Math Curriculum K-8

	September	October	November	December	January	February	March	April	May	June
Grade K	Counting and Cardinality	Counting and Cardinality	Counting and Cardinality/ Operations and Algebraic Thinking	Operations and Algebraic Thinking	Operations and Algebraic Thinking	Measurement & Data	Measurement & Data	Measurement & Data	Geometry	Geometry
Grade 1	Addition and Subtraction through 20	Addition and Subtraction through 20	Addition and Subtraction through 20	Addition and Subtraction through 20	Place Value/ Addition & Subtraction through 20	Place Value/ Addition & Subtraction through 20	Measurement and Data	Measurement and Time	Geometry	Geometry
Grade 2	Addition and Subtraction Concepts-Two-Digit Numbers	Addition and Subtraction Concepts-Two-Digit Numbers	Addition and Subtraction Concepts-Two-Digit Numbers	Place Value	Addition & Subtraction 3 Digit Numbers	Money	Multiplication and Division Readiness	Linear Measurement & Time	Data Analysis	Geometry
Grade 3	Place Value	Place Value	Addition and Subtraction	Multiplication and Division	Multiplication and Division	Algebraic Representation	Fractions	Measurement	Data Analysis	Geometry
Grade 4	Place Value	Place Value	Addition and Subtraction	Multiplication and Division	Multiplication and Division	Fractions	Decimals	Algebraic Representation	Measurement	Geometry/ Data
Grade 5	Place Value/ Decimals	Multiplication and Division	Multiplication and Division	Multiplication and Division	Fractions	Fractions	Algebraic Representation	Linear Measurement	Data Sets & Populations	Geometry
Grade 6	Number System	Number System	Number System/ Ratio & Proportional Relationships	Ratio & Proportional Relationships	Expressions & Equations	Expressions & Equations	Geometry	Geometry	Statistics & Probability	Statistics & Probability
Grade 7	Rational Numbers	Rational Numbers	Ratio & Proportional Relationships	Ratio & Proportional Relationships	Ratio & Proportional Relationships/ Equations, Expressions & Inequalities	Equations, Expressions, & Inequalities	Equations, Expressions, & Inequalities/ Geometry	Geometry	Statistics & Probability	Statistics & Probability
Grade 8	Number System	Equation & Expressions	Equation & Expressions	Geometry	Geometry	Geometry	Equations & Expressions	Geometry	Geometry	Statistics & Probability/Functions
Algebra	Solving Equations and Inequalities	Solving Equations and Inequalities	Introductionto Functions	Linear Functions/ Inequalities and Systems	Linear Functions/ Inequalities and Systems	Linear Functions/ Inequalities and Systems/ Exponents & Exponential Functions	Exponents & Exponential Functions / Polynomials	Polynomials/ Quadratic Functions and Equations	Quadratic Functions and Equations	Quadratic Functions and Equations

Pacing Guide	
Content Area: Mathematics	
Grade Level: Kindergarten	
Unit 1: Counting & Cardinality	**September –November**
Unit 2: Operations & Algebraic Thinking	**November – January**
Unit 3: Measurement & Data	**February - April**
Unit 4: Geometry	**April - June**

Content Area: Math	**Grade Level : Kindergarten**

Unit Title: Counting & Cardinality

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.K.1 Participate in collaborative conversations with diverse partners about *kindergarten topics and texts* with peers and adults in small and larger groups.
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CCSS.ELA-LITERACY.W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

