The Enclosures referred to in the Agenda are available for inspection at each of the three Public Libraries in Fairfield, Fairfield Public Schools' website http://www.fairfieldschools.org/ and the Education Center, 501 Kings Highway East.

THE PUBLIC IS REQUESTED TO TURN OFF CELL PHONES OR PLACE THEM ON VIBRATE PRIOR TO THE START OF THE MEETING

Board of Education, Fairfield Public Schools
501 Kings Highway East, 2nd Floor Board Conference Room, Fairfield, CT

Tuesday, March 12, 2013

REGULAR MEETING 7:30 P.M.

1. Call to Order and Roll Call

2. Pledge of Allegiance

3. Presentations

   A. Presentation of Elementary Math Curriculum and Resources, Grades K-2
   (Enclosure No. 1)

4. Approval of Minutes

   Approval of Minutes of the Regular Meeting of February 26, 2013
   Recommended Motion: "that the Board of Education approve the Minutes of the Regular Meeting of February 26, 2013"
   (Enclosure No. 2)

5. Student Reports

Marco Congello	Fairfield Ludlowe High School Student Liaison
Alice Rocha	Fairfield Ludlowe High School Student Liaison
Acacia Longley	Fairfield Warde High School Student Liaison
Danielle Clarke	Fairfield Warde High School Student Liaison

6. Board Committee/Liaison Reports

7. Superintendent's Report

8. New Business

   A. Request from FairTV Cable Advisory Council
   Discussion on appointment of a Council Member.
   (Enclosure No. 3)

   B. First Reading of Policy 5514 – Students – Administration of Medication in the Schools
   (Enclosure No. 4)

9. Public Comments and Petitions

During this period the Board will hear comments and receive petitions from any citizen present at the meeting. Any single presentation must be limited to two minutes, and audio-visual equipment cannot be used without the advance authorization of the Chairman. **The Board will not hear comment on individual personnel matters or comments addressed to a specific member(s) of the Board.** Decorum will be enforced. Citizens are asked to comment on any voting item at the time the item is under consideration by the Board.

10. Open Board Comment

11. Adjournment
Recommended Motion: "that this Regular Meeting of the Board of Education adjourn"

CALENDAR OF EVENTS

April 9, 2013	Board of Education Regular Meeting	7:30 p.m. 501 Kings Highway East 2nd Floor Conference Room

RELOCATION POLICY NOTICE

The Fairfield Public Schools System provides services to ensure students, parents and other persons have access to meetings, programs and activities. The School System will relocate programs in order to ensure accessibility of programs and activities to disabled persons. To make arrangements please contact:

Pupil & Special Education Services
501 Kings Highway East, Fairfield, CT 06825
Telephone: (203) 255-8379

FAIRFIELD PUBLIC SCHOOLS

ENCLOSURE NO. 1

MAR 12 2013

The Education Center

Documents presented to the Fairfield Public Schools Board of Education on March 12, 2013

- **Prekindergarten Mathematics Curriculum**
- **Kindergarten Mathematics Curriculum**
- **Grade 1 Mathematics Curriculum**
- **Grade 2 Mathematics Curriculum**

FAIRFIELD PUBLIC SCHOOLS

TO: Board of Education
FROM: Walter Wakeman, Preschool – 5 Math and Science Curriculum Leader
DATE: March 12, 2013
RE: Grades PK-2 Mathematics Curriculum

I. What is the difference in this curriculum and why did changes need to be made?

The previous curriculum was written in 2003 and is ten years old. That curriculum was developed under the old Connecticut State Curriculum Framework which changed in 2010. In recent years, researchers have developed clearer and more concise continuum of instruction in mathematics with greater focus and coherence. District data analysis also revealed a necessity for change. The newly proposed curricula are a manifestation of this research with an emphasis on 21st century skills. It is now aligned with Connecticut's adoption of the Common Core State Standards and provides teachers with clearer ideas on how to meet and exceed unit and grade level expectations. Finally, it will support the continuum of standards adopted for grades 3-5 by the Fairfield Public Schools Board of Education in April of 2012.

II. What was the process used to develop the curriculum?

July 2011 to June 2012
- Research and review of curriculum standards

June 2012 – Present
- PK- Grade 2 mathematics curriculum revisions made by teachers and curriculum leader

November 29, 2012
- PK-Grade 2 draft curriculum and survey posted online for public review and comment

December 7, 2012
- Parent Focus Group conducted a review of the curriculum documents

January 25, 2013
- Curriculum Council presentation reviewed documents and provided feedback

March 12, 2013
- Presentation of the proposed PK-2 mathematics curriculum documents to the Board of Education

April 9, 2013
- Board of Education vote on the PK-2 mathematics curriculum

III. Are there any budget and facilities implications for this new revision?

In order to build capacity and resources across twelve sites with approximately 130 classrooms, it is expected that this curriculum roll out will have a multi-year budget impact. To address 21st Century skills and the increase in rigor inherent in the newly proposed curriculum documents, the district will need to provide the necessary professional development for teachers along with support resources.

IV. How will this new curriculum be evaluated?

To begin, the success of the mathematics curriculum will be measured utilizing student achievement data on internal and external measures. Student benchmarks will be established at regular intervals during the year. Additionally, we will engage in a regular process of gathering teacher feedback. This includes input from grade three teachers on the readiness of students entering from grade 2. Eventually, the new assessment system Smarter Balanced Assessment Consortium (SBAC) aligned with the Common Core State Standards conducted in grades 3 through 5 will also be an indicator of student preparedness in grades K-2.

Fairfield Public Schools Mathematics Curriculum

Preschool

Preschool Mathematics

Mathematically rich preschool classes are joyful, busy places where children develop relationships, explore, negotiate, and learn. Through their years in preschool, young children are exposed to and explore the power of mathematics in helping shape their world and build relationships. Mathematical learning depends on more than teaching rote numbers. Mathematics and numeracy are tools for thinking, problem solving, and communicating.

The preschool curriculum allows children to learn how mathematics helps build a community of learners through thoughtfully planned numeracy work that exposes children to the components of mathematics: counting and cardinality, operations and algebraic thinking, numbers and operations, measurement and data, and geometry.

The standards addressed in preschool can be directly linked to the standards that will be addressed in kindergarten. The curriculum guide demonstrates how the important work in preschool classes helps lay the groundwork for further mathematical learning as they enter kindergarten.

Learning Guide	
Foundations for Learning in a Mathematical Community	**Supporting Emergent Mathematicians**

Mathematics Resources

- *The Creative Curriculum for Preschool Kai-lee Berke et al., Teaching Strategies, Wahington D.C., 2010*
- *Literacy Beginnings: A Pre-Kindergarten Handbook (2011) by G. S. Pinnell & I. Fountas*
- *CT Preschool Curriculum Frameworks*
- *CT Preschool Assessment Frameworks*
- *Common Core State Mathematics Standards*

Preschool Overview

Central Understandings:

Students will –

- Use number concepts and operations to count, quantify and connect numerals with their quantities
- Understand and describe spatial relationships and shapes
- Compare and measure
- Demonstrate knowledge of patterns in number relationships
- Engage in inquiry

Essential Questions

1. How do we engage preschoolers in rich discussions about mathematics in large groups, small groups, and individually?
2. How do we provide experiences for preschoolers to compare, connect, and respond to in our daily routines and in mathematical problems?
3. How do we provide preschoolers the opportunity to apply meaningful applications of mathematics in large groups, small groups, and individually?
4. How do we promote discussions around a variety of high-interest, relevant, real-world experiences to build conceptual understanding?
5. How does exposure to new vocabulary build understanding of our world?
6. How does learning about number relationships, in context, help us prepare to be better mathematicians?
7. How do activities (e.g. singing songs & rhymes) help develop pattern and number relationships?
8. How do we provide preschoolers with ample time to engage in problem solving?
9. How do we provide preschoolers ample time to engage and inquire in mathematical conversations with peers and adults?

Assessments

Universal Assessments

Counting

Cardinality

Content Outline:

- Foundations for Learning in a Mathematical Community
- Supporting Emergent Mathematicians

Preschool Thread for the Year:

Together and individually explore and use the elements of numeracy to build and share understanding and meaning.

Standards:

- CT Preschool Curriculum Framework (PCF)
- CT Preschool Assessment Framework (PAF)
- Common Core State Mathematics Standards

Foundations for Learning in a Mathematical Community

Overview

Preschoolers are excited to be part of a new learning community. Each child arrives at school with a different set of backgrounds and understandings. Specific activities designed to capitalize on a young child's natural curiosity provide opportunities to explore and use mathematics and foster deeper understanding of number and number concepts.

The preschool curriculum affords children the opportunity to use language, mathematical thinking and problem solving in a variety of settings and tasks. A comprehensive, well-planned mathematics program addresses the components and processes of mathematics, and the classroom environment and materials. It also takes into account the children's abilities, interests and learning styles.

Preschool Big Ideas

- School is a place where people work, talk, and play together.
- You can learn many new things about your world at school.
- You can talk to show your thinking.
- A mathematically rich environment stimulates children's thinking
- Mathematics plays an important role in young children's learning.
- Children's mathematical thinking expands as they interact with a variety of people.
- Children learn more about how to use mathematical mathematics in work and play.

Math Standards

- P & S 1. Shows self-direction
- P & S 2. Sustains attention
- P & S 3. Participates in groups
- P & S 7. Cooperates with peers
- PHY 1. Uses large muscles
- PHY 2. Uses small muscles
- COG 8. Uses sentences
- COG 9. Understands conversations
- CRE 1. Builds and constructs
- CRE 2. Draws and paints

Mathematical Practices

PK.MP.1 Make sense of problems and persevere in solving them
PK.MP.2 Reason quantitatively
PK.MP.3 Construct viable arguments, justify reasoning and explain the reasoning of others
PK.MP.4 Model in mathematics
PK.MP.5 Use appropriate tools strategically
PK.MP.6 Attend to precision
PK.MP.7 Look for and make use of structure in the environment and in routines
PK.MP.8 Look for and express regularity in repeated reasoning

Supporting Emergent Mathematicians

Overview

Preschoolers are excited to be part of a new learning community. Each child arrives at school with a different set of backgrounds and understandings. Specific activities designed to capitalize on a young child's natural curiosity provides opportunities to explore and use mathematics and numeracy in multiple settings and activities. These routines expose students to oral language and problem solving tasks in real-world contexts that foster deeper understanding of number and number concepts. Through the use of common routines and rituals, students learn to use mathematical language as they participate in various learning activities using numeracy.

The preschool curriculum affords children the opportunity to use language and mathematical thinking in a variety of settings and tasks. A comprehensive, well-planned mathematics program addresses the components and processes of mathematics, and the classroom environment and materials. It also takes into account the children's abilities, interests and learning styles.

Preschool Big Ideas

- Language plays an important role in young children's learning.
- Children use language in different ways: narrative, explaining and seeking information, oral performance and giving and understanding directions.
- Children's language expands as they interact with a variety of people.
- Children learn more about how to use language conventionally as they utilize language in work and play.
- A child's vocabulary expands through conversation, particularly about texts that have been read aloud.

Mathematics Standards	
• P & S 1. Shows self-direction • P & S 2. Sustains attention • COG 1. Engages in scientific inquiry • COG 2. Uses a variety of strategies to solve problems • COG 3 Sorts Objects • COG 4 Recognize and makes patterns • COG 5 Compares and orders objects and events • COG 6 Relates number to quantity • COG 7 Demonstrates spatial awareness • CRE 1. Builds and constructs • CRE 2. Draws and paints	**Counting and Cardinality** PK.CC.1 Associate quantities and the names of numbers with written numerals PK.CC.2 Recognize the number of objects in small groups without counting (subitizing) PK.CC.3 Know number names and the count sequence PK.CC.4 Count a set of objects to tell "how many" using one-to-one correspondence PK.CC.5 Compare two numbers (quantities) within ten **Number Operations** PK.NBT.1 Compose and decompose numbers (ex. twelve is ten and two) PK.NBT.2 Recognize numbers are contained in other numbers (hierarchical inclusion: four is in five and five is one more than four) PK.NBT.3 Recognize that numbers can be combined and separated, (ex. When you add two more to a group of three you have 5) **Measurement and Data** PK.MD.1 Describe and compare measurable attributes PK.MD.2 Sort and classify objects by attributes **Geometry** PK.G.1 Recognize and describe shapes in the environment PK.G.2 Analyze and compare shapes PK.G.3 Combine shapes to make other shapes PK.G.4 Describe the location and relative position of objects
Assessments and Progress Indicators *Counting *Cardinality	

Links to Kindergarten Common Core Mathematical Practice Standards	
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?"

