes • Parts Similarities • Differences • Parts • Attributes	• (Names of shapes) • (Terms (positions)) ANALYZE (two and three dimensional shapes) COMPARE (two and three dimensional shapes) DESCRIBE (similarities and differences, parts and attributes)	
Attributes • Measurable • Common • Differences	BUILD DRAW COMPARE (two objects) DESCRIBE (differences)	 2 4

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 8 – Compare, Analyze and Compose 2-D and 3-D Shapes

Essential Questions*

Corresponding Big Ideas

Standardized Assessment Correlations (State, College and Career)
Expectations for Learning (in development) This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.

Unit Assessments The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

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*Adapted from the Arizona Academic Content Standards

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 9 – Measurement by Direct Comparison

Pacing: 4 weeks (plus 1 week for reteaching/enrichment)

Mathematical Practices
Mathematical Practices #1 and #3 describe a classroom environment that encourages thinking mathematically and are critical for quality teaching and learning. *Practices in bold are to be emphasized in the unit.* **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.
Domain and Standards Overview
Measurement and Data K.MD • Describe and compare measureable attributes. • Classify objects and count the number of objects in each category.

Connecticut Curriculum Design Unit Planning Organizer
Kindergarten Mathematics
Unit 9 – Measurement by Direct Comparison

Priority and Supporting CCSS	Explanations and Examples*
K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. ***For example, directly compare the heights of two children and describe one child as taller/shorter.***	**K.MD.2** When making direct comparisons for length, students must attend to the "starting point" of each object. For example, the ends need to be lined up at the same point, or students need to compensate when the starting pints are not lined up (conservation of length includes understanding that if an object is moved, its length does not change; an important concept when comparing the lengths of two objects). Language plays an important role in this standard as students describe the similarities and differences of measureable attributes of objects (e.g., shorter than, taller than, lighter than, the same as, etc.). An interactive whiteboard or document camera may be used to compare objects with measurable attributes.
K.MD.1. Describe measurable attributes of objects, such as length or weigh. Describe several measurable attributes of a single object.	K.MD.1. In order to describe attributes such as length and weight, students must have many opportunities to informally explore these attributes. • Students should compare objects verbally and then focus on specific attributes when making verbal comparisons for K.MD.2. They may identify measureable attributes such as length, width, height, and weight. For example, when describing a soda can, a student may talk about how tall, how wide, how heavy, or how much liquid can fit inside. These are all measurable attributes. Non-measurable attributes include: words on the object, colors, pictures, etc. An interactive whiteboard or document camera may be used to model objects with measurable attributes.

Concepts What Students Need to Know	Skills What Students Need To Be Able To Do	Bloom's Taxonomy Levels

Adapted from The Leadership and Learning Center "Rigorous Curriculum Design" model.
*Adapted from the Arizona Academic Content Standards.

Attributes • Measureable • Common • Differences	Compare (two objects) Describe (differences)	2 4

Essential Questions

Corresponding Big Ideas

Standardized Assessment Correlations (State, College and Career)

Expectations for Learning (in development)
This information will be included as it is developed at the national level. CT is a governing member of the Smarter Balanced Assessment Consortium (SBAC) and has input into the development of the assessment.

Unit Assessments
The items developed for this section can be used during the course of instruction when deemed appropriate by the teacher.

WESTPORT PUBLIC SCHOOLS

ELLIOTT LANDON
Superintendent of Schools

110 MYRTLE AVENUE
WESTPORT, CONNECTICUT 06880
TELEPHONE: (203) 341-1010
FAX: (203) 341-1029

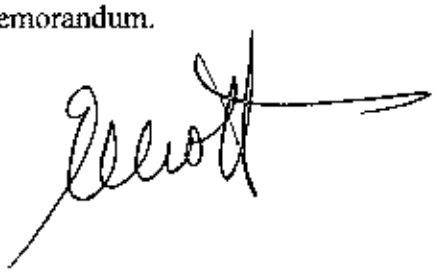
To: Members of the Board of Education

From: Elliott Landon

Subject: Five Day, Full Day Kindergarten

Date: April 8, 2013

The Board of Education decided to enable public discussion on the above-referenced subject at its March 28 meeting and to vote upon the matter at its meeting of April 8. A number of documents have been submitted to the Board by the Administration in support of the five day, full day Kindergarten proposal over the past several months and a compilation of those may be found appended to this memorandum.



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WESTPORT, CONNECTICUT 06880
TELEPHONE: (203) 341-1010
FAX: (203) 341-1029

To: Members of the Board of Education

From: Elliott Landon

Subject: Misinformation Being Disseminated With Regard to 5 Day, Full Day Kindergarten

Date: April 1. 2013

There has been a significant amount of misinformation circulating in the past two weeks through those opposed to five day, full day Kindergarten. I wish to address the collective misinformation, falsehoods and distortions of evidence being promulgated by sharing the following with you.

1. **Kindergarten teachers do not provide additional small group instruction to students on the two extended days.**

   On one of the extended days, the Kindergarten teachers only engage in planning and grade level team meetings

   On the second extended day, the Kindergarten teachers are assigned to cover a grade level class for one hour. The coverage they provide is for an entire class, using substitute plans left by the teachers. This one hour coverage allows for other teachers and support staff to attend RTI meetings. The remaining time of the day when students are not present is provided to the teachers as additional planning time beyond that which they are given on the first extended day

   The elementary administrative team has developed several alternatives for coverage of RTI meetings, none of which will have budgetary implications or negatively impact our students.

2. **The proposal for full-day kindergarten in Westport will result in a budget reduction resulting from the elimination of the additional bus runs currently required for the early dismissal of Kindergarten students on the two shortened days.**

   A recent letter from a parent stated that Wilton's recent vote to approve full-day kindergarten has resulted in additional unforeseen budgetary expenditures. *This is absolutely not true*. I had a conversation with the Wilton Superintendent of Schools, Dr. Gary Richards, on Thursday, March 28, 2013, and he confirmed that Wilton will experience budgetary savings in the neighborhood of $175,000 because of the reduction of mid-day bus runs for kindergarten students.

3. **There are *no other tests* being mandated by the Common Core or the state regarding Kindergarten students.** In Westport, we have *always* used district assessments/benchmark assessments/universal screeners to evaluate student performance. Universal screeners are part of the RTI process and are used at all grade levels, K-5. They will continue to be used in Kindergarten whether we maintain our current program or move to five day, full day.