21st Century Themes: • Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 1. Title: Counting & Cardinality</td><td colspan="2">Time Frame: 7 weeks / Chapters 1 – 2 weeks, Chapter 2-2 weeks, Chapter 3-3 weeks</td></tr>
<tr><td colspan="3">Standards:
K.CC.1
K.CC.3
K.CC.4
K.CC.4(a)
K.CC.4(b)
K.CC.6</td></tr>
<tr><td colspan="2">Enduring Understanding:
Numerals represent numbers
Number names describe the number of objects
The last number counted in a sequence represents the objects in the set
Forming numbers correctly represents the quantity counted
By counting & comparing quantities we can determine which is more or less</td><td>Essential Questions:
How do we show how many?
What do numbers tell me?
How can I show numbers beyond 10?</td></tr>
<tr><td colspan="2">Knowledge and Skills:
Students will…
Count numbers 1-10, Count to 50 by 1’s, Count to 100 by 1’s and 10’s
Write numbers 1-20
Demonstrate one-to-one correspondence
Compare numbers as greater than/less than
Identify a group with one or two more
Name numbers when counting in sequence by ones & tens
Show a value of a group of objects</td><td>Demonstration of Learning:
See attached tasks (NJ Model Math Curriculum)</td></tr>
<tr><td colspan="2">Suggested Tasks and Activities:
“Model the Math” activities in Teacher Edition for each lesson
“Literature Connection” found in Teacher Edition for each lesson
“Real-World Problem Solving Reader”
Assessment Masters – Diagnostic Test for each unit Chapter Test – on level (2A)
RTI Differentiated Instruction / ELL Support for each chapter
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<tr><td colspan="3">Resources: My Math series, manipulatives</td></tr>
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Content Area: Math	**Grade Level : Kindergarten**

Unit Title: Operations & Algebraic Thinking

Interdisciplinary Connections: English Language Arts:

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CCSS.ELA-LITERACY.SL.K.1.A Follow agreed-upon rules for discussions
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 2. Title: Operations & Algebraic Thinking</td><td colspan="2">Time Frame: 12 weeks Chapter 4-3 weeks, Chapter 5-3 weeks, Chapter 6-3 weeks, Chapter 7-3 weeks</td></tr>
<tr><td colspan="3">Standards:
K.OA.1
K.OA.3
K.OA.4
K.NBT.1</td></tr>
<tr><td colspan="2">Enduring Understanding:
Addition and subtraction involve combining or separating amounts
Numbers can be taken apart and recombined in a variety of ways to find sums and differences
The place value of teen numbers is made up of one group of ten and ones</td><td>Essential Questions:
How can we show a number in other ways?
How can I use objects to add?
How can I use objects to subtract?</td></tr>
<tr><td colspan="2">Knowledge and Skills:
Students will…
Join two groups of objects to make a number
Make a new group
Use symbols (+) and (=)
Demonstrate multiple ways to make 10
Separate a part of a group from a larger group
Use symbols (-) and (=)
Demonstrate multiple ways to take numbers from 10</td><td>Demonstration of Learning:
See attached tasks (NJ Model Math Curriculum)</td></tr>
<tr><td colspan="2">Suggested Tasks and Activities:
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Content Area: Math	**Grade Level : Kindergarten**

Unit Title: Measurement & Data

Interdisciplinary Connections: English Language Arts:

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<table>
<tr><td>Unit 3. Title: Measurement & Data</td><td>Time Frame: 4 weeks Chapter 8-2 weeks, Chapter 9-2 weeks</td></tr>
<tr><td colspan="2">Standards:
K.MD.1
K.MD.2
K.MD.3</td></tr>
<tr><td>Enduring Understanding:
Measurement can be described using words
Measuring identifies objects by length, height, and weight
Objects can be sorted by size and shape</td><td>Essential Questions:
How do I describe and compare objects by length, height, and weight?
Why do we sort objects?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Compare lengths of objects
Compare heights of objects
Compare weights of objects
Describe measurable attributes
Identify objects that are alike and different
Sort objects into groups by size, shape, and count</td><td>Demonstration of Learning:
See attached tasks (NJ Model Math Curriculum)</td></tr>
<tr><td>Suggested Tasks and Activities:
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Content Area: Math	**Grade Level : Kindergarten**