Links to Kindergarten Common Core State Standards

Know number names and the count sequence.

K.CC.1. Count to 100 by ones and by tens.
K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

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).

Count to tell the number of objects.

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.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.

Compare numbers.

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.[1]

K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.

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

K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings[1], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

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.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.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.5. Fluently add and subtract within 5.

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

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 (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

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

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 (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

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.2. Correctly name shapes regardless of their orientations or overall size.

K.G.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

Analyze, compare, create, and compose shapes.

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.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

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?"*

Fairfield Public Schools

Mathematics

Grade K

Fairfield Public Schools Mathematics Curriculum

Grade K

Grade K Mathematics Overview

Students in Kindergarten will focus on two critical areas: representing, relating, and operating on whole numbers and describing shapes and spatial relationships. More time in Kindergarten is devoted to number than to other topics. Students will develop an understanding of counting: one to one matching, the last number said tells the quantity, there is a sequence to our numbers, and there is a pattern to the underlying structure to our number system. Students will develop an understanding of early number concepts and place value. Students combine and take apart numbers. Students describe their physical world using geometric ideas. Students in Kindergarten will develop, discuss, and use efficient, accurate, and generalizable methods to solve real world problems.

Grade K Mathematics Year-At-A-Glance

Pacing Guide

1st Marking Period			2nd Marking Period			3rd Marking Period			
September	October	November	December	January	February	March	April	May	June
Unit 1 Counting and Matching Numerals 0-5 with Comparing	Unit 2 Counting and Matching Numerals 6-10 with Comparing	Unit 3 Counting and Matching Numerals 11-20	Unit 4 Addition and Subtraction within 5	Unit 5 Developing Early Place Value Concepts	Unit 6 Measurement by Direct Comparison	Unit 7 Geometry	Unit 8 Investigating Addition and Subtraction within 10		

Grade K Overview

Central Understandings:
Insights learned from exploring generalizations through the essential questions. (Students will understand that…)

- Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools, and technologies.
- Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.
- Shapes and structures can be analyzed, visualized, measured, and transformed using a variety of strategies, tools, and technologies.
- Data can be analyzed to make informed decisions using a variety of strategies, tools, and technologies.

Essential Questions

- How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?
- How are quantitative relationships represented by numbers?
- How do geometric relationships and measurements help us to solve problems and make sense of our world?
- How can collecting, organizing, and displaying data help us analyze information and make reasonable and informed decisions?

Assessments

- Formative Assessments
- Summative Assessments
- District –Wide Screening Tools

Content Outline:
Unit 1: Counting and Matching Numerals 0-5 with Comparing Quantities
Unit 2: Counting and Match Numerals 6-10 with Comparing Quantities
Unit 3: Counting and Matching Numerals 11 - 20
Unit 4: Addition & Subtraction within 5
Unit 5: Developing Early Place Value Concepts
Unit 6: Measurement by Direct Comparison
Unit 7: Identifying, Describing, Comparing, Analyzing, and Composing 2-D and 3-D Shapes
Unit 8: Investigating Addition & Subtraction within 10

Mathematics Standards
CT Common Core State Standards (CCSS)

Fairfield Public Schools Skills Matrix (Skills Matrix)

Primary Resources

- About Teaching Mathematics, Marilyn Burns
- Contexts for Learning Mathematics, Fosnot et al.
- Teaching Student-Centered Mathematics –Van de Walle and Lovin
- Growing With Mathematics
- Math Their Way

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.	
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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.
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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?"

Adapted from Connecticut Standards for Mathematics

Grade K

Unit 1: Launch/Counting and Matching Numerals 0-5 with Comparing

The purpose of the launch is to establish classroom routines. The first unit is intended to engage students in thinking mathematically. The lessons focus on learning how to engage one another as mathematicians using 21st century skills. Student discourse is enhanced by using turn & talk, think-pair-share, justify reasoning, and constructing viable arguments for mathematical thinking. Students represent their thinking using mathematical models and numbers, questioning peers for deeper understanding and clarification. The correctness of solutions lies within the logic of the mathematics. The students will focus on the numerals 0-5 with an emphasis on counting and matching numerals. Students will compare sets and numbers to 5 and beyond.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Counting helps students to understand how numbers are related. • Numbers can be represented by numerals, sets, and number names. • Counting objects requires synchrony and tagging (Synchrony: remembering the word that comes next and using only one word for each object. Tagging: touching each object once and only once.) • Numbers grow by one, and exactly one, each time. (Hierarchal Inclusion) • When counting a set the number they end on is the number of objects in a set. (Cardinality) • One to one correspondence (if there is a corresponding object matched to each object in a set, the sets are equivalent) is necessary to the understanding of equivalency. • The number of objects in a set remains the same regardless of the arrangement of the set. (Conservation of a Number) • The number of objects can be recognized at a glance without counting. (Subitizing)	• Why do we count? • How do we count? • How are numerals used? • How do we represent quantities? • How do we write numerals? • How are two quantities related? • How do we compare quantities?
Thinking Ahead, Linking Big Ideas among units: **Unit 2: Counting and Matching Numerals** Expanding Unit 1 to include quantities to 10	

Common Core State Standards
Grade K
Unit 1: Counting and Matching Numerals 0-5 with Comparing Quantities

Counting and Cardinality

Know number names and the count sequence.

K.CC.1. Count to 120 by ones and by tens.

K.CC.3. Write numbers from 0 to 30. Represent a number of objects with a written numeral 0-30 (with 0 representing a count of no objects).

Count to tell the number of objects.

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.

Compare numbers.

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.

K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.

Measurement and Data
Classify objects and count the number of objects in each category.

K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Grade K

Unit 2: Counting and Matching Numerals 6-10 with Comparing Quantities

The purpose of this unit is to develop an understanding of quantity and number. Students count and match numerals through 10. Students build on the five structure to understand the ten structure. Students compare sets of objects and numbers and develop strategies to determine more, less and the same quantities of objects.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Counting helps students to understand how numbers are related. • Numbers can be represented by numerals, sets, and number names. • Counting objects requires synchrony and tagging (Synchrony: remembering the word that comes next and using only one word for each object. Tagging: touching each object once and only once.) • Numbers grow by one, and exactly one, each time. (Hierarchal Inclusion) • When counting a set the number they end on is the number of objects in a set. (Cardinality) • One to one correspondence (if there is a corresponding object matched to each object in a set, the sets are equivalent) is necessary to the understanding of equivalency. • The number of objects in a set remains the same regardless of the arrangement of the set. (Conservation of a Number) **Thinking Ahead, Linking Big Ideas among units:** **Unit 3 : Counting and Matching Numerals to 20** • Expand on Unit 2 to include up to 20	• Why do we count? • How do we count? • How are numerals used? • How do we represent quantities? • How do we write numerals? • How are two quantities related? • How do we compare quantities?

Common Core State Standards
Grade K
Unit 2: Counting and Matching Numerals to 20

Counting and Cardinality
Know number names and the count sequence.

K.CC.1. Count to 120 by ones and by tens.

K.CC.3. Write numbers from 0 to 30. Represent a number of objects with a written numeral 0-30 (with 0 representing a count of no objects).

Count to tell the number of objects.

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.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.

Compare numbers.

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.

K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.

Measurement and Data K.MD
Classify objects and count the number of objects in each category.

K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Grade K

Unit 3: Counting and Matching Numerals 11 - 20

The purpose of this unit is to develop an understanding of the benchmark numbers 5 and 10 to count and match numerals through 20. Students use benchmark numbers to compose and decompose numbers. They begin using units of 5s and 10s to help determine other quantities. Foundational place value concepts are developed as students begin to build numbers using a group of ten and some ones.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Children use number to count not only objects but also groups- and to count them both simultaneously. • Teen numbers are a group of 10 and another number. • Ten objects can be perceived simultaneously as set of ten objects or as one group of ten (unitizing). • The positions of digits determine what value they represent. • Place values patterns occur when making and adding on groups of ten. • Numbers can be composed and decomposed. (11 is 10 plus one more) • Our number system is built on ten. • The benchmark of 10 can be used to effectively count on. **Thinking Ahead, Linking Big Ideas among units:** **Unit 4: Addition and Subtraction within 5** • Students begin to look at number combinations as putting together (addition) and taking apart (subtraction).	• Why do we count? • How do we count? • How are numerals used? • How do we represent quantities? • How do we write numerals? • How are two quantities related? • How do we compare quantities? • How does the 5 and 10 structure help us to understand bigger numbers?

Common Core State Standards
Grade K
Unit 3: Counting and Matching Numeral 11 - 20

Counting and Cardinality
Know number names and the count sequence.

K.CC.1. Count to 120 by ones and by tens.

K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

K.CC.3. Write numbers from 0 to 30. Represent a number of objects with a written numeral 0-30 (with 0 representing a count of no objects).

Count to tell the number of objects.

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.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.

Grade K

Unit 4: Addition and Subtraction within five

The purpose of the unit is for the students to understand that addition is putting together and adding to and subtraction is taking apart and taking from. Students will work with groups up to 5 to develop part whole relationships. Students solve addition and subtraction word problems and represent their thinking through verbal explanations, expressions, equations and acting out a situation. They develop compose and decompose numbers using different number combinations.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Addition is combining numbers (joining). • Addition means the whole in terms of the parts. • Subtraction is taking apart numbers (separating). • Subtraction names a missing part. • Addition and subtraction are related. • Sets and numbers can be composed and decomposed. • Manipulatives can be used to solve contextual problems for addition. • Addition and subtraction can be represented by equations (number sentences). **Thinking Ahead, Linking Big Ideas among units:** **Unit 5: Developing Early Place Value Concepts** • Students build larger numbers by counting and grouping quantities. They compose and decompose numbers and build an understanding of number relationship and magnitude.	How are numerals used? How can two quantities be related? How do we compose and decompose numbers? Why do we compose and decompose numbers? How is addition and subtraction related? What different strategies can we use to add and subtract?

Common Core State Standards
Grade K
Unit 4: Addition and Subtraction within Five

Counting and Cardinality
Know number names and the count sequence.

K.CC.1. Count to 120 by ones and by tens.

K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

K.CC.3. Write numbers from 0 to 30. Represent a number of objects with a written numeral 0-30 (with 0 representing a count of no objects).

Count to tell the number of objects.

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.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.

Operations and Algebraic Thinking
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

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.

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.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.5. Fluently add and subtract within 5.

Grade K

Unit 5: Developing Early Place Value Concepts: Teen and Twenty Numbers (11-30) and Counting to 120

The purpose of this unit is to work with numbers 11-30 to compose and decompose these numbers as to gain foundational concepts for place value. Students build larger numbers by counting and grouping quantities over 100. They compose and decompose numbers and build an understanding of number relationship and magnitude.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Counting helps students to understand how numbers are related and that each successive number named refers to a quantity that is one larger. • Teen numbers are 10 plus another number. • Ten is found within every 2 digit number. • A set of ten can be perceived as a single entity. (Unitizing) • The positions of digits determine what value they represent. • Place values patterns occur when making and adding on groups of ten. • Two-digit numbers can be composed and decomposed. • There are multiple ways to take apart and combine any given set of numbers. • Our number system is structured around multiples of ten. • Skip counting allows students to count sets of objects with the same number of items. • Benchmark numbers help us to mentally think about numbers. **Thinking Ahead, Linking Big Ideas among units:** **Unit 6: Measurement by Direct Comparison** • Numbers are used for quantifying measurement • Things can be measured by comparing attributes	• Why do we count? • How do numerals represent quantities? • How does the location of the number affect its value? • How are different quantities related? • Which quantity is larger and how do we know? • How can we compare quantities?

Common Core State Standards
Grade K
Unit 5: Developing Early Place Value Concepts

Counting and Cardinality
Know number names and the count sequence.

K.CC.1. Count to 120 by ones and by tens.

K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

K.CC.3. Write numbers from 0 to 30. Represent a number of objects with a written numeral 0-30 (with 0 representing a count of no objects).

Count to tell the number of objects.

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.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.

Operations and Algebraic Thinking
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

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.

Number and Operations in Base Ten
Work with numbers 11-19 to gain foundations for place value.

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 (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Grade K

Unit 6: Measurement by Direct Comparison

The purpose of this unit is to describe measurable attributes of objects and to estimate and measure using non-standard units. Students will compare these attributes, such as length, width, height, and weight. Students use direct comparisons of the length of objects and develop strategies to determine more of, less of, or the same.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Measurement involves a comparison of an attribute of an item or situation with a standard or non-standard unit of measure. • Objects can be measured. • Non-standard units can be used to measure. • There is a purpose for measurement. • Estimation is a way to determine if the answer is reasonable. **Thinking Ahead, Linking Big Ideas among units:** **Unit 7: Geometry** • Students use their knowledge of measurement while working with shapes. • Students compose and decompose shapes. • Students describe their physical world using geometric ideas like shape, orientation and spatial relations.	• Why do we measure? • How is measurement used? • How do we decide which unit to use to measure an object? • When do we use estimation? • How do you know if your estimation is reasonable?