Elliott

April 1, 2013

To: Elliott Landon, Superintendent of Schools
Board of Education, Westport Public Schools

From: Cynthia Gilchrest, Director of Elementary Education
Dr. Susie Da Silva, Principal, King's Highway Elementary School
Elementary Leadership Team

Dear Board of Education,

In response to Mark's recent email requesting the quantifiable differences among the CCSS and what we have taught in previous years in kindergarten, please see the following response:

- It is important to note that the CCSS does not only impact the kindergarten curriculum, it also impacts all other grade-levels. This means that what was previously taught in other grades has influenced changes in all grades, as the standards from higher grades are now the expectations of lower grades. This, in fact, is one of the reasons that the elementary leadership group requested instructional minutes changes in grades K-5.
- In addition to our kindergarten curriculum, we have implemented changes in our instructional practices, such as Concrete-Pictorial-Abstract teaching practices in mathematics and a balanced literacy framework, that not only allow us to address the CCSS in a developmentally appropriate manner, but also meet the goals of our Westport 2025 initiative.
- The request for full-day has been a request for many years as a result of the challenges in meeting/delivering the previous curriculum. Data shows 25% of our current first graders are not meeting benchmark as measured by the State of CT Department of Education DRA2 Guidelines. In addition, 90 of our current first graders are receiving RTI support. We believe that by providing the additional hours in kindergarten we can provide the basic foundational skills necessary for our students to excel. The CCSS is a significant variable in that it has changed our curriculum, that was already a challenge to meet/deliver, in that it is now far more rigorous than the standards we previously had.
- An example of a crosswalk of the district curriculum and CCSS for kindergarten was provided to the BOE in the binder on March 18th. Further crosswalk data for kindergarten is attached in this email. The attachments include a breakout of the CCSS for Math and Literacy (Literature, Information, and Foundational Skills). Below you will find an explanation of the major shifts found within the Literacy Crosswalk.

<u>CCSS and Previous Westport Kindergarten Curriculum Crosswalk Summary</u>
You will notice that under the previous Westport Literacy Outcomes many of the indicators specifically outline delivery and exposure through *shared reading, read aloud, interactive writing,*

and *group discussions and activities*.

We previously considered students mastering a standard if they were able to do so within the context of a group activity in which the teacher was reading the book aloud. Some students mastered the previous outcomes while reading independently, and others did not.

Now, through the Common Core State Standards, the expectation is that the student is meeting the standard while independently reading grade level text. To meet the CCSS, teachers will be responsible for *all* students meeting these standards. This is a formidable shift. This requires the teacher to move about the classroom, constantly conferring, informally assessing, and matching instruction for each student.

Teachers will still address Literature Standards K.RL.1-K.RL.10 and Informational Standards K.RI.1-K.RI.10 within group discussions, shared reading, and read aloud activities; however, in addition, students must also demonstrate these standards while independently reading grade level text. This requires a significant increase in time and increase in critical thinking from the students.

The CCSS delineate Literature and Informational text. That shift to include Informational text is significant because it is more challenging for children to think about the ideas in informational text. They certainly have been exposed to informational text and illustrations, but they have not thought about ideas, compared two texts on the same topic, considered the craft and structure that the author used to create the text. They have not been expected to ask and answer questions about unknown words. Not only are the students going to be confronted with this shift in whole group activities, but also in their independent reading. Even though these skills are more challenging for students, many kindergarten students often prefer informational text. This is allowing students to be thoughtful, engaged, "minds on fire" kinds of readers who ponder and grapple with big ideas, rather than simply identifying facts or read quickly through books that they can successfully decode.

In addition, there are specific standards for speaking and listening under the Common Core State Standards which were not previously included in our previous curriculum standards.

The Balanced Literacy framework which has Word Study, Guided Reading, Shared Reading, Interactive Writing, Interactive Read Aloud, Writing Workshop, and Reading Workshop requires 120 minutes to be taught well.

CCSS also include 8 standards for mathematical practice, which describe skills and dispositions that we want to see in mathematicians. They show how, "developing student practitioners of math increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the years."
These standards include:

- Make sense of problems and persevere in solving them

- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

The approaches we are using in Singapore Math and the Balanced Literacy format are based on the natural way children learn best. The Concrete-Pictorial-Abstract and the gradual release of responsibility methods of teaching take time to effectively incorporate.

Common Core Standards and Previous Westport Kindergarten Math

Common Core Standard	Previous Westport Curriculum (CT Framework)
*Standards in RED indicate new/ modified expectations which were not addressed in the previous Westport curriculum.	
Counting and Cardinality K.CC	
Know number names and the count sequence.	
1. Count to 100 by ones and by tens.	• Count to and past 10 to 20, then to 30, and group and count objects by 10.
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	
3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	• Identify the numerals 1-10 and match sets of objects to the numerals
Count to tell the number of objects.	
4. Understand the relationship between numbers and quantities; connect counting to cardinality.	• Identify ordinal position of objects, first through fifth, and last.
a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	• Use numbers to locate, order, label and measure.
b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	
c. Understand that each successive number name refers to a quantity that is one larger.	• Count, adding one more to the previous number, and group and count by ones and tens.
5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	• Act out story problems and solve practical problems using objects. • Estimate the number of objects in a handful, and then count to verify.
Compare numbers.	
6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	• Compare sets using the terms "more," "less" or "the same" and order sets from least to greatest.
7. Compare two numbers between 1 and 10 presented as written numerals.	

Operations and Algebraic Thinking K.OA	
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	
1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	• Act out story problems and solve practical problems using objects.
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	
3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	
4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	
5. Fluently add and subtract within 5.	
Number and Operations in Base Ten K.NBT	
Work with numbers 11–19 to gain foundations for place value.	
1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten and ones.	
Measurement and Data K.MD	
Describe and compare measurable attributes.	
1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	• Explore, describe and discuss strategies to estimate length, area, temperature and weight using nonstandard units to compare. • Explore using everyday objects as nonstandard units to measure length, area and capacity.
2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	• Compare the weight of two objects using a balance scale and identify which is heavier. • Construct real graphs and picture graphs and describe the data using the terms more, less and same.

Classify objects and count the number of objects in each category.	
3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	• Organize information through systematic counting, sorting, making lists and graphic organizers.
Geometry K.G	
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	
1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind,* and *next to*.	• Identify, sort and compare two- and three-dimensional shapes and solids in the environment, such as triangles, squares, rectangles, circles, cubes, spheres, cylinders and cones. • Describe the position, location and direction of objects, or parts of objects, using terms such as inside, outside, top, bottom, close, closer, etc.
2. Correctly name shapes regardless of their orientations or overall size.	• Identify, sort and compare two- and three-dimensional shapes and solids in the environment, such as triangles, squares, rectangles, circles, cubes, spheres, cylinders and cones.
3. Identify shapes as two-dimensional (lying in a plane, "flat") or three dimensional ("solid").	
Analyze, compare, create, and compose shapes.	
4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	• Sort, order, compare and use comparative language to describe small sets of objects sequenced by size, length, area and volume.
5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	• Use a variety of materials to create geometric shapes and solids and build copies of simple shapes and designs by direct observation and by visual memory.
6. Compose simple shapes to form larger shapes. *For example,* *"Can you join these two triangles with full sides touching to make a rectangle?"*	• Use a variety of models to identify a whole and a half of an object. • Recognize that two halves can be put together to make a whole.