Unit Title: Geometry

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<table>
<tr><td>Unit 4. Title: Geometry</td><td>Time Frame: 6 weeks Chapter 10-2 weeks, Chapter 11-2 weeks, Chapter 12-2 weeks</td></tr>
<tr><td colspan="2">Standards:
K.G.1
K.G.2
K.G.4
K.G.5
K.G.6</td></tr>
<tr><td>Enduring Understanding:
The position of an object can be determined in relation to another object and be described in words
Shapes are everywhere
Objects are made up of many simple shapes
Patterns can grow and repeat
Objects can be described and compared by attributes
Understand the properties of two and three dimensional shapes</td><td>Essential Questions:
How do I identify position?
How can I compare shapes?
How do I identify and compare three dimensional shapes?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Use words above, below, in front of, behind, next to, and beside to describe/place an object with respect to another object
Identify, name, and describe squares, rectangles, circles, triangles, and hexagons
Understand patterns
Put shapes together to form new shapes
Identify, name, and describe spheres, cubes, cylinders, and cones</td><td>Demonstration of Learning:
See attached tasks (NJ Model Math Curriculum</td></tr>
<tr><td>Suggested Tasks and Activities:
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Pacing Guide	
Content Area: Mathematics	
Grade Level: First	
Unit 1: Addition and Subtraction Through Twenty	**September –December**
Unit 2: Place Value / Addition and Subtraction with 2 digit numbers	**January- February**
Unit 3: Measurement & Data	**March**
Unit 4: Measurement and Time	**April**
Unit 5: Geometry	**May - June**

Content Area: Math	**Grade Level : First**

Unit Title: Addition and Subtraction Through Twenty

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.RI.1.1 Ask and answer questions about key details in a text.
CCSS.ELA-LITERACY.RI.1.2 Identify the main topic and retell key details of a text.
CCSS.ELA-LITERACY.RI.1.3 Describe the connection between two individuals, events, ideas, or pieces of information in a text.
CCSS.ELA-LITERACY.W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and larger groups.
CCSS.ELA-LITERACY.SL.1.1.A Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
CCSS.ELA-LITERACY.SL.1.1.B Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
CCSS.ELA-LITERACY.SL.1.1.C Ask questions to clear up any confusion about the topics and texts under discussion.
CCSS.ELA-LITERACY.SL.1.2 Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
CCSS.ELA-LITERACY.SL.1.3 Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

21st Century Themes: • Global Awareness

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<table>
<tr><td>Unit 1. Title: Addition and Subtraction Through Twenty</td><td>Time Frame: 14 Weeks</td></tr>
<tr><td colspan="2">Standards:
1.0A.1
1.0A.3
1.0A.4
1.0A.6
1.0A.7
1.0A.8</td></tr>
<tr><td>Enduring Understanding:
Addition and subtraction are used to model real-world situations such as counting on from one day to another, determining an amount needed to earn a reward
Use number lines, number grids, touch math, tens and ones, counters and other manipulative to solve addition and subtraction problems
Addition and subtraction are opposite numerical operations that are used to help quickly find answers to equations.
Identifying key words and phrases in word problems helps to find the operation to solve the problem(e.g. how many are left = subtraction, how many altogether =addition)</td><td>Essential Questions:
What does it mean to add?
What does it mean to subtract?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Move two groups of objects together to make a whole
Find sums up to 10 by adding zero
Use different ways to make 10
Identify whether a math statement is true or false
Take away a part from the whole
Use related addition facts to help find related subtraction facts
Understand that the answer is called the difference and the minus sign represents take away
Use one-to-one correspondence to understand the remaining objects are the difference.
Add three numbers to find the sum
Use a number line to add
Use doubles and near doubles to find the sum</td><td>Demonstration of Learning:
Add or subtract whole numbers within 20 using strategies including making a 10 or decomposing a number leading to a 10. (Model Curriculum UNIT 1 SLO #4)
Timed addition and subtraction fact test up to 12
Create a fact family with three numbers saying or writing two addition and two related subtraction facts</td></tr>
</table>

• Use count back strategy to subtract • Use related facts to find the missing addend • Create a fact family using addition and subtraction relationships • Determine if addition or subtraction equations are true or false • Solve word problems that call for addition of three numbers • Apply properties of operations	
Suggested Tasks and Activities: • My Math Book: Chapters 1-4 • Chapter test- On level assessment • Am I ready? • Vocabulary Activities/Math Word Wall • Problem of the day • Model the math activity found in TE • Real world problem solving readers/corresponding activities (real world problem solving readers teacher guide) • Use counters and part-part whole mat to break numbers into two parts (use pennies) • Check my progress • Use dominoes to add one digit numbers • Match vertical and horizontal addition sentences • Use two colored snap cubes to add numbers (later on use snap cubes to show addition and subtraction relationships) • Use 10 frame and colored counters to add numbers • Doubles Rap on Schooltube • Part-Part Whole mat to finding missing addend • True and False answer cards for students to whole up to check understanding of questions • Online fluency practice -FactDash • Model up to 10 snap cubes, write addition and related subtraction facts for model Use two colored snap cubes make horizontal and vertical subtraction problems.	**Technology Integration/ Resources:** • Snap Cubes, Ten-Frames, Number lines, • Smart board • My Math: Chapters 1-4 • Websites: www. state.nj.us/education/modelcurriculum/math/ • http://mrnussbaum.com/first-grade-math/ • http://softschools.com/ • http://www.math-drills.com/ • http://www.mathplayground.com/ • www.havefunteaching.com