Common Core State Standards
Grade K
Unit 6: Measurement by Direct Comparison

Measurement and Data
Describe and compare measurable attributes.

K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

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.*

Grade K

Unit 7: Geometry: Identifying, Describing, Comparing, Analyzing, Composing 2D and 3D shapes

The purpose of this unit is for students to describe their physical world in terms of shape, orientation and spatial relations. They use basic shapes and spatial reasoning to model objects in their environment and construct more complex shapes. They identify, name and describe two dimensional and three dimensional objects in their environment, and describe the relative positions of these objects using terms such as above, below, beside, in front of. Students will analyze and compare two and three dimensional shapes to describe their similarities, differences, parts and other attributes. They will draw and create shapes.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Shapes can be compared by using a variety of geometric attributes. • Shapes can be described relative to their position in space. • Shapes can be seen from different perspectives. • Shapes can be two-dimensional or three-dimensional. • Shapes and objects can be described by their attributes. • Shapes can be constructed and deconstructed into other shapes.	• What shapes are in our environment? • How are 2-D shapes alike and different? • How are 3-D shapes alike and different? • How are 2-D and 3-D shapes alike and different from each other? • How can I represent a shape? • What shapes can be composed from other shapes? • What shapes can be decomposed into other shapes?
Thinking Ahead, Linking Big Ideas: **Unit 8: Investigating Addition and Subtraction within 10** • Students build on their understanding of composing and decomposing numbers to five by building numbers to ten. • Students develop an understanding of addition as putting together and subtraction as taking apart.	

Common Core State Standards
Grade K
Unit 7: Geometry: Identifying, Describing, Comparing, Analyzing, Composing 2D and 3D shapes

Measurement and Data
Describe and compare measurable attributes.

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.*

Classify objects and count the number of objects in each category.

K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Geometry
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

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.2. Correctly name shapes regardless of their orientations or overall size.

K.G.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

Analyze, compare, create, and compose shapes.

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.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

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?"*

Grade K

Unit 8: Investigating Addition and Subtraction within Ten

The purpose of the unit is for students to build upon their understanding that addition as putting together and adding to and subtraction as taking apart and taking from (from Unit 4) within groups up to 10. They develop strategies for adding and subtracting small whole numbers. They use a variety of models, including discrete objects and linear models. They use properties of addition to add whole numbers using increasingly sophisticated strategies based on these properties to solve addition and subtraction problems within ten. Students will develop fluency with addition and subtraction five.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Addition is combining numbers (joining). • Addition means the whole in terms of the parts. • Subtraction is taking apart numbers (separating). • Subtraction names a missing part. • Addition and subtraction are connected. • Sets and numbers can be composed and decomposed. • Manipulatives can be used to solve contextual problems for addition • Addition and Subtraction can be represented by equations (number sentences).	• How are numerals used? • How can two quantities be related? • How do we compose and decompose numbers? • Why do we compose and decompose numbers? • How are addition and subtraction related? • What different strategies can we use to add and subtract? • What are efficient strategies we can use to combine and take apart numbers?
Thinking Ahead, Linking Big Ideas: **Grade 1:** The focus of grade 1 is to develop automaticity of addition and subtraction facts. Students develop addition and subtraction strategies, understanding of place value, measurement concepts and reasoning about shapes.	

Common Core State Standards
Grade K
Unit 8: Investigating Addition and Subtraction to Ten

Counting and Cardinality
Know number names and the count sequence.

K.CC.1. Count to 120 by ones and by tens.

K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

K.CC.3. Write numbers from 0 to 30. Represent a number of objects with a written numeral 0-30 (with 0 representing a count of no objects).

Count to tell the number of objects.

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.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.

Operations and Algebraic Thinking
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

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.

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.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.5. Fluently add and subtract within 5.

Fairfield Public Schools
Mathematics

Grade 1

Fairfield Public Schools Mathematics Curriculum

Grade 1

Grade 1 Mathematics Overview

Grade one students develop, discuss and use efficient, accurate and generalizable methods to solve real world problems. Students develop a conceptual understanding of addition and subtraction, and use a variety of strategies. Students develop fluency of basic addition and subtraction facts with sums to twenty. They develop an understanding of whole number relationships and place value concepts grouping tens and ones. Students develop an understanding of the meaning and processes of measurement. Students reason about attributes of geometric shapes, as well as compose and decompose plane or solid figures.

Grade 1 Mathematics Year-At-A-Glance

Pacing Guide

1st Marking Period			2nd Marking Period			3rd Marking Period			
September	October	November	December	January	February	March	April	May	June
Unit 1 Fluency with addition and subtraction within 10	Unit 2 Fact strategies with addition and subtraction within 20	Unit 3 Defining attributes and partitioning 2-D and 3-D shapes	Unit 4 Counting and place value	Unit 5 Addition and subtraction within 100	Unit 6 Measurement & Time	Unit 7 Exploring Addition and Subtraction Multi-digit Numbers			

Grade 1 Overview

Central Understandings:
Insights learned from exploring generalizations through the essential questions. (Students will understand that…)

- Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools, and technologies.
- Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.
- Shapes and structures can be analyzed, visualized, measured, and transformed using a variety of strategies, tools, and technologies.
- Data can be analyzed to make informed decisions using a variety of strategies, tools, and technologies.

Essential Questions

- How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?
- How are quantitative relationships represented by numbers?
- How do geometric relationships and measurements help us to solve problems and make sense of our world?
- How can collecting, organizing, and displaying data help us analyze information and make reasonable and informed decisions?

Assessments

- Formative Assessments
- Summative Assessments
- District –Wide Screening Tools

Content Outline:

Unit 1. Fluency within 10
Unit 2. Fact strategies within 20
Unit 3. Geometry
Unit 4. Place value
Unit 5. Addition and subtraction within 100
Unit 6. Measurement & Time
Unit 7. Addition and Subtraction with multi-digit numbers

Mathematics Standards
CT Common Core State Standards (CCSS)

Fairfield Public Schools Skills Matrix (Skills Matrix)

Primary Resources

- About Teaching Mathematics, Marilyn Burns
- Contexts for Learning Mathematics, Fosnot et al.
- Scott Foresman · Addison Wesley 2004
- Teaching Student-Centered Mathematics –Van de Walle and Lovin

Grade One 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 first grade, students realize 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?" They are willing to try other approaches.
Students are expected to: **2. Reason abstractly and quantitatively.**	Younger students recognize that a number represents a specific quantity. They connect the quantity to written symbols. Quantitative reasoning entails creating a 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.**	First graders construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also practice their mathematical communication skills as they participate in mathematical discussions involving questions like "How did you get that?", "Explain your thinking," and "Why is that true?" They not only explain their own thinking but listen to others' explanations. They decide if the explanations make sense and ask questions.
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.**	In first grade, students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, first graders decide it might be best to use colored chips to model an addition problem.
Students are expected to: **6. Attend to precision.**	As young children begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and when they explain their own reasoning.
Students are expected to: **7. Look for and make use of structure.**	First graders begin to discern a pattern or structure. For instance, if students recognize *12 + 3 = 15,* then they also know*3 + 12 = 15. (Commutative property of addition.)*To add*4 + 6 +4, the first two numbers can be added to make a ten, so 4 +6 +4 = 10 +4 = 14.*
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. When children have multiple opportunities to add and subtract "ten" and multiples of "ten" they notice the pattern and gain a better understanding of place value. Students continually check their work by asking themselves, "Does this make sense?"

Adapted from Connecticut Standards for Mathematics

Grade 1

Unit 1: Launch - Whole Number Concepts, Estimation and Computation using Addition and Subtraction to Ten

The purpose of the launch is to establish classroom routines. The first unit is intended to engage students in thinking about previously taught material differently while the focus of the lessons is on learning how to engage one another as mathematicians using 21st century skills. Some examples include; turn & talk, think-pair-share, justify reasoning, and constructing viable arguments. Students represent their thinking using mathematical models and numbers, questioning peers for deeper understanding and clarification. The correctness of solutions lies within the logic of the mathematics. Students build on key number concepts to develop fluency of addition and subtraction within ten.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• When counting a set, the number they end on is the number of objects in a set (Cardinality). • When there are two groups and if each object in one group is paired with an object in the other group, then the groups each contain the same number of objects (One to one correspondence). • Numbers grow by one, and exactly one, each time (Hierarchal Inclusion). • The quantity stays the same regardless of the arrangement (Conservation of Number). • Identifying patterns in mathematics helps us to make generalizations. • Commutative Property for addition: The order of addends does not change the result (5+2+7, 2+5=7). • Associative Property for addition -Numbers can be composed and decomposed to make computations easier. -You can flexibly combine numbers using a variety of strategies: e.g. (5+3)+2=5+(3+2) • Contextual problems can be represented using a variety of problem structures. • A variety of strategies can be used to solve addition and subtraction problems. **Thinking Ahead, Linking Big Ideas among units:** **Unit 2: Fact strategies within Twenty** • Expand on unit one using sums up to twenty	• Why do benchmark numbers help solve problems? • How could you compose or decompose numbers to make them easier to add or subtract? • What strategies could you use to add and subtract numbers? • Which strategy is the most efficient for adding or subtracting a given set of numbers and why? • Why do we count?

Common Core State Standards
Grade 1
Unit 1: Whole Number Concepts, Estimation and Computation using Addition and Subtraction within Ten

Operations and Algebraic Thinking

Represent and solve problems involving addition and subtraction.

1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Understand and apply properties of operations and the relationship between addition and subtraction.

1.OA.3. Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*

1.OA.4.Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. Add and subtract within 20.*

Add and subtract within 20.

1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

Work with addition and subtraction equations.

1.OA.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.

1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.*

Number and Operations in Base Ten

Extend the counting sequence.

1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Measurement and Data

Represent and interpret data

1.MD.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Grade 1

Unit 2: Whole Number Concepts, Estimation and Computation using Addition and Subtraction within Twenty

The purpose of this unit is to shift students from relying on counting strategies to strategies that involve composing and decomposing numbers. Students develop foundational understanding of algebraic properties. They understand that numbers can be grouped in a variety of ways, or presented in a different order, and the quantity will stay the same. Students develop automaticity with basic facts by focusing on number relationships and the use of benchmark numbers to develop efficient strategies for computing.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• When counting a set, the number they end on is the number of objects in a set (Cardinality). • When there are two groups and if each object in one group is paired with an object in the other group, then the groups each contain the same number of objects (One to one correspondence). • Numbers grow by one, an exactly one, each time (Hierarchal Inclusion). • Compensation and Equivalence- when you lose one but gain it, the total stays the same (5+3 is equivalent to 4+4). • A collection of objects can be thought of as one group (Unitizing). • Numbers can be grouped in a variety of ways, or presented in a different order, and the amounts stay the same. commutativity- 5+3=3+5 associativity- (5+3)+2=5+(3+2) • Flexibility in composing and decomposing numbers leads to a generalization about the way in which the parts are related to the whole (5+3=8 then 8-3=5). **Thinking Ahead, Linking Big Ideas among units** **Unit 3 : Geometry: Defining Attributes and Partitioning 2-D and 3-D shapes** • Decomposing and composing shapes • Partitioning shapes into part-whole relationship	• Why do we count? • How can two quantities be related? • Why do benchmark numbers help solve problems? • How could you compose or decompose numbers to make them easier to add or subtract mentally? • What strategies could you use to add and subtract numbers? • Which strategy is the most efficient for adding or subtracting a given set of numbers and why? • How can you use benchmark numbers to help you solve problems with bigger numbers? • What relationships help you to determine equivalence? • How can you tell if two different representations of quantity are equivalent?

Common Core State Standards
Grade 1
Unit 2: Whole Number Concepts, Estimation and Computation using Addition and Subtraction within Twenty

Operations and Algebraic Thinking

Represent and solve problems involving addition and subtraction.

1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Understand and apply properties of operations and the relationship between addition and subtraction.

1.OA.3. Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*

1. OA.4.Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. Add and subtract within 20.*

Add and subtract within 20.

1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

1.OA.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

Work with addition and subtraction equations.

1.OA.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.

1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.*

Number and Operations in Base Ten

Extend the counting sequence.

