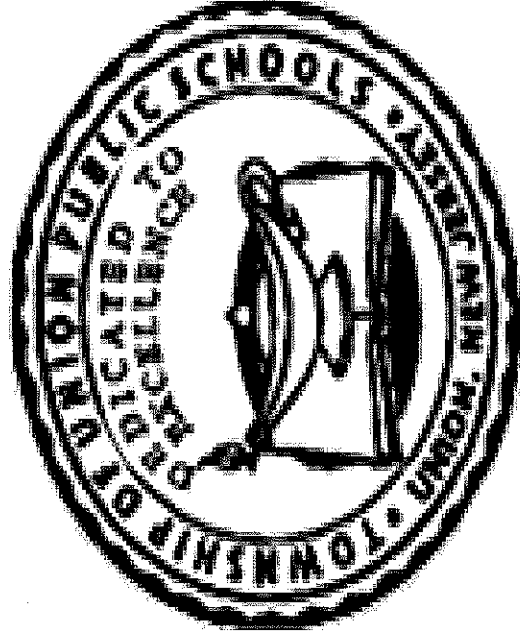
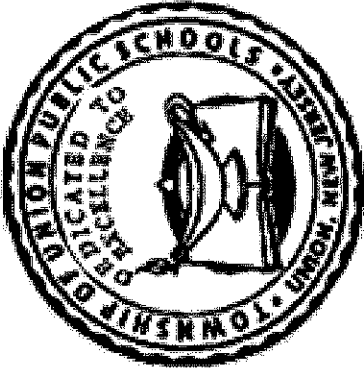


TOWNSHIP OF UNION PUBLIC SCHOOLS



**3rd Grade Mathematics
Curriculum Guide
2014-15**



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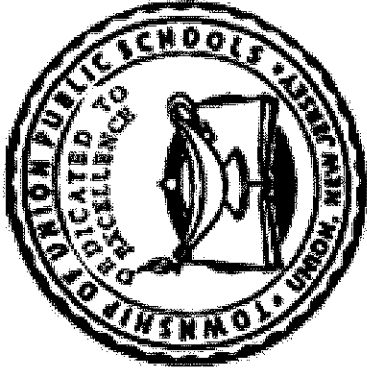
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TOWNSHIP OF UNION PUBLIC SCHOOLS
Administration

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DEPARTMENT SUPERVISORS

Nicole Ahern

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Joseph Seugling

Special Services: 9 - 12

Donna Wozniak

Special Services: PreK - 8

10-Month

Maureen Corbett

English: PreK - 2, Social Studies: PreK - 2

Deborah Ford

Mathematics: 3 - 5, Science: 3 - 5

Libby Galante

Social Studies: 6 - 12, Business

Robert Ghiretti

English: 3 - 5, Social Studies: 3 - 5

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Yvonne Lorenzo

Career Ed, World Lang., ESL, Computers, G&T

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Art, Music

**Curriculum Committee
Mathematics Grade 3**

**Julie Biederman
Cynthia Carhart
Jaelyn Vincent**

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Mission Statement

The Township of Union Board of Education believes that every child is entitled to an education designed to meet his or her individual needs in an environment that is conducive to learning. State standards, federal and state mandates, and local goals and objectives, along with community input, must be reviewed and evaluated on a regular basis to ensure that an atmosphere of learning is both encouraged and implemented. Furthermore, any disruption to or interference with a healthy and safe educational environment must be addressed, corrected, or when necessary, removed in order for the district to maintain the appropriate educational setting.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Statement of District Goals

- Develop reading, writing, speaking, listening, and mathematical skills.
- Develop a pride in work and a feeling of self-worth, self-reliance, and self discipline.
- Acquire and use the skills and habits involved in critical and constructive thinking.
- Develop a code of behavior based on moral and ethical principals.
- Work with others cooperatively.
- Acquire a knowledge and appreciation of the historical record of human achievement and failures and current societal issues.
- Acquire a knowledge and understanding of the physical and biological sciences.
- Participate effectively and efficiently in economic life and the development of skills to enter a specific field of work.
- Appreciate and understand literature, art, music, and other cultural activities.
- Develop an understanding of the historical and cultural heritage.
- Develop a concern for the proper use and/or preservation of natural resources.
- Develop basic skills in sports and other forms of recreation.