• Make horizontal and vertical subtraction sentences with partners play matching game. • Use snap cubes to show doubles, doubles plus 1 • Use two ten frames to model addition sentences (e.g 7+4 = 10 +1) • Model using two colored counters and changing order of addends to get the same sum (4+5 =9, 5+4=9) • Use snap cubes to model • Use triangle facts to create addition and subtraction sentences • *Double the Ducks* (doubling numbers) by Stuart Murphy • *Mall Mania* (addition strategies) by Stuart Murphy • *Elevator Magic* (Subtracting) by Stuart Murphy • *Shark Swimathon* (Subtracting two digit numbers) by Stuart Murphy	

Content Area: Math	**Grade Level : First**
Unit Title: Place Value / Addition and Subtraction with 2 digit numbers	

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CCSS.ELA-LITERACY.SL.1.3 Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

21st Century Themes: • Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 2 Title: Place Value / Addition and Subtraction with 2 digit numbers</td><td>Time Frame: 7 Weeks</td></tr>
<tr><td colspan="2">Standards:
1.NBT.2a
1.NBT.2b
1.NBT.2c
1.NBT.3
1.NBT.4
1.NBT.5
1.NBT.6</td></tr>
<tr><td>Enduring Understanding:
Comparing and ordering numbers will allow students to know and understand when something is more or less
Skip counting by 2, 5 and 10 assists students in counting quickly. It also allows students to make sense of real world situations
Representations of 100 are made using counters, base ten blocks, ten frames, pictures
A number holds its place value using digits representing certain value (e.g base ten blocks, ten frame)</td><td>Essential Questions:
How can I use place value?
How can I add and subtract two-digit numbers?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
SWBAT bundle some tens and ones
SWBAT understand that 10 ones can regroup to make one ten
SWBAT compare two number or sets of objects or numbers
SWBAT add tens to find the sums
SWBAT count on by ones to find the sum of 22+3
SWBAT add one digit numbers and two-digit number with regrouping
SWBAT subtract multiples of 10 in the range of 10-90</td><td>Demonstration of Learning:
Compare two number cards, Add and subtract 2-digit and a 1-digit number, and a 2-digit number and a multiple of 10</td></tr>
</table>

Suggested Tasks and Activities:	**Technology Integration:**
• My Math Book: Chapter 5 and 6 • Chapter test- On level assessment • Am I ready? • Vocabulary Activities/Math Word Wall • Problem of the day • Model the math activity found in TE • Real world problem solving readers/corresponding activities (real world problem solving readers teacher guide) • Check my progress • Choose a number card, have students create bundle of tens and some left over (14 = 10+4 left over) • Students will model numbers with hundred/ten blocks/dimes • Create two digit numbers with ten blocks and ones & compare • Use Nickels to skip count by 5, dimes for 10 • Create < > with popsicle sticks (alligator eats bigger number) • Use hundreds chart to count on or find what number comes next • Find missing number in patters (16, ___, ___, 19) • Use base 10 blocks to model addition/subtraction sentence in word problems • Create and use number lines to add/subtract • *Earth Day Hooray!* (place value) by Stuart Murphy • *One..Two..Three..Sassafras*! (number order) by Stuart Murphy • *Spunky Monkeys on Parade* (counting by 2s, 3s, 4s) by Stuart Murphy • *Leaping Lizards* (counting by 5's and 10's) by Stuart Murphy • *The Penny Pot* (Counting Coins) By Stuart Murphy	• Smart board • My Math: Chapter 5 &6 • Websites: www. state.nj.us/education/modelcurriculum/math/ • http://mrnussbaum.com/first-grade-math/ • http://softschools.com/ • http://www.math-drills.com/ • http://www.mathplayground.com/ • www.havefunteaching.com **Resources:** • Base 10 blocks • Popsicle Sticks • Nickels • Connect Cubes • Hundreds chart • Number lines