1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Measurement and Data

Represent and interpret data

1.MD.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Grade 1

Unit 3: Geometry: Defining Attributes and Partitioning 2-D and 3-D Shapes

The purpose of this unit is to develop relationships among geometric shapes. Students compose and decompose plane or solid figures and build understanding of part-whole relationships, as well as the properties of the original and composite shapes. They recognize and compare shapes from different perspectives and orientations. Students partition shapes into fractional parts.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• What makes shapes alike and different can be determined by a variety of geometric properties. (e.g. Shapes have sides that are parallel, perpendicular, or neither) • Shapes can be seen from different perspectives. • The ability to perceive shapes from different viewpoints helps us understand relationships between 2-D and 3-D figures and mentally change the position and size of shapes. • Fractional parts must be of equal size. • The more the whole is divided into equal parts, the smaller the parts. (ex. fourths are smaller than halves) • Fractional parts have special names that tell how many parts of that size are needed to make the whole. (ex. fourths require four parts to make a whole) **Thinking Ahead, Linking Big Ideas among units:** **Unit 4: Place Value** • Students think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing 11-19 as composed of ten and some ones).	• What makes shapes alike and different? • What shapes make up larger shapes? • How does breaking a larger shape into smaller shapes help you to think about the attributes of the shape? • What is a fraction? • How can different shapes be divided into two equal parts and four equal parts? • How can you tell when a fraction is larger/smaller when comparing fractions?

Common Core State Standards
Grade 1
Unit 3: Geometry: Defining Attributes and Partitioning 2-D and 3-D Shapes

Geometry
Reason with shapes and their attributes.

1.G.1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

1.G.2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

1.G.3. Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Grade 1

Unit 4: Place Value

The purpose of this unit is to develop the understanding of place value and extend the counting sequence using real world experiences. Students develop an understanding of whole number relationships using place value concepts. Gathering data and studying patterns in our place value system deepen the understanding of place value concepts.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• A digit can represent ones or tens or hundreds, depending on where it is placed. • Place value patterns occur when making and adding groups of ten. • Compensation and Equivalence: when you lose one but gain it, the total stays the same. (Ex.5+3 is equivalent to 4+4) • A collection of objects can be thought of as one group (Unitizing). • The groupings of ones, tens, and hundreds can be put together and taken apart in different ways. (Ex. 23=2 tens and 3 ones or 1 ten and 13 ones or 23 ones) • Numbers can be grouped in a variety of ways, or presented in a different order, and the amounts stay the same. commutativity- 5+3=3+5 associativity- (5+3)+2=5+(3+2) **Thinking Ahead, Linking Big Ideas among units** **Unit 5- Addition and subtraction with multi-digit numbers** • Extending the counting sequence • Adding and subtracting within 100 using a variety of strategies	• What pattern do you see in our number system when you count by ____? • How do you determine the value of a number given its place in the number? • Which strategy is the most efficient for counting and why? • How are two quantities related? • How can a number be decomposed in different ways? • What is the most efficient way to compose or decompose a number? • How do benchmark numbers help you determine the total number of objects?

Common Core State Standards
Grade 1
Unit 4: Place Value

Number and Operations in Base Ten
Extend the counting sequence.
1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.
1.NBT.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

a. 10 can be thought of as a bundle of ten ones — called a "ten."
b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

1.NBT.3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

Use place value understanding and properties of operations to add and subtract.
1.NBT.5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

Measurement and Data
Represent and interpret data
1.MD.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Grade 1

Unit 5: Whole Number Concepts, Estimation and Computation using Addition and Subtraction within 100

The purpose of this unit is to introduce measurement as a context for addition and subtraction of multi-digit numbers. Students will use a variety of strategies that will be modeled using the open number line. Place value concepts will be reinforced with addition and subtraction. Students will use strategies as flexible methods of computing that vary with the numbers and the situation. Students will flexibly, accurately, and efficiently add and subtract.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Numbers can be decomposed and the smaller amounts can be added in varying orders, yet still be equivalent (Associative and Commutative properties). • There are place value patterns that occur when adding on groups of ten. • A collection of objects can be thought of as one group (Unitizing). • Flexible methods of computing vary with the numbers in the situation. • Distance is measured as a series of iterated units. • Units used in measuring can vary but the results will be equivalent. **Thinking Ahead, Linking Big Ideas among units:** **Unit 6: Geometry** • Students compare objects indirectly. • Students understand time as units of measure in hours and half hours.	• How can benchmark numbers, like five and ten, help you to add and subtract? • How do you know if your answer is correct? • How do you know if your strategy will work for all numbers? • Why is it important to consider the numbers first before you choose an efficient strategy to solve the problem? • How can you tell when a strategy is most efficient for a particular problem? • Which strategy is most efficient for keeping track of your measurement? • How can measuring the same object give you different lengths?

Common Core State Standards
Grade 1
Unit 5: Whole Number Concepts, Estimation and Computation using Addition and Subtraction within 100

Operations and Algebraic Thinking

Understand and apply properties of operations and the relationship between addition and subtraction.

1.OA.3. Apply properties of operations as strategies to add and subtract.[2] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*

Add and subtract within 20.

1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

Work with addition and subtraction equations.

1.OA.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2

Number and operations in base ten

Extend the counting sequence.

1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.

1.NBT.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

a. 10 can be thought of as a bundle of ten ones — called a "ten."
b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

Use place value understanding and properties of operations to add and subtract.

1.NBT.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

1.NBT.6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Grade 1

Unit 6: Measurement

The purpose of the unit is to develop an understanding of the meaning and processes of measurement. It focuses on helping students understand what it means to estimate and measure length using a variety of non-standard and standard units. Students will describe the relationship between the size of the measurement unit and the number of units needed to measure something. Students apply their understanding of measurement to time to the hour and half hour. Students will learn to use measurement tools including the digital and analog clock.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Different units are appropriate for measuring specific objects in different contexts. • Estimation helps develop familiarity with the specific unit of measure being used. • Direct comparisons can be made by measuring the difference in length between two objects. • Time is the duration of an event from beginning to end. • Time can be measured in standard units (e.g. seconds, minutes, hours, days). • Recognize the time on a clock by reading the hands. • Fractions are relations: the size of a fractional part is relative to the size of the whole and the size of the whole (unit) is important (e.g. half past, quarter till, quarter after). **Thinking Ahead, Linking Big Ideas among units:** **Unit 7: Exploring Multi-digit Addition and Subtraction** • Algebraic properties help to make estimation and mental computation easier.	• Why is it important to keep the non-standard unit of measure the same when making measurements? • What do you notice about measuring the same objects with two different non-standard units of measure? • When measuring a given object, how is the size of the unit related to the number of units needed? • When is an accurate measure important and when is it practical to estimate? • What would happen if you changed your unit of measure? • How is the clock divided into equal segments? • How are units of time related to one another?

Common Core State Standards
Grade 1
Unit 6: Geometry

Measurement and Data

Measure lengths indirectly and by iterating length units.

1.MD.1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.

1.MD.2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

Tell and write time

1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks

Geometry

Reason with shapes and their attributes.

1. G.3. Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves, fourths*, and *quarters*, and use the phrases *half of, fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. (Students do not need to learn formal names such as "right rectangular prism").

Grade 1

Unit 7: Exploring Whole Number Concepts, Estimation and Computation using Addition and Subtraction Multi-digit Numbers

The purpose of this unit is to deepen the development of addition and subtraction concepts and their inverse relationship. Greater facility with mental computation strategies and estimation become more significant as students evaluate the efficiencies of alternative strategies including the standard algorithm. Algebraic properties are applied to whole numbers when students compute using partial sums. Although greater numbers are explored, automaticity with basic facts with addition and subtraction 0-10 is the goal by the end of grade 1. Students will use a variety of strategies that will be modeled including the use of the open number line. Place value concepts will be reinforced with addition and subtraction. Students will use strategies as flexible methods of computing that vary with the numbers and the situation. Students will flexibly, accurately, and efficiently add and subtract within twenty.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Numbers can be decomposed and the smaller amounts can be added in varying orders, yet still be equivalent • The use of algebraic properties (associative and commutative properties), can make mental computation easier. • There are place value patterns that occur when adding on groups of ten. • A collection of objects can be thought of as one group (Unitizing). • Flexible methods of computing vary with the numbers in the situation. • Distance is measured as a series of iterated units. • Units used in measuring can vary but the results will be equivalent.	• How do partial products sums make it easier to do mental computations? • What different strategies could we use to add and subtract? • How are addition and subtraction related? • How is a number line like a ruler? How do benchmark numbers like 5 and 10 help you solve problems? • How do you know if your answer is correct? • How do you know if your strategy will work for other numbers? • How can decomposing numbers make it easier to mentally compute? • How can the number sentence be thought of in different ways? • Why is it important to consider the numbers first before you choose an efficient strategy to solve the problem? • How can you tell when a strategy is most efficient for a particular problem? • How do you know which operation to use when solving a problem?
Thinking Ahead, Linking Big Ideas: **Grade 2** • Students in grade two build on their understanding of the place value from grade one. • They develop flexible and efficient strategies for computing multi-digit whole numbers with addition and subtraction.	

Common Core State Standards
Grade 1
Unit 7: Exploring Whole Number Concepts, Estimation and Computation using Addition and Subtraction Multi-digit Numbers

Operations and Algebraic Thinking

Understand and apply properties of operations and the relationship between addition and subtraction.

1.OA.3. Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*

Add and subtract within 20.

1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

Work with addition and subtraction equations.

1.OA.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2

Number and operations in base ten

Extend the counting sequence.

1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.

1.NBT.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

a. 10 can be thought of as a bundle of ten ones — called a "ten."
b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

Use place value understanding and properties of operations to add and subtract.

1.NBT.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

1.NBT.6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Fairfield Public Schools

Mathematics

Grade 2

Grade 2

Grade 2 Mathematics Overview

In Grade 2 students build fluency with whole number multi-digit computation in addition and subtraction. Students solve problems within 1000, by applying their understanding of models for addition and subtraction, using properties of operations. They use their understanding of the base ten structure to develop place value concepts. Students use standard units of measure (metric and U.S. customary). Students use measurement tools to understand length. Students describe and analyze shapes by examining their sides and angles. Students investigate, describe and reason about composing and decomposing shapes to make other shapes.

Grade 2 Mathematics Year-At-A-Glance

Pacing Guide

1st Marking Period			2nd Marking Period			3rd Marking Period			
September	October	November	December	January	February	March	April	May	June
Unit 1 Launch/ Fact Strategies + and -, Up to Twenty	Unit 2 Place Value to 1,000	Unit 3 Money	Unit 4 Addition & Subtraction to 100	Unit 5 Addition & Subtraction within 1000		Unit 6 Reasoning with Shapes	Unit 7 Linear Measurement with Standard Units	Unit 8 Exploring Early Multiplication and Division	

Grade 2 Overview

Central Understandings:
Insights learned from exploring generalizations through the essential questions. (Students will understand that...)

- Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools, and technologies.
- Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.
- Shapes and structures can be analyzed, visualized, measured and transformed using a variety of strategies, tools, and technologies.
- Data can be analyzed to make informed decisions using a variety of strategies, tools, and technologies.

Essential Questions

- How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?
- How are quantitative relationships represented by numbers?
- How do geometric relationships and measurements help us to solve problems and make sense of our world?
- How can collecting, organizing and displaying data help us analyze information and make reasonable and informed decisions?

Assessments

- Formative Assessments
- Summative Assessments
- District –Wide Screening Tools

Content Outline:

Unit 1: Fact Strategies
Unit 2: Place Value
Unit 3: Money
Unit 4: Addition and Subtraction within 100
Unit 5: Addition and Subtraction within 1,000
Unit 6: Reasoning with Shapes
Unit 7: Linear Measurement and Time
Unit 8: Exploring Early Multiplication and Division

Mathematics Standards
CT Common Core State Standards (CCSS)

Fairfield Public Schools Skills Matrix (Skills Matrix)

Primary Resources

- About Teaching Mathematics Marilyn Burns
- Contexts for Learning Mathematics Fosnot et. Al.
- Scott Foresman Addison Wesley, 2004
- Teaching Student-Centered Mathematics- Van De Walle and Lovin

Grade Two 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 second grade, students realize 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. They 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?" They make conjectures about the solution and plan out a problem-solving approach.
Students are expected to: **2. Reason abstractly and quantitatively.**	Younger students recognize that a number represents a specific quantity. They connect the quantity to written symbols. Quantitative reasoning entails creating a representation of a problem while attending to the meanings of the quantities. Second graders begin to know and use different properties of operations and objects.
Students are expected to: **3. Construct viable arguments and critique the reasoning of others.**	Second graders may construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They practice their mathematical communication skills as they participate in mathematical discussions involving questions like "How did you get that?", "Explain your thinking," and "Why is that true?" They not only explain their own thinking, but listen to others' explanations. They decide if the explanations make sense and ask appropriate questions.
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.**	In second grade, students consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be better suited. For instance, second graders may decide to solve a problem by drawing a picture rather than writing an equation.
Students are expected to: **6. Attend to precision.**	As children begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and when they explain their own reasoning.
Students are expected to: **7. Look for and make use of structure.**	Second graders look for patterns. For instance, they adopt mental math strategies based on patterns (making ten, fact families, doubles).
Students are expected to: **8. Look for and express regularity in repeated reasoning.**	Students notice repetitive actions in counting and computation, etc. When children have multiple opportunities to add and subtract, they look for shortcuts, such as rounding up and then adjusting the answer to compensate for the rounding. Students continually check their work by asking themselves, "Does this make sense?"