Kindergarten Crosswalk
CCSS and Previous Westport Literacy Outcomes

COMMON CORE STATE STANDARDS	Previous Westport Kindergarten Literacy Outcomes
*Standards in RED indicate new/ modified expectations which were not addressed in the previous Westport curriculum.	
*With the new CCSS reading units, students are addressing the standards in Reading Workshop, with texts at their Just Right reading levels (independent reading), in addition to whole group activities and shared reading experiences.	*Under the previous curriculum outcomes, students were addressing the Westport standards in whole group activities and shared reading experiences. It was not the expectation for students to be meeting the standards with their independent reading at their Just Right reading levels.
Reading: Literature Standards	
Key Ideas and Details	
K.RL.1 With prompting and support, ask and answer questions about key details in a text.	• Begins to answer literal and inferential questions about grade appropriate books during *shared reading*.
K.RL.2 With prompting and support, retell familiar stories, including key details.	• Retells a story orally including events in sequence, key facts, important details and characters or topics.
K.RL.3 With prompting and support, identify characters, settings, and major events of a story.	• *Exposed to* the following story elements during *shared reading, read aloud, shared writing, interactive writing*: ○ Character ○ Setting ○ Problem/solution
Craft and Structure	
K.RL.4 Ask and answer questions about unknown words in a text.	*New in CCSS.
K.RL.5 Recognize common types of texts (e.g., storybooks, poems).	• Recognize different genres of books such as fiction, non-fiction, folk takes, fairy tales, and poetry.
K.RL.6 With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.	• Differentiate roles of the author and the illustrator.
Integration of Knowledge and Ideas.	
K.RL.7 With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts.)	• Begins to understand that titles and pictures help the author tell a story.
K.RL.9 With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.	• Begin to identify that books have characters, setting, and plot.
Range of Reading and Level of Text Complexity	
K.RL.10 Actively engage in group reading activities with purpose and understanding.	• Participate in group discussions and activities.

Kindergarten Crosswalk
CCSS and Previous Westport Literacy Outcomes

Reading: Information Text	
Key Ideas and Details	
K.RIT.1 With prompting and support, ask and answer questions about key details in a text.	• Ask questions before, during, and after reading, with assistance.
K.RIT.2 With prompting and support, identify the main topic and retell key details of a text.	• Begins to identify the main idea and details in non-fiction *through shared reading.*
K.RIT.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.	• Listen to and/or observe literature in order to gather information, answer questions, develop personal interests, and make connections.
Craft and Structure	
K.RIT.4 Ask and answer questions about unknown words in a text.	• *New with CCSS.*
K.RIT.5 Identify the front cover, back cover, and title page of a book.	• Identify interior parts of a book including title page, dedication page, table of contents, and index.
K.RIT.6 Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.	• Differentiate roles of the author and the illustrator.
Integration of Knowledge and Ideas.	
K.RIT.7 With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts.)	• *New with CCSS for Informational Text.*
K.RIT.8 With prompting and support, identify the reasons an author gives to support points in a text.	• *New with CCSS.*
K.RIT.9 With prompting and support, identify basics similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).	• *New with CCSS.*
Range of Reading and Level of Text Complexity	
K.RIT.10 Actively engage in group reading activities with purpose and understanding.	• Communicate opinions about literature in oral, pictorial, or written format.
Reading: Foundational Skills	
Print Concepts	
K.RFS.1 Demonstrate understanding of the organization and basic features of print.	
K.RFS.1.a Follow words from left to right, top to bottom, and page by page.	• Begins to track print from top to bottom and left to right on the page.

Kindergarten Crosswalk
CCSS and Previous Westport Literacy Outcomes

K.RFS.1.b Recognize that spoken words are represented in written language by specific sequences of letters.	• Understands that printed words are related to spoken words and spoken words can be written and read.
K.RFS.1.c Understand that words are separated by spaced in print.	• Recognizes that words are separated by spaces.
K.RFS.1.d Recognize and name all upper- and lowercase letters of the alphabet.	• Recognizes and names upper and lower case letters.
Phonological Awareness	
K.RFS.2 Demonstrate understanding of spoken words, syllables, and sounds (phonemes).	• Segments words in an oral sentence, words into syllables, and syllables into sounds.
K.RFS.2.a Recognize and produce rhyming words.	• Discriminates and produces rhyming words.
K.RFS.2.b Count, pronounce, blend, and segment syllables in spoken words.	• Segment words into syllables.
K.RFS.2.c Blend and segment onsets and rimes of single-syllables in spoken words.	• *New with CCSS.*
K.RFS.2.d Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words.	• Segments and isolates initial, medial, and final sounds of orally presented CVC (consonant-vowel-consonant) words.
K.RFS.2.e Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words.	• *New with CCSS.*
Phonics and Word Recognition	
K.RFS.3 Know and apply grade-level phonics and word analysis skills in decoding words.	• Reads CVC words.
K.RFS.3.a Demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant.	• Names sounds for the consonants and short vowels.
K.RFS.3.b Associate the long and short sounds with the common spellings (graphemes) for the five major vowels.	• Names sounds for the consonants and short vowels. *Long vowels previously not addressed.
K.RFS.3.c Read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does).	• Begins to build high frequency word recognition in isolation and in context.
K.RFS.3.d Distinguish between similarly spelled words by identifying the sounds of the letters that differ.	• *New with CCSS.*
Fluency	
K.RFS.4 Read emergent-reader texts with purpose and understanding.	• Begins to read with correct phrasing and expression.

MATERIAL FROM BOARD AGENDA

DECEMBER 17, 2012

WESTPORT PUBLIC SCHOOLS

ELLIOTT LANDON
Superintendent of Schools

110 MYRTLE AVENUE
WESTPORT, CONNECTICUT 06880
TELEPHONE: (203) 341-1010
FAX: (203) 341-1029

To: Members of the Board of Education

From: Elliott Landon

Subject: K-5 Benchmarking

Date: December 17, 2012

In response to one of the action plans approved by the Board of Education as part of its Goals, the Board asked the Administration to benchmark ourselves against the best school systems in a number of elementary and secondary areas. Cynthia Gilchrest, Director of Elementary Education will headline a presentation to the Board of Education at our meeting scheduled for Monday, December 17. Cyndy will be joined by all of our elementary principals and assistant principals and other members of the elementary leadership team who will be presenting, A Profile of the Westport Public Schools Elementary Program: A Benchmark Assessment.