Content Area: Math	**Grade Level : First**
Unit Title: Measurement- Data	

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.RI.1.1 Ask and answer questions about key details in a text.
CCSS.ELA-LITERACY.RI.1.2 Identify the main topic and retell key details of a text.
CCSS.ELA-LITERACY.RI.1.3 Describe the connection between two individuals, events, ideas, or pieces of information in a text.
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<table>
<tr><td>Unit 3. Title: Data</td><td>Time Frame: 2 Weeks</td></tr>
<tr><td colspan="2">Standard:
1.MD.4</td></tr>
<tr><td>Enduring Understanding:

• People use graphs and charts to communicate information and learn about a class or community, such as favorite color of a class
• Multiple questions can be answered by using different data representations</td><td>Essential Questions:
• How do graphs help us organize data?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
• Use tally marks/pictures/bar lines to show information in a chart or graph
• Organize, represent, and interpret data</td><td>Demonstration of Learning

• Create two types of graphs using the same information provided (Example: Hand full of cubes, pattern blocks)</td></tr>
<tr><td>Suggested Tasks and Activities:
• My Math Book: Chapter 7
• Chapter test- On level assessment
• Vocabulary Activities/Math Word Wall
• Problem of the day
• Model the math activity found in TE
• Real world problem solving readers/corresponding activities (real world problem solving readers teacher guide
• Listen to Peter Piper Picked a Peck of Pickled Peppers making a tally mark each time a p sound is said
• Create and read a whole class tally chart (e.g 2 choices- favorite snack)
• Create and read whole class bar graph (e.g 3 choices-favorite sandwich)
• Create and read a whole class picture graph(e.g 2-3 choices-weather)
• Roll Dice 20 times. Create tally table
• Tally O'Mally (Tallying) by Stuart Murphy
• Lemonade for Sale (Bar Graphs) by Stuart Murphy</td><td>Technology Integration / Resources:
• My Math: Chapter 7
• Smart board
Websites:
• www. state.nj.us/education/modelcurriculum/math/
• http://mrnussbaum.com/first-grade-math/
• http://softschools.com/
• http://www.math-drills.com/
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Content Area: Math	**Grade Level : First**
Unit Title: Measurement - Time	

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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

Unit 4. Title: Measurement / Time	Time Frame: 3 Weeks
Standard and Cumulative Progress Indicators: 1.MD.1 1.MD.2 1.MD.3	
Enduring Understanding: • Measurement helps us to understand and describe the world such as how tall someone is and how much of something you need • Telling and writing time helps students understand when things happen and elapsed time	**Essential Questions:** • How do I determine length and time?
Knowledge and Skills: Students will… • Compare objects by length form longest to shortest • Measure an object using nonstandard units • Use an analog clock to tell time to the hour and half hour • Use a digital clock to read and tell time	**Demonstration of Learning** • Students will listen to a word problem and model time to the hour and half hour, representing elapsed time. (eg. Jane went to the store at 3:00, she was there for a half hour, what time was she done? Students model 3:00 and 3:30)
Suggested Tasks and Activities: • My Math Book: Chapter 8 • Chapter test- On level assessment • Am I ready?/ Problem of the Day • Vocabulary Activities/Math Word Wall • Model the math activity found in TE • Real world problem solving readers/corresponding activities (real world problem solving readers teacher guide) • Check my progress • Talk about examples of measurement in real life • Compare objects in classroom (which is longer) • Order a set of objects from shortest to longest • Measure the same objects using different nonstandard units (cubes,paperclips) • Make a schedule related to real life/ Make a clock • Do something for one minute to see length of time • Explore the differences in analog and digital clocks • Roll two dice, add the sums and show that time on the clock (4+3= 7, 7:-00- repeat for :30) • Create index cards with numbers, model :00 and :30 on small analog clocks) • Create riddles (My hour hand is between 9 and 10. My minute hand is on the 6. What time am I?) • *It's About Time* (Hours) by Stuart Murphy	**Technology Integration /Resources:** • Snap Cubes, Dice, Clocks, Paper Clips • Smart board • My Math: Chapter 8 • Websites: www. state.nj.us/education/modelcurriculum/math/ • http://mrnussbaum.com/first-grade-math/ • http://softschools.com/ • http://www.math-drills.com/ • http://www.mathplayground.com/ • www.havefunteaching.com