Course Description

The third grade math curriculum is currently aligned with the CCSS as implemented for 2013-2014. All skills required for mastery are a part of the third grade proficiency list. The third grade curriculum focuses on

- Operations and Algebraic Thinking
- Number and Operations in Base 10
- Number and Operations – Fractions
- Measurement and Data
- Geometry

Recommended Textbooks

**Go Math! (Houghton Mifflin Harcourt)
CCSS Edition**

Course Proficiencies

Students will be able to...

Operations and Algebraic Thinking

- Use multiplication and division within 100 to solve word problems
- Determine the unknown whole number in a multiplication or division equation
- Use the identity, commutative, associative, and distributive properties for addition and multiplication; apply these properties as strategies to multiply or divide
- Understand division as an unknown factor problem; write related multiplication and division facts
- Fluently multiply and divide within 100
- Know from memory all multiplication facts up to twelve
- Solve two-step word problems involving the four operations (addition, subtraction, multiplication, division)
- Identify and explain arithmetic patterns

Number and Operations in Base Ten

- Round whole numbers to the nearest ten or hundred
- Fluently add and subtract whole numbers within 1000
- Use rounding and compatible numbers to estimate sums and differences
- Multiply one-digit whole numbers by multiples of 10 in the range 10 - 90

Number and Operations - Fractions

- Understand a fraction as one part of a whole that is divided into equal parts
- Represent and locate fractions on a number line.
- Understand two fractions as equivalent; recognize and generate simple equivalent fractions
- Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers
- Compare and order fractions with like denominators or like numerators

Measurement and Data

- Read, write, and tell time on digital and analog clocks to the nearest minute
- Solve word problems involving addition and subtraction of time intervals in minutes
- Measure and estimate liquid volumes and masses of objects using grams, kilograms, and liters
- Generate measurement data by measuring lengths using inch and cm rulers
- Display, read, and interpret measurement data in a line plot
- Draw, read, and interpret data in a scaled picture graph and a scaled bar graph

Geometry

- Understand concepts of perimeter and area as attributes of polygons
- Estimate and measure perimeter of polygons using inch and cm rulers
- Estimate and measure area of plane shapes by counting unit squares
- Relate area to the operations of multiplication and addition to find the area of a rectangle; apply the distributive property
- Compare areas of rectangles with the same perimeter, and perimeters of rectangles with the same area
- Identify, describe, and compare plane figures: angles; polygons; intersecting, perpendicular, and parallel lines; quadrilaterals; triangles
- Partition shapes into parts with equal areas

Curriculum Units

Unit 1: Operations and Algebraic Thinking

Unit 2: Number and Operations in Base 10

Unit 3: Number and Operations - Fractions

Unit 4: Measurement and Data

Unit 5: Geometry

Pacing Guide-

SEPTEMBER:

Chapter 1 – Addition and Subtraction within 1,000

OCTOBER:

Chapter 2 – Represent and Interpret Data (must include line graphs)

OCTOBER/NOVEMBER

Chapter 3 – Understand Multiplication

Chapter 4 – Multiplication facts and strategies

NOVEMBER/DECEMBER

Chapter 5 – Use Multiplication Facts (must include factors of 11 and 12)

DECEMBER

Chapter 6 – Understand Division

Chapter 7 – Division Facts and Strategies (through 7.6)

JANUARY

Chapter 7 – Division Facts and Strategies (complete)

FEBRUARY

Chapter 8 – Understand Fractions

MARCH

Chapter 9 – Compare Fractions

APRIL

Chapter 10 – Time, Length, Liquid Volume, and Mass

MAY

Chapter 11 – Perimeter and Area

JUNE

Chapter 12 – Two-Dimensional Shapes (finish)

Word problems, open-ended questions, problem-solving, and number/operational/shapes patterns should be introduced and used throughout the year.