The presentation will focus on the following points:

1. The reasons for benchmarking at this time
2. Data gathering
3. DRG Data on class size and full-day Kindergarten
4. Analysis of best practices in elementary schools
5. An analysis and review of current practice in Westport's elementary schools
6. An analysis and review of current practice in DRG A elementary schools
7. Time dedicated to language arts and special area subjects in DRG A elementary schools
8. The integration of technology into elementary instructional time
9. Proposed modifications to Kindergarten and Grade 5 schedules

During that same meeting, Lis Comm, Director of Secondary Education will be joined by our two middle school principals and our Department Chair for Science, 6-12, to address a proposed middle school elective that benchmarking has demonstrated is being offered in some of the finest school systems in the country.

Additionally, I have had research performed with regard to historic class size trends in Westport, indicating what the impact might be were we to change our class guidelines at the elementary level, in particular.

You will find appended to this memorandum two others, one from Lis Comm to me that provides background material for a middle school design and engineering course and another from me to the Board discussing class size history and the financial implications of change.

Elliott

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Superintendent of Schools

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WESTPORT, CONNECTICUT 06880
TELEPHONE: (203) 341-1010
FAX: (203) 341-1029

To: Members of the Board of Education

From: Elliott Landon

Subject: Class Size History

Date: December 17, 2012

The members of the Board of Education, as part of our Goals and Objectives for the 2012-13 school year, requested an analysis of class size history in the Westport Public Schools.

At my request, Nancy Harris has created a spreadsheet that compares class size enrollments in second grade for the 10 year period from 2003-2012 using a maximum class size guideline of 25 students per class v. 22 students per class, making use of present breakpoints. The effect of such a change in guidelines would create a maximum class size guideline of 22 for all classroom sections in Kindergarten, Grade 1 and Grade 2.

As you can see from the analysis, were we to change our maximum class size guidelines at the second grade level to 22 from the current 25, with retention of the current breakpoints, on average we could expect to add 2 full-time teachers to our budget, at a projected cost of $140,000 to include benefits. Additionally, at a cost of $70,800 we would be required to add 0.8 special area teachers and 0.4 paraprofessionals.

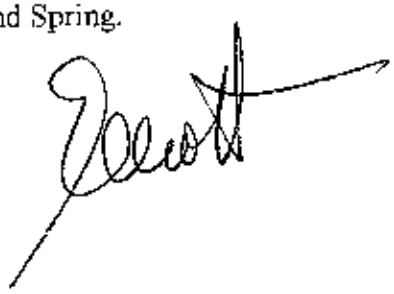
Based on projected enrollments, were we to implement a reduction in the maximum class size guidelines for grades 3-5 in the 2013-14 school year, similar to the reduction shown for grade 2 and retaining the current breakpoints, the impact would require us to add 5 full-time teachers in grades 3-5: 1 at grade 3; 1 at grade 4; and, 3 at grade 5. The total estimated cost of this increase in staff, with benefits would be $350,000. Additionally, we would be required to add 2.0 special area teachers at a combined cost of $140,000 and 0.2 paraprofessional for the third grade class at a cost of $7,400.

Thus, for the upcoming 2013-14 school year, any reductions to current elementary school maximum class sizes from 25 to 22 in grades 2-5, would require us to add 7 teachers, 2.8 special area teachers, and 0.6 paraprofessional to our 2013-14 proposed operating budget at an average net cost of salaries and benefits of $708,200.

Such a change in maximum class size guidelines also would impact our space needs, requiring us to modify the interiors of certain of our schools to accommodate the increase in classes, where possible; place students in sub-standard spaces for instruction; or, re-district in an attempt to balance enrollments in a concerted effort to equitably re-distribute students throughout our schools.

The issue of class sizes is not applicable to the middle schools, where our teaming structure continues to be able to accommodate groups of 80-110 students. For Staples, with approximately 1,900 students expected in the next school year in a building constructed for only 1,800, without any change in class size guidelines, space limitations prohibit us from reducing our class size guidelines below their current maxima.

I have included for your review a listing of current class sizes at Staples for full year and all semester courses, both Fall and Spring.



WESTPORT PUBLIC SCHOOLS
ANALYSIS OF ENROLLMENT AND CLASS SIZE ON OCTOBER 1
10 YEAR COMPARISON FOR SECOND GRADE

	CES		GFS		KHS		LLS		SES		TOTAL		DIFFERENCE
BREAKPOINT	25	22	25	22	25	22	25	22	25	22	25	22	
YEAR													
2012	75		75		73		107		91		421		
SECTIONS	4	4	4	4	3	4	5	5	4	5	20	22	2
AVE CLASS SIZE	18.75	18.75	18.75	18.75	24.33	18.25	21.40	21.40	22.75	18.20	21.05	19.14	(1.91)
2011	82		70		86		101		84		423		
SECTIONS	4	4	3	4	4	4	5	5	4	4	20	21	1
AVE CLASS SIZE	20.50	20.50	23.33	17.50	21.50	21.50	20.20	20.20	21.00	21.00	21.15	20.14	(1.01)
2010	84		75		88		99		95		441		
SECTIONS	4	4	4	4	4	5	5	5	4	5	21	23	2
AVE CLASS SIZE	21.00	21.00	18.75	18.75	22.00	17.60	19.80	19.80	23.75	19.00	21.00	19.17	(1.83)
2009	66		79		80		88		93		406		
SECTIONS	3	4	4	4	4	4	4	5	4	5	19	22	3
AVE CLASS SIZE	22.00	16.50	19.75	19.75	20.00	20.00	22.00	17.60	23.25	18.60	21.37	18.45	(2.91)
2008	95		77		75		110		73		430		
SECTIONS	4	5	4	4	4	4	5	5	3	4	20	22	2
AVE CLASS SIZE	23.75	19.00	19.25	19.25	18.75	18.75	22.00	22.00	24.33	18.25	21.50	19.55	(1.95)
2007	75		85		99		101		101		461		
SECTIONS	4	4	4	4	5	5	5	5	5	5	23	23	-
AVE CLASS SIZE	18.75	18.75	21.25	21.25	19.80	19.80	20.20	20.20	20.20	20.20	20.04	20.04	-
2006	73		85		76		98		83		415		
SECTIONS	3	4	4	4	4	4	5	5	4	4	20	21	1
AVE CLASS SIZE	24.33	18.25	21.25	21.25	19.00	19.00	19.60	19.60	20.75	20.75	20.75	19.76	(0.99)
2005	68		69		94		105		71		407		
SECTIONS	3	4	3	4	4	5	5	5	3	4	18	22	4
AVE CLASS SIZE	22.67	17.00	23.00	17.25	23.50	18.80	21.00	21.00	23.67	17.75	22.61	18.50	(4.11)
2004	82		88		75		87		98		430		
SECTIONS	4	4	4	5	4	4	4	5	5	5	21	23	2
AVE CLASS SIZE	20.50	20.50	22.00	17.60	18.75	18.75	21.75	17.40	19.60	19.60	20.48	18.70	(1.78)
2003	74		89		68		121		87		439		
SECTIONS	4	4	4	5	3	4	6	6	4	5	21	24	3
AVE CLASS SIZE	18.50	18.50	22.25	17.80	22.67	17.00	20.17	20.17	21.75	17.40	20.90	18.29	(2.61)