Content Area: Math	**Grade Level : First**
Unit Title: Geometry	

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<table>
<tr><td>Unit 5. Title: Geometry</td><td>Time Frame: 6 Weeks</td></tr>
<tr><td colspan="2">Standard:
1.G.1
1.G.2
1.G.3</td></tr>
<tr><td>Enduring Understanding:
Many objects in our world can be described as geometric shapes and relationships
Solid figures are used to build our world
Two-dimensional shapes are objects such as square, trapezoid, triangle, circle, and rectangle are found in our real world</td><td>Essential Questions:
How can I recognize two-dimensional shapes?
How can I identify three-dimensional shapes?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
SWBAT use defining attributes to determine the correct shape
SWBAT use pattern blocks together to make a composite shapes
SWBAT divide two-dimensional shapes equally into halves and fourths
SWBAT use defining attributes to identify a cube, rectangular prism, cylinder, and cone
SWBAT use three-dimensional shapes to make a composite shape</td><td>Demonstration of Learning
Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, parallelograms) to create a house
Partition or fold circles and rectangles into two or four equal shares, describing the shares using halves, fourths, and, quarters.</td></tr>
<tr><td>Suggested Tasks and Activities:
My Math Book: Chapter 9 and 10
Chapter test- On level assessment
Am I ready?/ Check My Progress / Problem of the Day
Vocabulary Activities/Math Word Wall
Real world problem solving readers/corresponding activities
Model and draw two-dimensional shapes
Identify, name, and describe two-dimensional shapes /three-dimensional shapes by holding up pictures and models and playing guessing games.
Scavenger hunt to find shapes
Use pattern blocks to create new shapes and pictures
Guess my three-dimensional objects by describing it attributes in partners or groups (e.g my object has 1 face and 1 vertex, what is it?)
Use three-dimensional shapes to create a composite shape, write down what shapes you used
Use pre-cut circles, squares, and rectangles, have students cut halves and fourths
Create a paper pizza- divide into equal parts</td><td>Technology Integration / Resources:
Model Shapes, Pattern Blocks,
Smart board
My Math: Chapters 9 & 10
Websites: www. state.nj.us/education/modelcurriculum/math/
http://mrnussbaum.com/first-grade-math/
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</table>

Pacing Guide	
Content Area: Mathematics	
Grade Level: Second	
Unit 1: Addition and Subtraction Concepts, Two-Digit Numbers	**September –December**
Unit 2: Place Value	**December**
Unit 3: Addition and Subtraction of 3-digit numbers	**January - February**
Unit 4: Money	**February**
Unit 5: Multiplication and Division Readiness	**March**
Unit 6: Linear Measurement & Time	**March- April**
Unit 7: Data Analysis	**May**
Unit 8: Geometry	**June**

Content Area: Mathematics	**Grade Level : Second**

Unit Title: Addition and Subtraction Concepts, Two-Digit Numbers

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.1.A Follow agreed-upon rules for discussions.

CCSS.ELA-LITERACY.SL.2.1.B Build on others' talk in conversations by linking their comments to the remarks of others.