Adapted from Connecticut Standards for Mathematics

Grade 2

Unit 1: Launch - Whole Number Concepts, Estimation and Computation using Addition and Subtraction within Twenty

The purpose of the launch is to establish classroom routines. The first unit is intended to engage students in thinking differently about previously taught material. The lessons focus on learning how to engage one another as mathematicians using 21st century skills. Student discourse is enhanced by using turn & talk and think-pair-share strategies, justifying reasoning and constructing viable arguments for their mathematical thinking. Students represent their thinking using mathematical models and numbers, questioning peers for deeper understanding and clarification. The correctness of solutions lies within the logic of the mathematics.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Identifying patterns in mathematics helps us to make generalizations • Using a benchmark numbers makes mental computation easier, like using 10 to compute with 9s and 8s e.g. 9+8= (10-1) + (10-2) or 20-3= 17 • Equivalence may be shown as models and equations. • Commutative Property for addition: The order of addends does not change the result (6+7=13, 7+6=13) • Associative Property for addition: flexibly combine numbers using a variety of strategies e.g., 6+7 can be thought of as 6+ (4+3) or (6+4)+3 • Known facts can help to determine unknown facts e.g., 7+8=15, 15-7=8 and 15-8=7. • Numbers can be composed and decomposed to make estimation and mental computation easier. • Contextual problems can be represented and solved using a variety of problem structures (e.g., 9+_=17 or _+8=17 or 9+8=_). • Subtraction and addition are inversely related. • Some problems may have extraneous information. • Data can be organized and represented in multiple ways. • Data can be analyzed and interpreted in multiple ways. • Some graphic representations may work better than others for specific types of data.	• Why do benchmark numbers help solve problems? • How could we compose or decompose numbers to make them easier to add or subtract? • How do you know if expressions are equivalent? • Which strategy is the most efficient for adding or subtracting a given set of numbers and why? • Why is it important to analyze and interpret data? • How can data be presented in different ways? • How does the data support your conjecture? • How can you compare different sets of data? • What generalizations can be made from the set of data? • Can trends be identified? • What is the best way to organize a particular set of data and why? • How does organizing data help us understand information? • If you were to continue collecting data what do you think would happen?
Thinking Ahead, Linking Big Ideas among units: **Unit 2: Place Value** • Our number system is structured around multiples of tens, e.g., 2 can represent 2 units, 2 groups of ten, 2 groups of hundreds, 2 groups of thousands. • Benchmark numbers help us to compute mentally.	

Common Core State Standards
Grade 2
Unit 1: Whole Number Concepts, Estimation and Computation using Addition and Subtraction to Twenty

Represent and solve problems involving addition and subtraction.

2.OA.1. Use addition and subtraction within 100 to solve one and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, for example, by using drawings and equations with a symbol for the unknown number to represent the problem.

Add and subtract within 20.

2.OA.2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

Use Place Value understanding and properties of operations to add and subtract.

2.NBT.9. Explain why addition and subtraction strategies work, using place value and the properties of operations.

Represent and interpret data.

2.MD.9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

2.MD.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems[1] using information presented in a bar graph.

Grade 2

Unit 2: Whole Number Place Value Concepts, Estimation and Computation using Place Value

The purpose of this unit is for students to extend their understanding of our place value system by identifying and using patterns. They use algebraic properties to compute and compose and decompose numbers to make computation easier. Numbers are partitioned in standard and non-standard forms, including expanded notation and regrouping, to deepen understanding of equivalence. The concept of multiple sets of 10s and 100s builds foundational understanding of number that will facilitate the work with addition and subtraction in later units.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Position of digits in numbers determines their value, e.g. 706 equals 7 hundreds, 0 tens, and 6 ones. • A collection of objects can simultaneously be thought of as one group and as a collection, e.g. 10 ones make one ten and 10 tens make one hundred. • Skip counting can be more efficient than counting by ones. • Number patterns occur when skip counting, e.g. counting by tens off the decades; 24, 34, 44, 54 • Numbers can be composed or decomposed in order to compute, e.g. 17+8 can be thought of as 17 + (3+5) or (17+3) +5 • Numbers can be compared using place value relationships.	• What pattern do you see in our number system when you count by ___? • How do benchmark numbers help you solve problems? • How can you tell if your relationship is equal? • How does grouping numbers help you to solve problems? • How can you tell if two different representations of a quantity are equivalent?
Thinking Ahead, Linking Big Ideas among units: **Unit 3: Money, Addition and Subtraction within 100 and 1000** • Computation with money amounts uses the same strategies as that of whole numbers. • Algebraic properties apply to computation with money in the same way they apply to whole numbers. • Taking numbers apart and recombining them in flexible ways makes mental computation easier. • The groupings of ones, tens, and hundreds can be taken apart in different ways. e.g., 256 can be 1 hundred, 14 tens, and 16 ones.	

Common Core State Standards
Grade 2
Unit 2: Whole Number Place Value Concepts, Estimation and Computation using Place Value

Number and Operations in Base Ten 2.NBT

Understand place value.

2.NBT.1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

a. 100 can be thought of as a bundle of ten tens — called a "hundred."

b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

2.NBT.2. Count within 1000; skip-count by 5s, 10s, and 100s.

2.NBT.3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

2.NBT.4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.

Grade 2

Unit 3: Whole Number Concepts, Estimation, and Computation with Money

The purpose of this unit is to develop money concepts. Students have multiple opportunities to identify, count, recognize, and use coins and bills. Students will make equivalent amounts using both coins and bills. Students will represent and model their thinking using a variety of models. Money is used to reinforce the understanding of our base ten place value system.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Money is a real world tool. • Computation with money amounts uses the same strategies as computing with whole numbers. • Algebraic properties apply to computation with money in the same way they apply to whole numbers. • Partitioning money helps make combining and taking parting money amounts and computation easier. • The number of coins in a set does not necessarily indicate which of two sets has the greater value. • Making change can be thought of as a part-part-whole problem. • A coin or bill represents a quantity and can simultaneously be thought of as one or a group, e.g. 10 ones (pennies) make one ten (dime) three single dimes is the same as three groups of ten. **Thinking Ahead, Linking Big Ideas among units:** **Unit 4: Addition and Subtraction within 100** • Students need many opportunities to practice fact fluency with flexible strategies by adding and subtracting multiples of 10 using different starting points • Students have multiple opportunities explaining their addition and subtraction thinking. • Students identify number patterns beyond the tens	• How do you know if two equivalent expressions are equivalent? (e.g. .25= 1 quarter or 2 dimes and 1 nickel or 2 dimes, 5 pennies or 5 nickels • What patterns do you notice? e.g. counting by 5s, 10s • What patterns do you notice when you focus on net change? • How did you represent and record your thinking? • What strategies did you use are any strategies related? • How do benchmark numbers help you compute?

Common Core State Standards
Grade 2
Unit 3: Whole Number Concepts, Estimation, and Computation with Money

Number and Operations in Base Ten 2.NBT

Understand place value.

2.NBT.1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

a. 100 can be thought of as a bundle of ten tens — called a "hundred."

b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

2.NBT.2. Count within 1000; skip-count by 5s, 10s, and 100s.

2.NBT.3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

2.NBT.4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.

Work with time and money.

2.MD.8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?

Grade 2

Unit 4: Whole Number Concepts, Estimation, and Computation within 100

The purpose of this unit is to develop algebraic concepts as students solve one- and two-step word problems involving different problem structures. Students develop skills to flexibly, accurately and efficiently add and subtract within 100. Students communicate their thinking and justify their strategies both verbally and in written form. Students reinforce their understanding of our place value system by partitioning numbers into standard and non-standard forms including expanded notation, including regrouping numbers as they deepen their understanding of equivalence. The concept of multiple sets of 10s and 100s build understanding for the work with addition and subtraction in later units.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Flexible methods for computation require a good understanding of the operations and properties of the operations, the commutative and associative property. • Contextual problems can be represented and solved using a variety of problem structures (e.g., 90+_=170 or _+80=170 or 90+80=_). • Numbers can be regrouped into 10s and 100s when adding and subtracting. • Understanding place value strategies supports estimation. • Repeated addition and subtraction with the same number creates a repeating pattern in the ones and tens digits. • Benchmark numbers help make mental computation easier. **Thinking Ahead, Linking Big Ideas among units:** **Unit 5: Addition and Subtraction within 1000** • Students need many opportunities to practice fact fluency with flexible strategies by adding and subtracting multiples of 10 and 100 up to 900 using different starting points. • Students have multiple opportunities explaining their addition and subtraction thinking. • Students identify number patterns beyond the tens.	• What different strategies can we use to add and subtract? • How is a number line like a ruler? • How do benchmark numbers like 5 and 10 help you solve problems? • How do you know if your answer is correct? • How do you know if your strategy will work for all numbers? • How does making "friendly" numbers help you to solve the problem? • How can the number sentence be thought of in different ways? • Why is it important to consider the numbers first before you choose an efficient strategy to solve the problem? • How can you tell when a strategy is most efficient for a particular problem?

Common Core State Standards
Grade 2
Unit 4: Whole Number Concepts, Estimation, and Computation within 100

Represent and solve problems involving addition and subtraction.

2.OA.1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.[1]

Understand place value.

2.NBT.1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

a. 100 can be thought of as a bundle of ten tens — called a "hundred."

b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

Use place value understanding and properties of operations to add and subtract.

2.NBT.5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.NBT.6. Add up to four two-digit numbers using strategies based on place value and properties of operations.

2.NBT.9. Explain why addition and subtraction strategies work, using place value and the properties of operations.

Relate addition and subtraction to length.

2.MD.5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

2.MD.6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

Grade 2

Unit 5: Whole Number Concepts, Estimation, and Computation within 1000

The purpose of this unit is to build on student understanding of the structure of our base ten place value system. Numbers are partitioned in standard and non-standard forms including expanded notation. Students use algebraic properties of operation to deepen understandings of number relationships and equivalence. Multiple sets of 10s, 100s, 1000s build foundational understanding for later work with multiplication concepts. Algebraic properties are used to develop efficient strategies for computing with whole numbers.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Understanding place value helps to support efficient strategies when adding and subtracting within 1,000. • Position of digits in numbers determines their value. e.g., 7,066 equals 7 thousands, 0 hundreds, 6 tens and 6 ones. • Numbers can be mentally added by combining any parts in any order, but it is often easiest to add the greatest place values first. • Partitioning numbers can help support efficient computational strategies. • Contextual problems can be represented and solved using a variety of problem structures (e.g., 900+_=1700 or _+800=1700 or 900+800=_). **Thinking Ahead, Linking Big Ideas among units:** **Unit 6: Reasoning with Shapes** • Students develop spatial reasoning through identifying and visualizing spatial relationships. • Students develop fractional concepts as they decompose shapes.	• What patterns are in our number system when you count by 10, 100, 1000? • How are adding and subtracting by 10s, 100s, and 1,000s similar to skip counting by 10s, 100s, and 1,000s? • How do benchmark numbers help you solve problems? • What different strategies could we use to add and subtract numbers? • How does grouping numbers help solve problems? • How can you tell if two different representations of a quantity are equivalent? • How does understanding the base ten system help us to solve problems? • How does making "friendly" numbers help you to solve the problem? • How can the number sentence be thought of in different ways? • Why is it important to consider the numbers first before you choose an efficient strategy to solve the problem? • How can you tell when a strategy is most efficient for a particular problem?

Common Core State Standards
Grade 2
Unit 5: Whole Number Concepts, Estimation, and Computation within 1000

Number and Operations in Base Ten 2.NBT

Understand place value.

2.NBT.1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

a. 100 can be thought of as a bundle of ten tens — called a "hundred."

b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

Use place value understanding and properties of operations to add and subtract.