WESTPORT PUBLIC SCHOOLS
NESDEC PROJECTED ENROLLMENT for OCTOBER 1, 2013
PROJECTED CLASS SIZE MODEL

		MAX 22		MAX 25				Grade							K-12		
School	**PRE K**	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**PROJ *13-14***	**ACTUAL *12-13***	**BUD TO *PROJ***
																	DIF
Coleytown El	46	61	63	62	77	85	89								437	446	(9)
# sections		3	3	3	4	4	4								21	22	(1)
estimated class size		20.33	21.00	20.67	19.25	21.25	22.25								20.81		
Green's Farms		63	67	79	75	79	77								440	452	(12)
# sections		3	4	4	4	4	4								23	23	-
estimated class size		21.00	16.75	19.75	18.75	19.75	19.25								19.13		
Kings Highway		70	76	78	75	87	91								477	486	(9)
# sections		4	4	4	4	4	4								24	24	
estimated class size		17.50	19.00	19.50	18.75	21.75	22.75								19.88		
Long Lots		87	87	96	109	107	99								585	583	2
# sections		5	5	4	5	5	5								29	29	
estimated class size		17.40	17.40	24.00	21.80	21.40	19.80								20.17		
Saugatuck		84	93	83	93	85	96								534	524	10
# sections		4	5	4	4	4	4								25	25	-
estimated class size		21.00	18.60	20.75	23.25	21.25	24.00								21.36		
Pre-K-5 Total	**46**	**365**	**386**	**398**	**429**	**443**	**452**								**2,473**	**2,491**	**(18)**
# sections		**19**	**21**	**19**	**21**	**21**	**21**								**122**	**123**	**(1)**
estimated class size		**19.21**	**18.38**	**20.95**	**20.43**	**21.10**	**21.52**								**20.27**		
Bedford Middle								276	297	290					**863**	868	(5)
Coleytown Middle								173	181	177					**531**	512	19
6-8 Budget Total								**449**	**478**	**467**					**1,394**	1,380	14
Staples High School											461	479	470	464	**1,874**	1,861	13
Total K-12															**5,741**	5,732	9
Pre-K															**46**	45	1
Placed Out (K-12)															**26**	26	-
Grand Total Students:															**5,813**	5,803	10

*Source: NESDEC 12-3-2012

A Profile of the Westport Public Schools Elementary Program December 17, 2012

A Benchmark Assessment

Cynthia Gilchrest, *Director of Elementary Education*
Susie Da Silva, *Principal, KHS*
Beth Messler, *Assistant Principal, CES*
Kevin Cazzetta, *Assistant Principal, GFS*
Chris Wermuth, *Assistant Principal, LLS*
Deborah Fritz-Bradeen, *Assistant Principal, SES*
Elementary Principals

Why benchmark? Why now?

- Board of Education request to benchmark class size and full day kindergarten against the DRG;
- Review the influence of Common Core State Standards on current instructional minutes and elementary schedules;
- Assess the impact of new curricula on instructional minutes; and,
- Examine current instructional minutes chart, K-5 (2006/2007) to reflect current practice.

The Process

- Convened a committee of administrators knowledgeable of scheduling at the elementary level;
- Gathered data from all districts in the DRG;
- Identified instructional minutes needed to teach core content from district committee leadership and best practice;
- Conducted a review of additional influences impacting instructional minutes and/or schedule;
- Collected feedback of all classroom teachers, grades 1-5 to better understand strengths and challenges of instructional program; and,
- Grade-level discussions with kindergarten teachers.

DRG Data on Class Size and Full-Day Kindergarten

District	Darien	Easton*	Redding*	New Canaan	Ridgefield	Weston	Wilton	Westport
All day K	Y	Y	Y	Y	Y	Y	Proposal in Place	N
K	19-23	21-22	21-22	16-20	20-21	18-20	23	22
1	19-23	21-22	21-22	16-20	20-21	18-20	23	22
2	20-25	21-22	21-22	16-20	24	20-24	25	22
3	20-25	21-22	21-22	16-20	25-26	20-24	25	25
4	21-26	21-22	21-22	20-24	25-26	20-24	25	25
5	21-26	21-22	21-22	20-24	25-26	20-24	25	25

*Easton/Redding do not have guidelines (dependent on number of teachers and annual budget)

What does the DRG data tell us?

In Kindergarten.....

- Six of the eight districts in the DRG have full day kindergarten. Wilton (7) is currently studying full day for the 2013-2014 school year

In grades K-5.....

- Westport's class size guidelines are similar to other districts in the DRG

What does best practice tell us?

- High quality language arts instruction requires a comprehensive literacy framework. This framework includes, Interactive Read-Aloud, Shared Reading and Writing, daily Reading and Writing Workshop, and Word Study;

- The Singapore math approach requires a dedicated block of time for children to be engaged in the **Concrete, Pictorial** and **Abstract** approach to learning with which to develop a deeper understanding;

What does best practice tell us?

- Young scientists are involved in inquiry which asks them to notice, wonder, question and draw conclusions about the world around them;

- The Westport social skills and social studies curriculum support 2025 skills that require children to develop dispositions to work collaboratively, flexibly, critically to understand perspective and act responsibly in a global world;

- The ITL curriculum is best taught through an integration model that provides authentic learning experiences for children;

An Analysis and Review of Current Practice

- Instructional blocks are often interrupted;
- Teachers indicate more time is needed to implement curriculum;
- "Instructional Minutes Guidelines, 2006/2007" does not currently reflect actual practice;
- Common planning time that is aligned to professional development is needed and valued by teachers and administrators;

An Analysis and Review of Current Practice

- Scheduling is complex and a myriad of variables influence the ability to develop schedules that maintain a consistent "block" of time; and,

- The practice of teaching through inquiry and conceptually requires time for students to process and think.

A Review of DRG Practice

In kindergarten....

•Total core instructional minutes are higher in the DRG than in the WPS

In grades K-5....