Unit 1: Operations and Algebraic Thinking

Essential Questions	Instructional Objectives/ Skills and Benchmarks(CPIs)	Activities	Assessments
<p>How can you add and subtract whole numbers and decide if an answer is reasonable?</p>	<ul style="list-style-type: none"> • Identify and describe whole-number patterns and solve problems • Round 2 and 3 digit numbers to the nearest ten or hundred • Use compatible numbers and rounding to estimate sums • Use the Commutative and Associative Properties of Addition to add more than two addends • Use the break apart strategy and place value to add 3-digit numbers • Use a number line, the break apart strategy, or compatible numbers to estimate differences and subtract. • Solve addition and subtraction problems by using the strategy <i>draw a diagram</i> 	<ul style="list-style-type: none"> • Students can read <i>So Many Seashells</i> to learn how to use addition to find the number of seashells collected in the story. (Grab and Go) • For subtraction and estimation, students can read <i>More Acorns!</i> to determine how many acorns Sanford Squirrel needs for the winter. (Grab and Go) • Students can play the game <i>Auto Addition</i> to practice 2-digit addition to move along the game path (Grab and Go) • Students can make "Fortune Tellers" and write 3-digit addition and subtraction problems for partners to solve.. 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>How can you use multiplication to find how many in all?</p> <p>How can you use multiplication facts, place value, and properties to solve multiplication problems?</p> <p>What strategies can you use to multiply?</p>	<ul style="list-style-type: none"> • Use equal groups and a number line to find how many in all. • Find out how multiplication is like addition and how it is different. • Use arrays to model multiplication and find factors. • Use the strategy <i>draw a diagram</i> to solve one and two step problems. • Use the Commutative Property of Multiplication and/or the Associative Property of Multiplication to find products • Multiply a number by 0 or 1. • Multiply by 2,3,4,5,6,7,8,9, and 10. • Use the Distributive Property to find products by breaking apart arrays. • Use properties to explain patterns on the multiplication table. • Use the strategy <i>make a table</i> to solve multiplication problems. <ul style="list-style-type: none"> • Describe a pattern in a table. • Use an array or a multiplication table to find an unknown factor. 	<ul style="list-style-type: none"> • Students broaden their initial understanding of multiplication as repeated addition by dealing with situations involving arrays, expansions, and combinations. Questions of these types are not easily explained through repeated addition: <i>How many stamps are on this 7 by 8 sheet? How big would this painting be if it was 3 times as big? How many outfits can you make with 2 pairs of pants and 3 shirts?</i> • Students use counters to model both repeated subtraction (<i>There are 12 cookies. How many bags of 3?</i>) and sharing (<i>There are 12 cookies and 3 friends. How many cookies each?</i>) meanings for division and write about the difference in their journals. • Students can take small squares of colored paper and glue them onto a blank rectangular piece of paper to make an array. The students will then write about how many squares they have in 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals

<p>How can you use division to find how many in each group or how many equal groups?</p> <p>What strategies can you use to divide?</p>	<ul style="list-style-type: none"> • Use strategies to multiply with multiples of 10. • Model and record multiplying multiples of 10 by 1-digit whole numbers. • Model a division problem to find how many in each group or how many equal groups. • Use bar models and/or arrays to solve division problems. • Find how division related to subtraction. • Use multiplication to divide. • Write a set of related multiplication and division facts. • Use the rules for dividing with 1 and 0. • Divide by 2, 3, 4, 5, 6, 7, 8, 9, 10. • Use the strategy <i>act it out</i> to solve two-step problems. • Use order of operations to solve problems. • Use division to find how many in each group or how many equal groups. • Use strategies to divide. 	<ul style="list-style-type: none"> • each row and column with the matching multiplication sentence. Once all of the students are finished, the teacher can use these "buildings" to make a <i>Multiplication City</i> bulletin board in the classroom. • Students can make a "Circles and Stars" booklet. Each page consists of groups of circles and stars made by the student with corresponding repeated addition and multiplication number sentences. • Students explore division by reading <i>The Doorbell Rang</i> by Pat Hutchins. In this story, Victoria and Sam must share 12 cookies with increasing numbers of friends. Students can use counters to show how many cookies each person gets. • Students play <i>multiplication war</i>, using a deck of cards with kings and queens removed. All of the cards are dealt out. Each player turns up two cards and multiplies their values (Jacks count as 0; aces count as 1). The "general" draws a target number from a hat. The player closest to the target wins a point. The first player 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group • Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals
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How can we solve problems involving the four operations, and identify and explain patterns in arithmetic?