2.NBT.7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

2.NBT.8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

2.NBT.9. Explain why addition and subtraction strategies work, using place value and the properties of operations.

Relate addition and subtraction to length.

2.MD.5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using
drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

2.MD.6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

Grade 2

Unit 6: Reasoning with Shapes

The purpose of this unit is to develop spatial reasoning through the identification and visualization of spatial relationships. Students develop fractional concepts as they decompose shapes into equal parts. Students work with the part-whole relationships using equal groups and equal shares of a whole unit. Students identify, describe and draw triangles, quadrilaterals, pentagons and hexagons. Pentagons, triangles, and hexagons appear as both regular (equal sides and equal angles) and irregular. Grade 2 students begin to develop greater specificity of language to describe attributes of shapes.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Shapes are alike and different based on their geometric attributes. • Shapes in different categories may share attributes. • Shapes and solids can be composed and decomposed (part-whole relations). • Fractional parts must be of equal size. • The bottom number of a fraction tells the number of equal parts. The top number tells how many of the equal parts are being named. • Benchmark fractions (halves, thirds and fourths) facilitate estimation. • The more the whole is divided into equal parts, the smaller the parts, e.g. fourths are smaller than halves. • Fractions are relations: the size of a fractional part is relative to the size of the whole and the size of the whole (unit) is important. • Fractional parts can be represented as sets (or groups). **Thinking Ahead, Linking Big Ideas among units:** **Unit 7: Measurement** • Students measure length with non-standard units to standard units of measure. • Students will develop an understanding of time as measurement.	• What shapes make up larger shapes? • How does breaking a larger shape into smaller shapes help you to think about the attributes of the shape? • How well do your estimated measures compare to the actual measures of shapes and why? • In what ways are shapes the same, similar or different when they are moved in space? • What attributes can you use to sort and classify two-dimensional shapes? • In what ways are shapes the same, similar, or different? • What attributes can you use to sort and classify two-dimensional shapes? • What is a fraction? • How can you tell when a fraction is larger/smaller when comparing fractions?

Common Core State Standards Grade 2 Unit 6: Reasoning with Shapes
Reason with shapes and their attributes. 2.G.1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. 2.G.3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Grade 2

Unit 7: Linear Measurement with Standard Units

The purpose of this unit is to shift student thinking from measuring length using non-standard units to using standard units of measure (metric and U.S. Customary). Students develop estimation strategies using units of inches, feet, centimeters, and meters. Students describe the relationship between the size of the measurement unit and the number of iterations of the units needed to measure objects. Students develop an understanding of time as measurement and measure time to the nearest 5-minutes.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Different tools and units are appropriate for measuring specific objects in different contexts • Estimation helps develop familiarity with the specific unit of measure being used. • Direct comparisons can be made by measuring the difference in length between two objects by laying them side by side and selecting an appropriate standard length unit of measure. • Inches, feet and yards are US Customary standard units used to measure length. Centimeters and meters are standard units used in the metric system to measure length. • Fractions are relations: the size of a fractional part is relative to the size of the whole and the size of the whole (unit) is important • Benchmark fractions (halves, fourths) facilitate estimating time on the clock. • Time is the duration of an event from beginning to end. • Time can be measured in standard units (e.g. seconds, minutes, hours, days). • There are patterns and relationships among units of time measure.	• Why is it important to keep the unit of measure uniform when making measurements? • What do you notice about measuring the same objects with two different units of measure? • What is a benchmark measure and how does it help you estimate length? • What does the unit measure mean? • When measuring a given object, how is the size of the unit related to the number of units needed? • When is the accurate measure important and when is it practical to estimate? • How is a number line like a ruler? • Which is an appropriate tool and unit of measure to measure a given object and why? • How is the clock similar to a ruler? • How are units of time related to one another? • What does each hand on the clock represent? • How could you divide the clock into equal parts? • What are the two cycles in a 12 hour day?
Thinking Ahead, Linking Big Ideas: **Unit 8: Early Multiplication and Division** • Students begin to think of two numbers simultaneously as they consider the number of objects in a group and the number of groups they have.	

Common Core State Standards
Grade 2
Unit 7: Linear Measurement with Standard Units

Measure and estimate lengths in standard units.

2.MD.1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

2.MD.2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

2.MD.3. Estimate lengths using units of inches, feet, centimeters, and meters.

2.MD.4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Relate addition and subtraction to length.

2.MD.6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

Work with time and money.

2.MD.7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

Reason with shapes and their attributes.

2.G.3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, or four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Understand place value.

2.NBT.3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

Grade 2

Unit 8: Whole Number Concepts, Estimation, and Computation by Exploring Early Multiplication and Division

The purpose of this unit is to develop foundational skills for understanding multiplication as a more efficient method for addition. Students deepen their understanding of addition and subtraction with whole numbers as they use part-whole relationships with equal-sized groups. Students understand odd and even numbers by investigating numbers using strategies like dividing sets into equal-sized groups and skip counting.

Big Ideas: The central organizing ideas and underlying structures of mathematics.	**Essential Questions**
• Skip counting can be used to find the total number of objects in a collection of equal groups. • Multiplication can be thought of as repeated addition. • Multiplication can be represented using models. • Algebraic properties apply to multiplication. • Multiplication and division are related.	• What different strategies can we use to add subtract and more efficiently? • How is multiplication related to addition? • How is division related to subtraction? • How do benchmark numbers, like 5 and 10, help you solve problems? • How do you know if your strategy will work for all numbers? • How does making "friendly" numbers help you solve the problem? • How can the number sentence be thought of in different ways? • Why is it important to consider the numbers first before you choose an efficient strategy to solve the problem?
Thinking Ahead, Linking Big Ideas: **Grade 3** • The focus of third grade is to shift from thinking additively to thinking multiplicatively • Students develop an understanding of fractions especially unit fractions • Student build on grade 2 work by analyzing two-dimensional shapes and describing attributes with greater specificity.	

Common Core State Standards
Grade 2
Unit 8: Whole Number Concepts, Estimation, and Computation with Exploring Early Multiplication and Division

Understand place value.

2.NBT.2. Count within 1000; skip-count by 5s, 10s, and 100s.

Work with equal groups of objects to gain foundations for multiplication.

2.OA.3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

2.OA.4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Reason with shapes and their attributes.

2.G.2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

DRAFT

ENCLOSURE NO. 2

MAR 12 2013

Board of Education, Fairfield Public Schools
501 Kings Hwy East, Fairfield CT 06825
Tuesday, February 26, 2013

Minutes of the Regular Meeting of the Board of Education

Voting Summary:

Approval of Minutes

A. Approval of Minutes of the Special Meeting of January 22, 2013. Ms. Iacono moved/Mr. Convertito seconded the recommended motion "that the Board of Education approve the Minutes of the Special Meeting of January 22, 2013." Motion passed 8-0.

B. Approval of Minutes of the Special Meeting of January 24, 2013. Mr. Kery moved/Mrs. Gerber seconded the recommended motion "that the Board of Education approve the Minutes of the Special Meeting of January 24, 2013." Motion passed 8-0.

C. Approval of Minutes of the Regular Meeting of January 29, 2013. Ms. Iacono moved/Mrs. Gerber seconded the recommended motion "that the Board of Education approve the Minutes of the Regular Meeting of January 29, 2013." Motion passed 8-0.

Fairfield Ludlowe High School Educational Specifications.

Mr. Kery moved/Mrs. Gerber seconded the recommended motion "that the Board of Education approve the Fairfield Ludlowe High School Educational Specifications." Mr. Dwyer made a friendly amendment to remove the renovation of student lavatories from the educational specifications; Mr. Kery and Mrs. Gerber accepted. Ms. Iacono called the question, seconded by Mr. Kery; it passed 6-2 (Kennelly, Convertito, Gerber, Dwyer, Iacono, Kery in favor; Liu, Fattibene against). The amended motion passed 7-1 (Kennelly, Convertito, Gerber, Dwyer, Iacono, Fattibene, Kery in favor; Liu against).

Adjournment

Ms. Iacono moved/Mrs. Kennelly seconded the recommended motion "that this Regular Meeting of the Board of Education Adjourn." Motion passed 8-0. Meeting adjourned 10:33PM.

Detailed Minutes:

1. Call to Order and Roll Call

Chairman Philip Dwyer called the meeting to order at 7:34 p.m. Other members present were Jennifer Maxon Kennelly, John Convertito, Perry Liu, Jessica Gerber, Pamela Iacono (arrived 7:40 p.m.), Paul Fattibene, and Tim Kery. Sue Brand was absent. Also in attendance were Dr. David Title, members of Central Office, student representatives Marco Congello and Alice Rocha, and approximately 25 members of the public.

Mr. Dwyer led the Board and audience in the pledge of allegiance.

2. ***Presentations***

New Teacher and Administrator Evaluation Plan/Requirements
Dr. Title introduced Ms. Esther Bobowick, Director, Professional Development Services (CES). Ms. Bobowick stated that she was a student in Fairfield, and taught at Andrew Warde and Ludlowe as a Special Education Teacher. She stated that her current position as Director is to function as a district/state liaison for Professional Development Services encompassing 17 school districts. She stated that her presentation will focus on the minimum requirements for the new teacher and administrator evaluation program. Ms. Bobowick explained the design process would consider multiple standards, promote consistency, foster dialogue about student learning, encourage aligned professional development, and ensure feasibility of implementation. Ms. Bobowick stated that the guidelines are reflected in a chart as follows:

- Levels of Performance: Overall ratings are: Exemplary, Proficient, Developing and Below standard.
- Process: Orientation, Planning and Goal setting, Evidence Collection, Mid-year check in, Local reporting, State Reporting, Summative assessment.
- Student growth and development: 1-4 goals for student growth, measured by Indicators of Academic Growth and Development (IAGD) based on standardized state tests, one non-standardized indicator, and a mutual agreement necessary for weighting of multiple IAGDs.
- Whole school learning indicators OR student feedback.
- Performance and practice: Standards-based framework and observations
- Parent OR Peer Feedback
- Support and development

Ms. Bobowick stated that goals must be aligned with common core of teaching, and that the biggest challenge thus far in the pilot districts is time. Ms. Bobowick stated that as an example, a principal with 45 teachers may need 7 hours to go through the process, which equals 315 hours, or 42 days of time. Training time is critical. Data teams need to know what is being collected; there is a 5-8 day commitment just to be trained in how to do this.

Mr. Convertito asked if every teacher and administrator need to be evaluated every year. Ms. Bobowick stated yes. Ms. Bobowick stated that Bridgeport, Norwalk, Bethany, Litchfield, New London, and Waterford are some of the pilot districts. In response to Mr. Convertito, Dr. Title stated that there are no collective bargaining implications, all the same rules apply under this system that are currently applied, but there is a lot more to be done.

Mr. Kery asked what happens when a teacher and administrator cannot reach an agreement on the teacher goals. Ms. Bobowick stated that if a mutual agreement on goals is not accomplished, there is a dispute process, but the goal setting should be up to the administrator to have a conversation around the goal, and ensure the goal is attainable and appropriate. Ms. Bobowick stated that goals may change mid-year due to extraordinary circumstances such as when a teacher is absent for 8 weeks, and conversely the goal can be enhanced if students are doing very well. Mr. Kery asked about flexibility with this program, and Ms. Bobowick stated that these are the minimum requirements. In response to Mr. Kery, Dr. Title stated that this process is not within our purview to change, but perhaps some efficiencies can be created such as all 5th grade teachers with the same goal – but this will be labor

intensive. Dr. Title stated that the flexibility relates only to next year; it is possible to evaluate less than 100% of teachers, but starting in 14/15, everyone does everything. Dr. Title stated that this must all be done at the same time as adapting to common core and new smarter balanced assessments. Ms. Bobowick stated that every state is facing the same dilemma from the federal government.

Mr. Dwyer asked about the 7 hours being a guess. Ms. Bobowick stated that it is a realistic guess, depending on the administrator.

Ms. Iacono stated that she has no confidence that this will be pulled off in time, and requested a copy of the presentation. Ms. Bobowick stated that the goals might have benchmark assessments which are very specific and quantifiable. Ms. Iacono asked how to determine school-wide goals. Ms. Bobowick stated that it should be as many people as possible from district that would add to the decision making process. Ms. Iacono asked what Dr. Title's plan is. Dr. Title stated that there is a committee developing the administrator evaluation and teacher evaluation, and they have to get something in by April 15. Ms. Iacono asked who evaluates the administrators. Dr. Title stated that there is no change in the organizational chart. Ms. Bobowick stated that highly trained teachers may also do observations, and Denver is using this model – 'complementary evaluators'. Dr. Title stated the term "teacher" also applies to math specialists, reading specialists, special education, etc. Ms. Iacono asked for a breakout of the work-load ratios – teacher to administrator. Ms. Iacono stated that she is concerned with the budget constraints and the requirement to have more administrators. Ms. Bobowick stated that she agrees with Ms. Iacono that more administrators are needed for this evaluation process, the new common core, etc., and it would be better to not cut administrators for at least the next 2 years while this new evaluation is being formed. Ms. Iacono asked what is being done to communicate this to the public so that it is clear that administrators cannot be cut. Ms. Bobowick stated that there are 8 or 9 bills before the legislature related to this process in order make this public, etc. This was put in to law so that Connecticut could get a waiver for 'No Child Left Behind'.