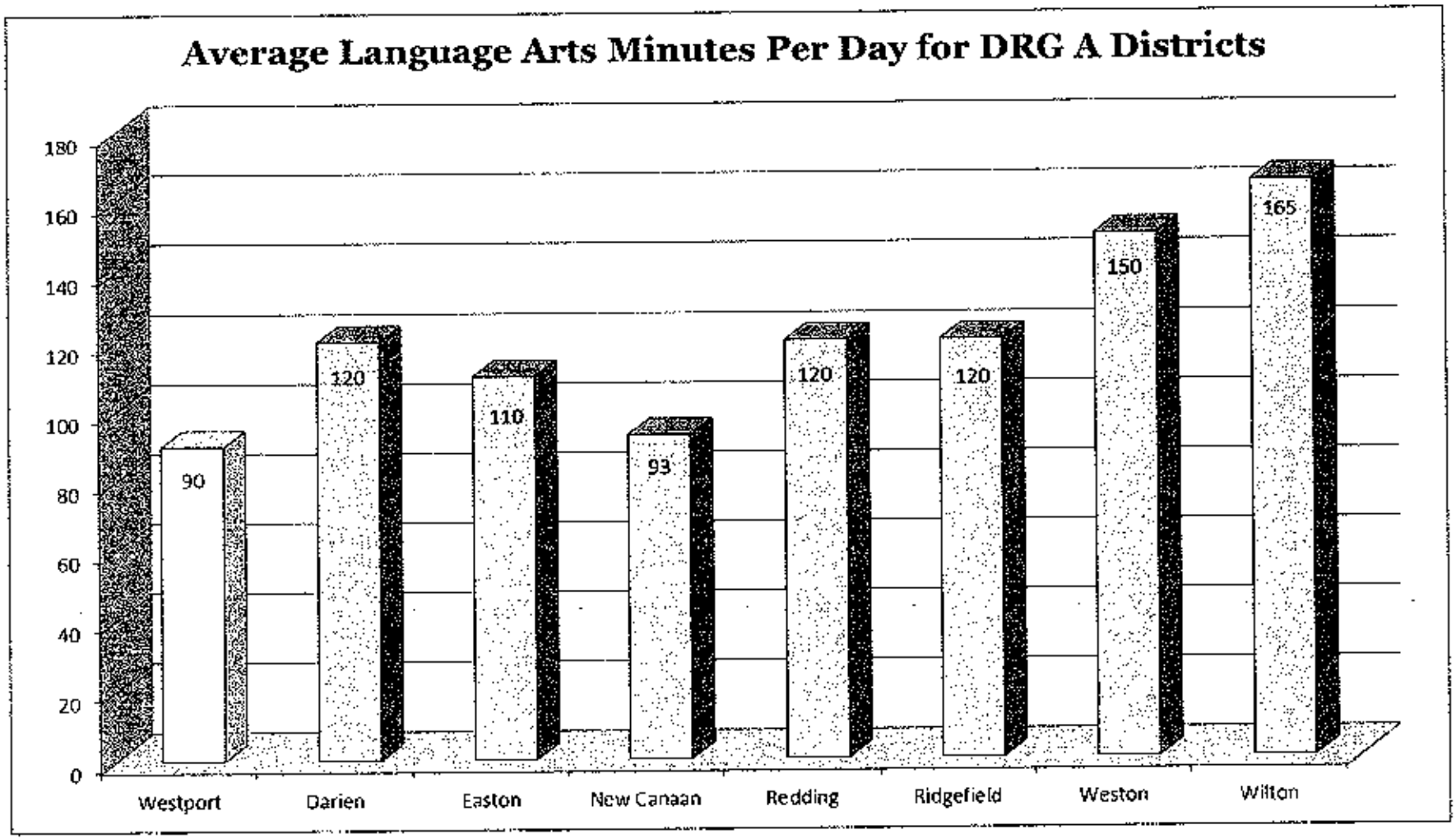
•Most districts in the DRG fully integrate computer technology into the core content areas

In all grades...

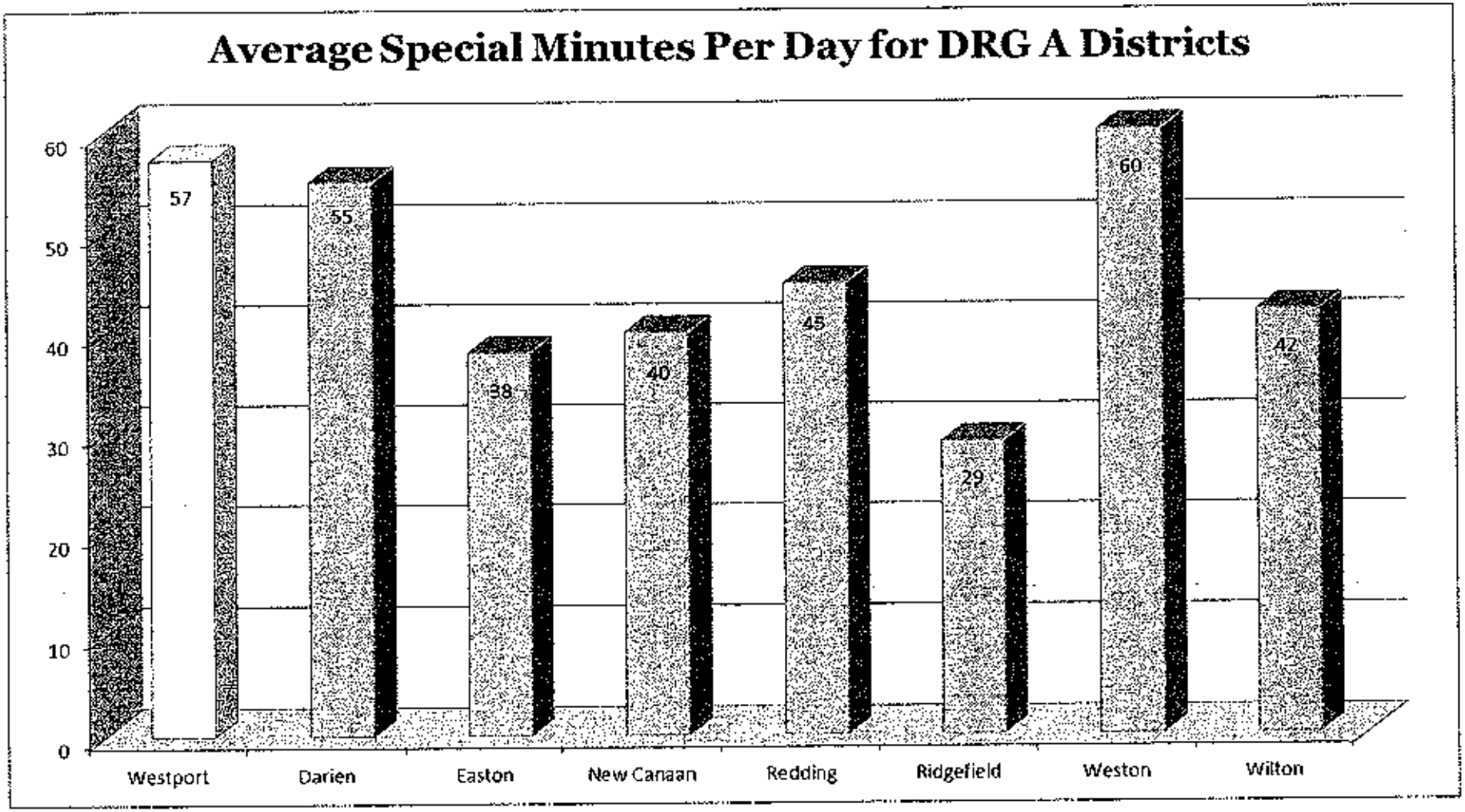
•Westport has the second highest number of minutes allocated to specials