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<table>
<tr><td>Unit 1. Title: Addition and Subtraction Concepts, Two-Digit Numbers</td><td>Time Frame: 10 weeks</td></tr>
<tr><td colspan="2">Standards:
2.NBT.5,
2.NBT.6
2.0A.2
2.NBT.7
2.NBT.8
2.NBT.9
2.0A.1</td></tr>
<tr><td>Enduring Understanding:
The significance of numbers affects the outcome of operations on them
The totals on each side of an equal sign equal each other, similar to that of a balance scale.
Real-life situations regarding the increase or decrease of numbers/objects can be applied to addition and subtraction.
Flexible methods of computation involve grouping number in strategic ways. Mental math strategies can be used to solve problems involving numbers.</td><td>Essential Questions:
How do you use addition and subtraction to solve real world problems?
How can memorizing the basic addition and subtraction facts help me?
What are efficient methods for finding sums and differences?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Fluently add and subtract basic facts
Fluently add and subtract within 100
Add and subtract multiples of 10
Compose and decompose numbers
Use mental arithmetic
Use algorithms to add and subtract
Use and explain strategies based on the relationship between addition and subtraction
Use and explain strategies based on place value and properties of operations
Skip count</td><td>Demonstration of Learning:
Using connecting cubes, TSW solve number sentences using addition and subtraction
Using number cards and white boards, TSW work with a partner to draw two cards and create an addition sentence. The partner will switch the order of the addends to write another sentence. Also, TSW write two related subtraction facts.</td></tr>
<tr><td>Suggested Tasks and Activities:
My Math Chapters 1,3,4
Real World problem solving readers/corresponding activities</td><td>Technology Integration:
http://mrnussbaum.com
http://illuminations.nctm.org/
http://www.mathisfun.com/
http://www.softschools.com/</td></tr>
<tr><td colspan="2">Resources: snap cubes, ten frames, white boards, deck of cards</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Second**

Unit Title: Place Value

Interdisciplinary Connections: English Language Arts:

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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 2. Title: Place Value</td><td>Time Frame: 2 weeks</td></tr>
<tr><td colspan="2">Standards:
2.NBT.1
2.NBT.2
2.NBT.3
2.NBT.4
2.NBT.5
2.NBT.6
2.NBT.7
2.NBT.9</td></tr>
<tr><td>Enduring Understanding:
The overall value of a number is determined by its location within a number.
Two and three digit numbers can be compared based on the meaning of the hundreds, tens, and ones digits using the <,>,and = symbols to record the results of the comparisons.</td><td>Essential Questions:
How can I use place value?
How does the position of a digit in a number affect its value?
How can we compare and contrast numbers?</td></tr>
<tr><td>Demonstration of Learning
Using base ten blocks, TSW show numbers between 0-1,000 in word form, and expanded form.
Give each student two post-it’s each. They should write a three-digit number onto each one. Next, the student will place the numbers on either side of the correct symbol.</td><td>Knowledge and Skills:
Students will…
Understand foundations of and generalize about place value
Extend counting sequence and read and write whole numbers
Compare/order numbers</td></tr>
<tr><td>Suggested Tasks and Activities
My Math Chapter 5
Real World problem solving readers/corresponding activities</td><td>Technology Integration:
http://mrnussbaum.com
http://illuminations.nctm.org/
http://www.mathisfun.com/
http://www.softschools.com/</td></tr>
<tr><td colspan="2">Resources: base ten blocks</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Second**

Unit Title: Addition and Subtraction of 3-digit numbers

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.1.A Follow agreed-upon rules for discussions.

CCSS.ELA-LITERACY.SL.2.1.B Build on others' talk in conversations by linking their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.2.1.C Ask for clarification and further explanation as needed about the topics and texts under discussion.

CCSS.ELA-LITERACY.SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.SL.2.3 Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 3. Title: Addition and Subtraction of 3-digit numbers</td><td>Time Frame: 5 weeks</td></tr>
<tr><td colspan="2">Standards:
2.NBT.7
2.NBT.8</td></tr>
<tr><td>Enduring Understanding:
The significance of number affects the outcome of operations on them.
Real-life situations regarding the increase or decrease of number/objects can be applied to addition and subtraction.
Knowledge of addition and subtraction fact makes the computation of larger numbers easier to solve.
Flexible methods of computation involve grouping numbers in strategic ways. Mental math strategies can be used to solve problems involving number.</td><td>Essential Questions:
Do you add a two digit number differently than you would a three digit number?
How can I add and subtract a three digit number?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Regroup tens to add three-digit numbers
Add three-digit numbers with regrouping
Rewrite horizontal addition problems vertically before adding
Use the guess, check and revise strategy</td><td>Demonstration of Learning:
Use white boards, TSW solve the word problem given by writing an equation. Based on the language given TSW determine whether it’s addition or subtraction
Write a three-digit number sentence on the board. TSW use base-ten blocks and work mat 7 to model each number and find the sums.</td></tr>
<tr><td>Suggested Tasks and Activities
My Math chapters 6 and 7
Real World problem solving readers/corresponding activities
Daily Timed Tests</td><td>Technology Integration:
http://mrnussbaum.com
http://illuminations.nctm.org/
http://www.mathisfun.com/
http://www.softschools.com/</td></tr>
<tr><td colspan="2">Resources: base ten blocks, white boards</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Second**

Unit Title: Money

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.1.A Follow agreed-upon rules for discussions.