Mr. Liu asked how the pilot districts are doing. Ms. Bobowick stated that it is a struggle due to time, and there are no penalties for pilot districts. In the training piece – teachers need to understand the process. Mr. Liu asked whether it was too early to see if this is helping to identify teachers that are doing well or that need help. Ms. Bobowick stated that it is too early in the process. In response to Mr. Liu, Dr. Title stated that a draft is being crafted to submit by April, which won't be implemented until September. Dr. Title stated that a partial implementation may be more trouble than it is worth.

Mr. Fattibene asked about the rating areas. Ms. Bobowick stated that that the district makes the decision, and this does not require a Board decision. Dr. Title stated the only thing the Board has to do is make the decision on partial implementation; the plan design is not a Board vote. Ms. Bobowick stated the matrix that is used is a State matrix.

Mr. Convertito asked about administrator evaluation, and whether teachers can provide feedback. Ms. Bobowick stated that 10% of the administrator evaluation is comprised of teacher and parent feedback.

Mrs. Kennelly stated that there is a time lapse with test scores. Dr. Title stated that if test scores come back late there is a provision to change the final rating. Mrs. Kennelly asked if there might be a conflict of interest if the teacher goals don't support the administrator goals. Ms. Bobowick stated that this is

usually not the case, but there is an appeal process. Mrs. Kennelly stated that an appeal process can impact time.

Ms. Iacono asked if CABE was involved with this process. Ms. Bobowick stated that CABE was involved and that's why it took so long; the implications for budget and time were not fully understood.

Mr. Convertito asked what is gained by opting out of NCLB and going with this? Dr. Title said NCLB had escalating consequences; the law was broken and couldn't be fixed or undone, so the waiver process ensued and the federal government pushed this reform process. Dr. Title stated that if this were implemented properly it would have a positive impact, but the feasibility of doing this now is questionable.

Ms. Bobowick stated that Fairfield is very participatory and other districts look to Fairfield for guidance on this.

3. ***Approval of Minutes***

A. Approval of Minutes of the Special Meeting of January 22, 2013. Ms. Iacono moved/Mr. Convertito seconded the recommended motion "that the Board of Education approve the Minutes of the Special Meeting of January 22, 2013."
Motion Carried: 8:0:0

B. Approval of Minutes of the Special Meeting of January 24, 2013. Mr. Kery moved/Mrs. Gerber seconded the recommended motion "that the Board of Education approve the Minutes of the Special Meeting of January 24, 2013."
Motion Carried: 8:0:0

C. Approval of Minutes of the Regular Meeting of January 29, 2013. Ms. Iacono moved/Mrs. Gerber seconded the recommended motion "that the Board of Education approve the Minutes of the Regular Meeting of January 29, 2013."
Motion Carried: 8:0:0

4. ***Student Reports***

Marco Congello and Alice Rocha reported on current events and accomplishments at Fairfield Ludlowe High School. School staff and community responded quickly when the roof blew off. CAPT testing begins on Monday, and AP test registration is in the process of being distributed. Winter sports season was very successful; wrestling team had 25 victories, 3 wrestlers advanced to State Open, and one advanced to the New England's; gymnastics won 2nd in FCIACs and 3rd in States and one gymnast won individual championship in FCIACs (Perry Kindall). Despite the blizzard, the Quebec, AFS and Builders Beyond Borders trips took place. The college panel info session was held for juniors.

5. ***Board Committee/Liaison Reports***

Ms. Iacono stated that the Riverfield Building Committee is trying to re-work the plan to get the costs down to $13 million.

Ms. Gerber stated that the Communications Committee has been attending PTA meetings and the PTAs are pleased the BOE is reaching out. The committee hopes to finish the PTA visits by March and will get a report out after that time. Ms. Gerber stated 2 things are consistently commented on: public comment and minutes. Ms. Gerber stated that there have been comments on the placement and timing of public comment. Ms. Gerber stated that it has been commented that the minutes can be difficult to read with regard to the votes, and they sometimes take too long to get posted. Ms. Gerber stated that it might be helpful to provide BOE biographies on line. Ms. Gerber stated that any communications decisions will be voted on by the Board. Ms. Iacono stated that audience is broader than only PTA's.

Mr. Dwyer stated that the Goals Committee is moving along.

6. ***Superintendent's Report***

Update on Blizzard/2012-2013 School Calendar

Dr. Title stated that this is the year of natural disasters and that the last day of school is currently Wed. June 26. The graduation date will be decided after April 1, and will be on the agenda for the April meeting. We have not received any indication that State will entertain a waiver. Dr. Title stated that there has been extraordinary cooperation with Town and school personnel, which made it possible to open the school after the roof blowing off as well as after the blizzard. This work rivaled the hurricane effort, and Dr. Title publicly thanked Sal and Dave Fryer for their efforts. In response to Mrs. Kennelly, Dr. Title stated that Ludlowe doesn't have to make up the lost day due to the roof, but the staff will make up the day. Mr. Kery echoed the sentiments of Dr. Title regarding the Town and schools working together, and that there are very good examples of staff positively impacting student learning under difficult circumstances. Mr. Kery stated that we have an extraordinary team and he thanked the team for all their efforts.

7. ***Review of Capital Projects Waterfall***

Dr. Title stated that in preparation for the Capital Projects Summit, the waterfall was updated with cash-flow projection. Dr. Title spoke to the waterfall enclosure, created by Lisa Moscato, Tom (Cullen) and Doreen (Munsell). Dr. Title stated that he is requesting feedback on this as there will be a revised capital project plan for the Board's consideration. Fairfield Ludlowe High School is in several places, and the question is should this be done at once or over several years? Mr. Dwyer stated that projects can be swapped but monies will have to be the same.

Mr. Kery asked if projects exceed the $8 million 13-14 number, then another project has to come out? Dr. Title stated that this is a living document and this is all trade-offs, but none of these projects are pre-approved. Dr. Title stated that there is no sentiment from BOF to move anything up.

In response to a question from Mrs. Kennelly, Dr. Title stated that we used to carry a $2 million number that we could ask for, and now we have actual numbers of which none add up to $2 million, which saves money.

8. ***Old Business***

Fairfield Ludlowe High School Educational Specifications

Mr. Dwyer stated that Mr. Bill Silver of Silver/Petrucelli and Associates is in attendance to answer questions, not to make a presentation.

Mr. Kery moved, Mrs. Gerber seconded the recommended motion "that the Board of Education approve the Fairfield Ludlowe High School Educational Specifications."

Mr. Kery asked if there is a way to improve the air quality without spending millions of dollars. Mr. Silver answered that the upper level only could be air conditioned. Mr. Kery asked if better air flow were possible. Mr. Silver stated that capacity would have to be added to those fans at a significant cost.

In response to a question from Mr. Dwyer, the original Ed Specs did not include any ventilation improvements.

Mr. Kery asked if toilet code updates are mandatory or optional? Mr. Silver stated that the ADA is not mandatory, it is a federal law; not state statute, and that some parts of school are in compliance.

Dr. Title stated that the student lavatory is a renovation of deteriorating lavatories.

Mr. Kery stated that the survey was done prior to roof blowing off, and asked if there is a sense of urgency with evaluating the roof. Mr. Morabito stated that the roof that was blown off had a warranty that expired in 2006, and the roof is aging and problematic; but we cannot predict roof failure. Mr. Kery asked if engineers had checked the remainder of the roof. Mr. Morabito said it is not an immediate concern, but on a 15 year warranty we are on the 22nd year. Ms. Iacono asked if projects were to be ranked by urgency, should the roof be done prior to the windows or toilets. Mr. Silver stated that weatherproofing is highest priority, and would provide better insulative value. Dr. Title stated that if something needs to be knocked off the Fairfield Ludlowe Project, then it should be the lavatories.

Mrs. Kennelly stated that coming back to waterfall, if something were added, then something needs to be taken away. Dr. Title said roof may take 2 years to do and that there is a long lead time on windows and on the roof. Dr. Title is looking for direction on what to take to Board of Selectman for consideration.

Mr. Dwyer asked if the air conditioning is not part of waterfall, and if it became a priority then the waterfall would have to be changed. Dr. Title confirmed this.

Ms. Iacono asked if there is an air quality issue at Fairfield Ludlowe. Mr. Cullen clarified that the new spaces for the Fairfield Ludlowe addition would be required to have mechanical means for fresh air and air conditioning. Mr. Cullen stated that there are air quality issues within the guidance area, there is a need for supplemental air. Mr. Greg Hatzis stated that the means of assessment is through "Tools for Schools"; this survey will take place using a new online survey; there may be some updates by the next meeting. Mr. Hatzis stated that the number one complaint is thermal comfort; all windows in the back of school, with sun beating down in rooms causes high levels of heat. Mr. Cullen stated that new windows will help with this. Mr. Kery asked if it would be more optimal to do this duct work when the roof is off, and Mr. Silver stated no. Mrs. Kennelly asked whether a no-build was considered by re-configuring space. Mr. Silver stated that space efficiency was looked at and no-build was considered and it is in the report. Mr. Dwyer asked if the Board could refer to page 3 of the Educational Specifications.

Board discussion followed on actual numbers (cost) as listed in the Educational Specification. Dr. Title stated the menu of options is listed on the last page. Mr. Silver stated that there are some 'soft costs' involved and are all listed.

Ms. Iacono asked if the lounge in "lounge relocation" was a space only for seniors. Mr. Hatzis stated that he would review the policy on this. He stated he was looking to provide a place that students could go to study rather than having students congregating in places where they shouldn't be. Mr. Hatzis stated this is about re-purposing of current space. Mr. Silver stated that the square feet of this space is roughly the size of half of a classroom.

Mrs. Kennelly asked whether reimbursables are factored in. Mr. Silver stated that this is capital costs only. Mr. Dwyer said to review the waterfall chart. Mr. Cullen stated that the net rate is 26% for renovations. Dr. Title stated that the net rate is closer to 20%. Mr. Cullen stated that reimbursement rates will differ based on whether the project is submitted as a whole or separately.

Mr. Fattibene stated that there are 2 schemes. Mr. Silver stated that Scheme 2 is simpler and has operational benefits beyond dollars. Mr. Fattibene asked if fresh air system duct work were added would that make it cheaper to put in air conditioning later. Mr. Silver stated that the same ductwork cannot be used; air conditioning requires larger size duct work.

In response to a question from Mr. Convertito, Mr. Cullen stated that roof warranties will not be affected by any cuts done in the roof for duct work. Mr. Convertito asked, and Mr. Cullen confirmed that oversized duct work was added at Sherman school to provide air conditioning at a later date.

In response to Mr. Kery, Dr. Title stated that the reimbursement of 20% would be spread out over years.

Mr. Dwyer asked if the $11 million were passed, would that fit into the waterfall? Dr. Title stated that it would have to make it to all the Town bodies by June 30 for reimbursement. Dr. Title stated that there is no guarantee that this will be approved; this is to move it forward.

Mr. Kery stated the roof has to be done. Dr. Title stated that the windows also need to be done, as PCB testing was done. Mr. Kery stated that he is inclined to go with $11 million and accepts the friendly amendment to remove the lavatories from the Educational Specifications.

Mr. Fattibene stated that he is dismayed at not being able to add in ductwork due to excess cost.

Mr. Dwyer stated the friendly amendment is to remove the renovation of student lavatories and adopt the Ed Specs for $11,637,000 recognizing that this tells the Town that the HVAC issues in existing building and the toilets will have to come at a future phase. Mr. Dwyer stated that he did not see any objection to the friendly amendment, so it now becomes the main motion.

Mr. Cullen confirmed that the only change is to remove lavatories.

Ms. Iacono asked if it is going to cost more money to put in ductwork at a later time. Mr. Silver stated it is more cost effective to put in ductwork now, but new windows may vastly improve temperature.

Mr. Dwyer stated the Ed Specs include 2 science classrooms, 2 general purpose classrooms, cafeteria, senior lounge, windows, lockers, and roofing; it does not include the student lavatories or the HVAC in the existing building.