- to get 10 points wins.
- Students can use color tiles to make arrays. Have students demonstrate various ways to demonstrate the Commutative Property when they use the tiles to make the arrays.
- Students can work in cooperative groups to create their own word problems.
- Students can use the ACT It Out Strategy to solve word problems.
- Students can use real world problems to create word problems that relate to them.
- Students can use writing and language arts to create word problems using correct grammar and word usage.
- Solve real-world problems using estimation, basic operations (Whole number addition, subtraction, and multiplication), and calculators.
- Use a hundred chart to find the patterns.
- Students model repeating patterns with counters or pennies. Ex. They repeatedly add two pennies to their collection and describe the results.

FORMAL ASSESSMENTS

- Teacher Made tests
- End of Unit tests
- One on One task assessments
- Performance Checklists
- Rubrics
- Standardized Tests
- Quizzes
- District made tests
- Extended Constructed Response Questions

INFORMAL ASSESSMENTS

- Cooperative Group Projects
- Portfolios
- Teacher Observations
- Student Work
- Individual Conferences
- Group Discussions
- Journals

Additional Literature Connections:

- Alexander, Who Used to Be Rich Last Sunday
- Annabelle Swift, Kindergartener
- Bats on Parade
- Grapes of Math
- Math for all Seasons
- One Stuck Duck
- 1,001 Things to Spot in a Sea
- Spunky Monkeys on Parade
- Amanda Beans, Amazing Dream
- The Best of Times
- Each Orange Had 8 Slices
- The 512 Ants on Sullivan Street
- 100 Hungry Ants
- Pigs will be Pigs
- Sea Squares
- Count to a Million
- How Much, How Many, How Far, How Heavy, How Long, How Tall is 1,000?

Unit 2: Number and Operations in Base Ten

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CP/s)	Activities	Assessments
<p>How can you add and subtract whole numbers and decide if an answer is acceptable?</p> <p>How can you use multiplication facts, place value, and properties to solve multiplication problems?</p>	<ul style="list-style-type: none"> • Round 2 and 3 digit numbers to the nearest ten or hundred. • Use compatible numbers and rounding to estimate sums and differences. • Count by tens and ones, use a number line, make compatible numbers, or use friendly numbers to find sums and differences mentally. • Use the Commutative and Associative Properties of Addition to add more than two addends. • Use break apart strategy to add 3-digit numbers. • Use place value to add 3 digit numbers. • Use the combine place values strategy to subtract 3 digit numbers. • Solve multiplication problems by using the strategy draw a diagram. 	<ul style="list-style-type: none"> • Students can play "Roll, Round, and Cover." Create a number board with base ten and hundred numbers. Students roll the dice to create a number, round it to the nearest ten or nearest hundred (based on the number of dice) and cover that number on the game board. First partner to cover all board spaces wins. • "Rounding Round Up" – Label construction paper in various colors by hundreds from 100-900. Label about 40 index cards with varying numbers from 100-900 such as 123, 654, 875, 913, etc. Put students in partners or small groups and give them 3 minutes to round and place the index cards in the right spots. • Read <u>How Much. How Many. How Far. How Heavy. How Long. How Tall is 1,000?</u> 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals

Unit 3: Number and Operations - Fractions

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<ul style="list-style-type: none"> • How can you use fractions to describe how much or how many? • How can you compare fractions? 	<ul style="list-style-type: none"> • Explore and identify equal parts of a whole. • Divide models to make equal representations. • Use a fraction to name one part of a whole that is divided into equal parts. • Read, write, and model fractions that represent more than one part of a whole that is divided into equal parts. • Represent and locate fractions on a number line. • Relate fractions and whole numbers by expressing whole numbers as fractions and recognizing fractions that are equivalent to whole numbers. • Model, read, and write fractional parts of a group. • Find fractional parts of a group using unit fractions. • Solve fraction problems by using the strategy draw a diagram. • Solve comparison problems by using the strategy act it out. • Compare fractions with the same denominator by using reasoning strategies. 	<ul style="list-style-type: none"> • "Lucky Charms Fractions" Given a handful of lucky charms cereal, the students will determine the total number of marshmallows in their pile. Then they will separate them into categories; i.e. hearts, rainbows, balloons, shamrocks, etc. After they are separated they will determine the fraction of each category out of the total number of marshmallows. • Students use geoboards, pattern blocks, Cuisenaire Rods, paper folding, and tangrams to explore common fractions. They may be challenged to model $\frac{1}{4}$, $\frac{5}{6}$ and $\frac{2}{3}$ for instance, with all of the different models. • "Fraction Bingo" – Teacher will call out a fraction such as "$\frac{2}{3}$" and the students will need to find the picture representation for that fraction on their individual play boards. 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
	<ul style="list-style-type: none"> • Compare fractions with the same numerator by using models and reasoning strategies. • Compare fractions by using models and strategies involving the size of the pieces in the whole. • Model equivalent fractions by folding paper, using area models, and using number lines. • Generate equivalent fractions using models. 	<ul style="list-style-type: none"> • "Deck of Cards Comparison of Fractions" – You need a deck of cards (no face cards), scratch paper, and a pencil. Place students in pairs. Draw a horizontal line down the center of the paper. Have student take turns placing two cards from the pile on top to create two numerators and two cards below the line to represent the denominators. They should now see two fractions side by side. Students should work together to compare the fractions, i.e. which one is greater. Students should write down the fractions with the $>$, $<$, or $=$ symbol. Keep working through the deck of cards. <p><u>Additional Literature Connections:</u></p> <ul style="list-style-type: none"> • <u>George Shrinks</u> • <u>Give me Half</u> • <u>Eating Fractions</u> 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group • Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals

Unit 4: Measurement and Data

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>How can you represent and interpret data?</p> <p>How can you tell time and use measurement to describe the size of something?</p> <p>What types of problems are solved with measurement?</p> <p>What are tools of measurement and how are they used?</p> <p>What is the purpose of standard units of measurement?</p> <p>How can information be gathered, recorded, and organized?</p> <p>How can you solve problems involving perimeter and area?</p>	<ul style="list-style-type: none"> • Organize data in tables. • Draw, read and interpret data in a picture graph. • Draw, read and interpret data in a scaled bar graph. • Represent and interpret data. • Solve multi-step problems using data represented in scaled graphs. • Read, write, and tell time to the nearest minute and measure time intervals in minutes on analog and digital clocks. • Decide when to use A.M & P.M when telling time to the nearest minute. • Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. • Use a number line or analog clock to measure time intervals and add and 	<ul style="list-style-type: none"> • Students use different objects such as skittles, m&ms or different color cubes to create a tally table, picture graph, and bar graph showing the number represented. • Students survey the class to find out the students' favorite subjects and create a bar graph to show the data. • Students investigate and survey 20 people on their own and collect data on "favorite season" and create a frequency chart, tally table, and bar graph to show the data. • Students investigate truth-in-packaging by reading labels, estimating weights, and then using balances to weigh foods. • Teacher sets a timer for it to go off every hour. The students identify the time and the activity they do throughout the school day 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group • Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals

	<p>subtract time intervals to find starting times or ending times.</p> <ul style="list-style-type: none"> • Measure length to the nearest half or fourth inch and use measurement data to make a line plot. • Measure and estimate liquid volumes and masses of objects using standard units of grams(g), kilograms(kg), and liters(l). • Add, subtract, multiply or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. • Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. • Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate 	<p>and continue it for homework.</p> <ul style="list-style-type: none"> • Students investigate liquid volume by pouring liquid into containers that they see around the house (milk gallon, water bottle, measuring cup, etc.) • Students use cubes to fill rectangular boxes of various sizes as they explore the concept of volume. Students find out how many inches long their hand is. The class then generates a graph showing the results. • Students use rulers to measure the length of the room in feet and inches and then in metric units. • Students find out how many inches long their hand is. The class then generates a graph showing the results. • Students write about how they might measure the distance from the cafeteria to their classroom or the area of the gym. • Students use Unifix cubes or pattern blocks to create designs. They then discuss how many blocks they used (area) and the 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals
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	<p>units-whole numbers, halves, or quarters.</p> <ul style="list-style-type: none"> • Explore perimeter of polygons by counting units, using inch, and using centimeter rulers. • Find the unknown length of a side of polygon when you know its perimeter. • Estimate and measure area of plane shapes by counting unit squares. • Relate area to addition and multiplication by using area models. • Compare areas of rectangles that have the same perimeter. • Compare perimeters of rectangles that have the same area. 	<p>distance around their design (perimeter).</p> <ul style="list-style-type: none"> • Students can use the tiles on the classroom floor to determine the area and perimeter of a particular section of the room already laid out by the teacher. • Using graph paper, students can create arrays making different rectangles and determine the area and perimeter of each. <p><u>Additional Literature Connections</u></p> <ul style="list-style-type: none"> • <u>How Big is a Foot</u> • <u>George Shrinks</u> 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals
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Unit 5: Geometry

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What are some ways to describe and classify two-dimensional shapes?</p> <p>How can spatial relationships be described by careful use of geometric language?</p>	<ul style="list-style-type: none"> • Identify and describe attributes of plane shapes • Describe angles in plane shapes. • Identify polygons by the number of sides they have. • Determine if lines or line segments are intersecting, perpendicular, or parallel. • Describe, classify, and compare quadrilaterals based on their sides and angles. • Draw quadrilaterals • Describe and compare triangles based on the number of sides that have equal length and by their angles. • Solve problems to classify plane shapes. • Partitions shapes into parts with equal areas and express the area as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape. 	<ul style="list-style-type: none"> • Have students look pictures of mosaics. Discuss how geometry might have been used. Partner students up and have them make paper mosaics with construction paper by cutting out shapes. • Students compare the sizes of the many shapes found in the classroom, such as the heights of students or the areas of their hands. • Read "The Greedy Triangle" and have students discuss the different shapes in the book. • Students look for a "Shape of the Day" throughout the school day, recording the number of times that the shape is seen. • Students make a chart or bar graph showing how many squares, rectangles, triangles, etc., they find in their classroom. • Students combine tangram pieces to create a variety of shapes. 	<p>FORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Teacher Made tests • End of Unit tests • One on One task assessments • Performance Checklists • Rubrics • Standardized Tests • Quizzes • District made tests • Extended Constructed Response Questions <p>INFORMAL ASSESSMENTS</p> <ul style="list-style-type: none"> • Cooperative Group Projects • Portfolios • Teacher Observations • Student Work • Individual Conferences • Group Discussions • Journals

Common Core State Standards for Mathematics – Grade 3

Operations and Algebraic thinking

- represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Number and Operations in Base ten

- Use place value understanding and properties of operations to perform multi-digit arithmetic.

Number and Operations—Fractions

- develop understanding of fractions as numbers.

Measurement and Data

- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- represent and interpret data.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Geometry

- Reason with shapes and their attributes.

Mathematical Practices to be used throughout:

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

New Jersey Scoring Rubric

Table C.4: NJ ASK Generic Mathematics Rubric

3-Point

Response

The response shows complete understanding of the problem's essential mathematical concepts. The student executes procedures completely and gives relevant responses to all parts of the task. The response contains few minor errors, if any. The response contains a clear, effective explanation detailing how the problem was solved so that the reader does not need to infer how and why decisions were made.

2-Point

Response

The response shows nearly complete understanding of the problem's essential mathematical concepts. The student executes nearly all procedures and gives relevant responses to most parts of the task. The response may have minor errors. The explanation detailing how the problem was solved may not be clear, causing the reader to make some inferences.

1-Point

Response

The response shows limited understanding of the problem's essential mathematical concepts. The response and procedures may be incomplete and/or may contain major errors. An incomplete explanation of how the problem was solved may contribute to questions as to how and why decisions were made.

0-Point

Response

The response shows insufficient understanding of the problem's essential mathematical concepts. The procedures, if any, contain major errors. There may be no explanation of the solution or the reader may not be able to understand the explanation. The reader may not be able to understand how and why decisions were made.