•Westport has the least amount of time dedicated to the teaching of language arts in the DRG

Westport has the least amount of time dedicated to the teaching of language arts in the DRG

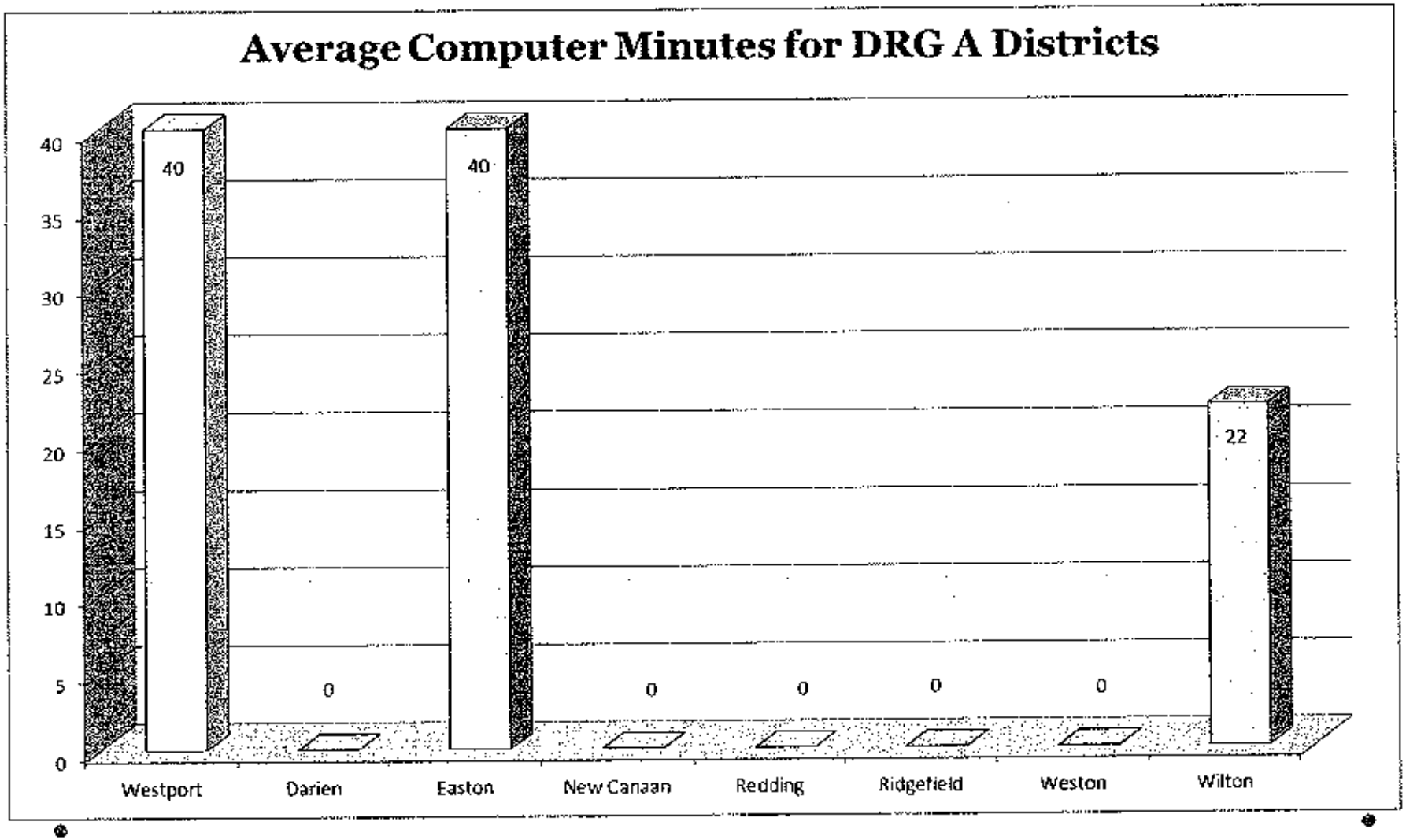


Westport has the second highest number of minutes allocated to specials



Most districts in the DRG fully integrate

computer technology into the core content areas



Westport needs to establish an elementary framework of instructional time that reflects current best practice which is aligned to 21st century skills and the Common Core State Standards

The Westport school community is responsible for preparing our students to reach their potential as leaders and innovators, and this begins at the elementary level

Sample Kindergarten Current Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday	Total time per Week
Language Arts	70	90	100	85	70	415
Math	30	30	30	30	30	150
Science/Social Studies	0	30	0	30	0	60
Lunch and Recess	50	50	50	50	50	250
Choice and Recess	30	60	60	60	30	240
Social Skills/Morning Meeting	30	30	30	30	30	150
Specials	30	70	90	75	30	295
Snack	15	15	15	15	15	75
Transitions	20	20	20	20	20	100
Pack-up	10	10	10	10	10	50
Minutes in the School Day	285	405	405	405	285	

Kindergarten Proposed Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday	Total time per Week
Language Arts	120	120	120	120	120	600
Math	45	45	45	45	45	225
Science/Social Studies	30	30	30	30	30	150
Lunch and Recess	50	50	50	50	50	250
Choice and Recess	60	60	60	60	60	300
Social Skills/Morning Meeting	30	30	30	30	30	150
Specials	30	60	60	45	30	225
Snack	15	15	15	15	15	75
Transitions	20	20	20	20	20	100
Pack-up	10	10	10	10	10	50
	405	405	405	405	405	
Minutes over the School Day	5	35	35	20	5	

Kindergarten Current versus Proposed Schedule

	Current Total time per Week	Proposed Total time per week	Difference
Language Arts	415	600	**185**
Math	150	225	**75**
Science/Social Studies	60	150	**90**
Lunch and Recess	250	250	**0**
Choice and Recess	240	300	**60**
Social Skills/Morning Meeting	150	150	**0**
Specials	295	225	**-70**
Snack	75	75	**0**
Transitions	100	100	**0**
Pack-up	50	50	**0**