Public Comment on Motion:
Suzanne Miska, Ryegate Road stated that she is concerned about the configuration of school in the event of a fire. She suggests taking the day care out and redistricting rather than asking for taxpayers to pay the bill.

Cathy Coyle , Sherwood Farm Road, stated that the request for a Building Committee was made over a year ago. There are a number of issues that need to be addressed. She encouraged the Board to expedite the Ed Specs.

Christine Vitale, Verna Hill Road, stated that it is hot in the school; she appreciates the price tag but the effect of the heat should not be discounted. She stated she is also concerned about how quickly the lavatory renovation was dismissed and asked that this be reconsidered.

Mr. Liu stated that he cannot support this; he stated he does support a new roof and new windows, but because this involves adding space without exploring other options, he cannot support it.

Mrs. Kennelly stated that moving the ECC has been mentioned several times and is there a reason this has not been pursued? Mr. Dwyer stated that the Board approved this approach and it would require a Board vote to take a different approach. Ms. Iacono stated that this space was designed specifically for that program, and more than $4 million dollars for this project was invested. Ms. Iacono stated that Oldfield is not within our purview. Mrs. Gerber stated that the difference between the two high schools this year and next year is 122 students. Mrs. Gerber stated that next year, Fairfield Warde High School will also be over 1400 (capacity), and so it would not make much sense to redistrict.

Mr. Liu stated that these are all theories and he has not seen a real breakdown; he suggested taking a look at the different ways to see what cost benefit works best.

Mr. Kery requested a point of order, that the redistricting has already been discussed 2 years ago.

Ms. Iacono moved to call the question, seconded by Mr. Kery.

Motion Carried: 6:2:0 Mrs. Kennelly, Mr. Convertito, Mrs. Gerber, Mr. Dwyer, Ms. Iacono, Mr. Kery in favor; Mr. Liu, Mr. Fattibene against

Mr. Kery moved/Mrs. Gerber seconded the recommended motion "that the Board of Education approve the Fairfield Ludlowe High School Educational Specifications." Mr. Dwyer made a friendly amendment to remove the renovation of student lavatories from the educational specifications. Mr. Kery and Mrs. Gerber accepted.

Motion Carried: 7:1:0 Mrs. Kennelly, Mr. Convertito, Mrs. Gerber, Mr. Dwyer, Ms. Iacono, Mr. Fattibene, Mr. Kery in favor; Mr. Liu against

9. New Business

Request from FairTV Cable Advisory Council

Mr. Dwyer stated that more documents are required before this can be discussed and this will be postponed to the next meeting.

10. Public Comments and Petitions

Dawn Llewellyn, Sturges Road stated that an Illinois superintendent reported that college readiness benchmarks dropped while using CPM.

Wendy Cohenuram, Park Drive, stated that she hopes the Board will take into consideration that many end-of-year plans involve non-refundable tickets, tuitions and days off from work.

11. Open Board Comment

Mr. Dwyer stated that the combined Board of Finance/Board of Selectman hearing is scheduled for March 5th at 7:00 p.m. Mr. Dwyer asked that Board members respond to Meg if attending the celebrity luncheon.

12. Adjournment

Ms. Iacono moved, Mrs. Kennelly seconded the recommended motion: "that this Regular Meeting of the Board of Education adjourn at 10:33 p.m."

Motion Carried: 8:0:0

Jessica Gerber
Fairfield Public Schools
Secretary, Board of Education

ENCLOSURE NO. 3

MAR 12 2013

From: Philip Dwyer

BOE Members:

As you will see from the email and resume below, FairTV has re-organized its Operating-Advisory Council and wrote their by-laws to allow for the Board of Education to appoint a member of their Council. They have indicated the appointment cannot be from the BOE and have suggested we consider the "other" Tom Flynn as our appointment.

Our by-laws provide for the Chair to appoint liaisons to other community groups (as the chair deems appropriate), but our by-laws call for that appointment to come from the BOE membership. Thus, this is a hybrid request and I decided to place it on the February agenda for discussion before I respond to FairTV.

We may have several options, but three that come to mind are:

1. Thank them for the opportunity but indicate we choose not to take advantage at this time.

2. Thank them for the opportunity and take their suggestion (Some of us have met Mr. Flynn at LWV events) and appoint Mr. Flynn, as suggested.

3. Thank them for the opportunity, but indicate we will also give consideration to other interested parties, and then make the appointment from those candidates. In which case BOE members should think of other people who would have an interest.

I will invite a representative from the FairTV to attend the February BOE meeting to answer any questions you may have.

Phil

From: "James Kennelly"

Greetings Chairman Dwyer:
The Fairfield BOE is entitled, under the bylaws of the Cable Advisory Council of Area 2 for Cablevision of Southern CT (CAC2), to appoint a representative to the Council. It can not be a BOE member.

CAC2 was created as part of the franchise agreement requirements all cable systems in CT must enter to become service providers. It provides consumer oversight to the cable operator in a service area. Cable Advisory Council of Area 2 provides oversight for a region which includes Fairfield, Bridgeport, Stratford, Milford, Orange and Woodbridge. Since the enactment of legislation in 2008, the CAC2 has been tasked with disbursing $100,000 in subscriber funds annually to the members towns of the region that operate education and government access channels. In Fairfield, the FairTV Broadcast System operates those channels.

The FairTV Operational Committee respectfully requests you consider a member of our committee, Mr. Thomas Flynn for appointment to this position. His resume is attached for your consideration. Mr. Flynn will simply require a letter from the secretary of the Board of the Board or Superintendent's Office acknowledging his selection as your Board's representative to the Cable Advisory Council of Area 2. I do not know if your bylaws allow the chairman to appoint without a formal vote of the entire board, but certainly the sooner he could be appointed, the better.

The term of such an appointment is usually two years. Mr. Flynn could begin serving in March and aid in our efforts to secure grant funding from the CAC2 for the FairTV Broadcast System.

Thanks for your cooperation in this matter.

Sincerely

Jim Kennelly
Chairman
FairTV Operational Committee

Resume For Consideration As Fair TV Commissioner

Thomas F Flynn
67 Sachem Road, Fairfield CT 06825
(203) 334-8096
flynjoyce@yahoo.com

In Summary, what I can offer:

A current, reasonably in-depth knowledge of Fair TV as well as its sister organizations in other Area 2 towns, as well as in other Connecticut towns. This was gained as Co-chair of a 2011-2012 League of Women Voters study of local area public broadcasting. The major impetus for the study was Soundview's attempt in 2011 to eliminate Area 2, which would have likely eliminated, in addition to other improvements, the progress Fair TV has made in the past few years in providing effective coverage of local government meetings. During this study, the study group communicated with a number of local towns, including all Area 2 towns, on their practices. As a result, the League submitted testimony against Soundview's position. The League also supported the new budget line for Fair TV.

A 40-year background of community service in Fairfield, including seven years on the Family Life Advisory Council to the Board of Education; (Three as Chair), during its formative years,

Leadership roles in many other Fairfield organizations, including twenty years of in-depth volunteer work with Operation Hope (includes two terms on its Board of Directors)

Involvement in Some Local Organizations (more current listed first) with highest organizational post(s) noted:

- 2000 to present. League of Women Voters of Fairfield. Co-president for four years; Co-chair of 2011-2012 Fair TV Study.
- 2011 to present. Caroline House. Head up computer support for language lab of about thirty computers) for women learning English
- 1970 to present. Our Lady of Assumption Parish. Have chaired Parish Advisory Council. Created and presently head monthly effort to cook dinner for shelter. Eucharistic Minister.
- 1988 to 2008. Operation Hope. Two terms on Board of Directors. Chaired 1990 Tag Sale.
- Created and implemented, together with a team of volunteers, present information technology strategy.
- 1970 to 1985 PTA. Co-winner of Diana Kiernen Award winner with wife Joyce in 1988. Co-President, with wife Joyce, of Andrew Warde PTA; Fourteen consecutive years of PTA Board membership in various schools.
- Others; Scouts, Little League, Pequot Library Book Sale, Fairfield Public Library

Awards:
Chosen with wife Joyce to light the town Christmas tree in 2012
Diana Kiernan Award with wife Joyce in 1988
Fairfield Jaycees Outstanding Young Man in Fairfield in 1973

ENCLOSURE NO. 4

MAR 12 2013

Board of Education
Policy Guide

Students

Welfare

ADMINISTRATION OF MEDICATION IN THE SCHOOLS **5514**

In compliance with the Connecticut General Statutes*, administration of medications by school personnel will be permitted to meet the health needs of individual students with chronic or short term health problems.

Medications will be administered pursuant to the written order of an authorized prescriber and the written consent of the parent or guardian.

Medications in the schools will be administered by a licensed nurse (RN or LPN) or in the absence of a nurse~~;~~, the following school personnel who have been properly trained by a school nurse or school medical advisor may administer medications:

- Principals and teachers;
- Licensed physical therapists (PT) or occupational therapists (OT) employed by the school district;
- Paraprofessionals in the case of a specific student with a medically diagnosed allergic conditions that may require prompt treatment to protect the student against serious harm or death;
- Coaches and licensed athletic trainers, during intramural or interscholastic athletic events, employed by the school district for inhalant medications prescribed to treat respiratory conditions or medication administered with a cartridge injector for students with a medically diagnosed allergic condition which may require prompt treatment to protect the student against serious harm or death;
- In school readiness programs and before and after-school programs, directors or directors' designees, lead teachers or school administrators;

Students

Welfare

ADMINISTRATION OF MEDICATION IN THE SCHOOLS **5514**
(continued)

The school nurse or school principal shall select a qualified school employee to, under certain conditions, give a glucagon injection to a student with diabetes who may require prompt treatment to protect him/her from serious harm or death. The nurse or principal must have the written authority from the student's parent/guardian and a written order from the student's Connecticut-licensed physician. The authorization shall be limited to situations when the school nurse is absent or unavailable. No qualified school employee shall administer this medication unless (A) he/she annually completes training required by the school nurse and school medical advisor in the administration of medication with injectable equipment used to administer glucagon, (B) the school nurse and school medical advisor attests, in writing, that the qualified school employee has completed such training, and (C) the qualified school employee voluntarily agrees to serve as a qualified school employee. The injections are to be given through an injector or injectable equipment used to deliver an appropriate dose of glucagon as emergency first aid response to diabetes. For the purpose of administering a glucagon injection "qualified school employee" means a principal, teacher, licensed athletic trainer, licensed physical or occupational therapist employed by the district, coach, or school paraprofessional.

The nurse must examine on-site any new medication~~;~~**,** medication order and parental permission form and develop a medication administration plan for the student before any medication is given. If a school nurse determines any medication administration plan should be re-evaluated, the parent/guardian and licensed prescriber shall be notified immediately by the school nurse. In addition, the nurse will consult with the nursing supervisor and the school medical advisor. In accordance with standard nursing practice, the school nurse may refuse to administer or allow ~~to be administered~~ **school personnel to administer** any prescription medication which, based on her/his individual assessment and professional judgment, has the potential to be harmful, dangerous**,** or inappropriate. In such cases a parent has the right to come to the school and administer the medication himself/herself.

The time or place where a student with diabetes may test his/her blood-glucose level on school grounds shall not be restricted provided the student has written parental/guardian permission and a written order from a physician stating that such child is capable of conducting self-testing on school grounds.

Students

Welfare

ADMINISTRATION OF MEDICATION IN THE SCHOOLS 5514AR
(continued)

Reviewed and Approved 8/19/02
by Town of Fairfield Board of Health

Reviewed and Approved 10/22/02
by Town of Fairfield Board of Education

Reviewed and Approved 8/4/03
by Town of Fairfield Board of Health

Reviewed and Approved 1/29/04
by Town of Fairfield Board of Education

Reviewed and Approved 8-6-07
by Town of Fairfield Board of Health

Reviewed and Approved 12/10/07
by Town of Fairfield Board of Health

Reviewed and Approved 1/22/08
by Town of Fairfield Board of Education

Reviewed and Approved 1-10-11
by Town of Fairfield Board of Health

Reviewed and Approved 5-10-11
by Town of Fairfield Board of Education

Reviewed and Approved 11-19-12
by Town of Fairfield Board of Education

SHM Vol. II, Sec. 3, Medications

***CGS** Section 10-212a Administration of Medications in Schools, including liability.

Reviewed and Approved 8/10/98
by Town of Fairfield Board of Health

Reviewed and Approved 9/15/98
by Town of Fairfield Board of Education

Reviewed and approved 6/12/00
by Town of Fairfield Board of Health

Reviewed and Approved 8/22/00
by Town of Fairfield Board of Education