Grade 5 versus Current Proposed Schedule

	Current Grade 5 Daily Averages	Proposed Grade 5 Daily Averages	Difference	Current Grade 5 Total per Week	Proposed Grade 5 Total per Week	Difference
Language Arts	110	120	10	550	600	50
Math	60	60	0	300	300	0
Science/Social Studies	50	60	10	250	300	50
Lunch and Recess	50	50	0	250	250	0
Social Skills/Morning Meeting	30	30	0	150	150	0
Specials (including band)	75	65	-10	375	325	-50
Transitions	30	30	0	30	30	0
	405	415				
	405	405				

Instructional Time Needed to Meet Curricular Demands

	Language Arts	Math	Science/ Social Studies	Social Skills
K	120	45	45	30
1	120	60	60	30
2	120	60	60	30
3	120	60	60	30
4	120	60	60	30
5	120	60	60	30

Summary of Elementary Instructional Needs

- ***In the area of kindergarten:***
  - Full day, 5 days a week
  - Increase in instructional time in core content areas and choice/recess time *by integrating ITL curriculum (technology and library media) into content areas*

- ***In grades 1-4:***
  - Increased instructional time in language arts and science/social studies *by integrating ITL curriculum (technology and library media) into content areas*

- ***In grade 5:***
  - Increased instructional time in language arts and science/social studies *by reducing PE 5 minutes per session, for a total of 10 minutes and integrating ITL curriculum (technology and library media) into content areas*

Next Steps in the Process

For the Board of Education:

- Approval of full day kindergarten for 2013-2014 school year
- Approval to decrease physical education in grade 5 by 10 minutes

MATERIAL FROM BOARD AGENDA

MARCH 4, 2013

Cynthia Gilchrest
Director, Elementary Education
Telephone: 203-341-1213
Email: cgilchrest@westport.k12.ct.us

To: Elliott Landon

From: Cyndy Gilchrest

Date: February 28, 2013

Re: Instructional Minutes Framework

On December 17, 2012, we presented a benchmark assessment of Westport against our DRG which addressed class size, full day Kindergarten and instructional minutes.

As a result of the benchmark assessment, the influence of the Common Core State Standards and review of research of best practice in the core academic areas, it will be essential that we increase our instructional minutes in Language Arts, math, science and social studies.

We can achieve the instructional minutes we require by:

In the area of kindergarten:
- Full day 5 days a week
- Increase in instructional time in core content areas and choice/recess time by integrating ITL curriculum (technology and library media) into content areas

In grades 1-4:
- Increased instructional time in language arts and science/social studies by integrating ITL curriculum (technology and library media) into content areas

In grade 5:
- Increased instructional time in language arts and science/social studies by reducing PE 5 minutes per session, for a total of 10 minutes and integrating ITL curriculum (technology and library media) into content areas

We, as well as most districts in CT, are facing a critical moment. The influence of the Common Core, with its rigor and shift to authentic assessment is very exciting and challenging. We have worked hard to revise our curriculum and embraced new programs such as Singapore Math, Inquiry-based science, Balanced Literacy. These interactive curriculums which teach deep understanding of concepts and content skills also address 21st century skills that we know are necessary if our current students are to be successful when they graduate.

We must have the time required to teach these curriculums if our students are to receive the full benefit of these dynamic programs. Our new instructional minutes framework provides this crucial time

We will be prepared to answer any questions you may have concerning the new time framework and alterations to our daily structure.

Highlights of the K-5 Elementary Program Proposal

A Proposal for Implementation 2013-2014

A Presentation to the Board of Education
March 4, 2013
Cynthia Gilchrest, Director of Elementary Education
Elementary Principals and Assistant Principals

Westport needs to establish an elementary framework of instructional time that reflects current best practice which is aligned to 21st century skills and the Common Core State Standards

The Westport school community is responsible for preparing our students to reach their potential as leaders and innovators, and this begins at the elementary level

Instructional Time Needed to Meet Curricular Demands

	Language Arts	Math	Science/ Social Studies	Social Skills
K	120	45	30	30
1	120	60	60	30
2	120	60	60	30
3	120	60	60	30
4	120	60	60	30
5	120	60	60	30

Summary of Elementary Instructional Needs

- ***In the area of kindergarten:***
  - Full day, 5 days a week
  - Increase in instructional time in core content areas and choice/recess time *by integrating ITL curriculum (technology and library media) into content areas*

- ***In grades 1-4:***
  - Increased instructional time in language arts and science/social studies *by integrating ITL curriculum (technology and library media) into content areas*

- ***In grade 5:***
  - Increased instructional time in language arts and science/social studies *by reducing PE 5 minutes per session, for a total of 10 minutes and integrating ITL curriculum (technology and library media) into content areas*

Kindergarten Current versus Proposed Schedule

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Language Arts	415	600	185
Math	150	225	75
Science/Social Studies	60	150	90
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Choice and Recess	240	300	60
Social Skills/Morning Meeting	150	150	0
Specials	295	225	-70
Snack	75	75	0
Transitions	100	100	0
Pack-up	50	50	0

Grade 5 Current versus Proposed Schedule

	Current Grade 5 Daily Averages	Proposed Grade 5 Daily Averages	Difference	Current Grade 5 Total per Week	Proposed Grade 5 Total per Week	Difference
Language Arts	110	120	10	550	600	50
Math	60	60	0	300	300	0
Science/Social Studies	50	60	10	250	300	50
Lunch and Recess	50	50	0	250	250	0
Social Skills/Morning Meeting	30	30	0	150	150	0
Specials (including band)	75	65	-10	375	325	-50
Transitions	30	30	0	30	30	0
Total Minutes	405	415				

Table Top Discussions

PTA Presidents Meeting, PTA Coffee's, and Pre-School Parents Q & A

Wonderings/questions that were brought up at the discussion sessions:

- What about other special areas- world language, general music, etc., should they be reduced to find instructional time?;
- What is the impact of the various programs- DARE, K2BK, Cultural Arts, etc., on instructional time?;
- What is/will be the impact on students without the instructional program changes recommended?;
- What about LMC and book checkout- will students still visit the LMC and have lessons?;
- What about basic computer skills- what is the responsibility of classroom teachers and computer teachers?

Table Topic Discussions

PTA Presidents Meeting, PTA Coffee's, and Pre-School Parents Q & A

Wonderings/questions that were brought up at the discussion sessions:

- Will students be allowed to play and have choice time in full day K?;
- Will children be too tired in a full-day/five day program?;
- What does instruction look like? Will children be at desks or tables the entire time?;
- Will we still need computer labs/teachers? Will children visit the labs- do we need more laptops?;
- Musical instrument lessons for grade 4/5 students- can they be held before or after school?; and,
- Must we accept the Common Core State Standards?

Next Steps in the Process

For the Board of Education:

- Approval of full day kindergarten for 2013-2014 school year
- Approval to decrease physical education in grade 5 by 10 minutes