CCSS.ELA-LITERACY.SL.2.1.B Build on others' talk in conversations by linking their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.2.1.C Ask for clarification and further explanation as needed about the topics and texts under discussion.

CCSS.ELA-LITERACY.SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.SL.2.3 Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
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    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
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    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
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    - **Manage Projects**
    - **Produce Results**
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    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 4. Title: Money</td><td>Time Frame: 2 weeks</td></tr>
<tr><td colspan="2">Standards:
2.MD.8</td></tr>
<tr><td>Enduring Understanding:
Currency amounts can be grouped and exchanged to solve problems.
Coins have different values.
Money is part of everyday life</td><td>Essential Questions:
Why is it important to understand the value of coins?
How are the different coins related to each other?
What strategies would make it easier to count the total value of coins?
Why do we have different coins in our money system?
How do I count and use money?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Recognize and count using coins
Sort and compare using coins and bills
Solve word problems involving money</td><td>Demonstration Of Learning:
TSW use coins to find an amount given
TSW use coins and bills to find an amount given
TSW use a circular and spend a given amount to “purchase” items</td></tr>
<tr><td>Suggested Tasks and Activities
* My Math chapter 8
*Real World problem solving readers/corresponding activities</td><td>Technology Integration:
http://mrnussbaum.com
http://illuminations.nctm.org/
http://www.mathisfun.com/
http://www.softschools.com/</td></tr>
<tr><td colspan="2">Resources: coins, bills, store circular</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Second**

Unit Title: Multiplication and Division Readiness/ Number Patterns

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.1.A Follow agreed-upon rules for discussions.

CCSS.ELA-LITERACY.SL.2.1.B Build on others' talk in conversations by linking their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.2.1.C Ask for clarification and further explanation as needed about the topics and texts under discussion.

CCSS.ELA-LITERACY.SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.SL.2.3 Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 5. Title: Multiplication and Division Readiness/ Number Patterns</td><td>Time Frame: 2 weeks</td></tr>
<tr><td colspan="2">Standards:
2.0A.3
2.0A.4
2.NBT.2</td></tr>
<tr><td>Enduring Understanding:
Multiplication is repeated addition.
Division is repeated subtraction.
Arrays can be used to depict multiplication.</td><td>Essential Questions:
How can equal groups help me add?
How can an array be used to help write a multiplication sentence?
How is multiplication related to addition?
How is division related to subtraction?
How are multiplication and division related?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Use odd and even numbers and arrays to gain foundations for multiplication
Relate addition to multiplication</td><td>Demonstration of Learning
TSW use 12 cubes to create various number of arrays and write the appropriate addition expression
TSW work with chart on p. 149A of teachers edition, TSW use cubes to find equal addends and fill in the equal addends</td></tr>
<tr><td>Suggested Tasks and Activities
My Math Chapter 2
Real World problem solving readers/corresponding activities</td><td>Technology Integration:
http://mrnussbaum.com
http://illuminations.nctm.org/
http://www.mathisfun.com/
http://www.softschools.com/</td></tr>
<tr><td colspan="2">Resources: connecting cubes</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Second**
Unit Title: Linear Measurement & Time	

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.1.A Follow agreed-upon rules for discussions.

CCSS.ELA-LITERACY.SL.2.1.B Build on others' talk in conversations by linking their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.2.1.C Ask for clarification and further explanation as needed about the topics and texts under discussion.

CCSS.ELA-LITERACY.SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.SL.2.3 Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
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    - **Solve Problems**
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    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
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- **Life and Career Skills**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 6. Title: Linear Measurement & Time</td><td>Time Frame: 5 weeks</td></tr>
<tr><td colspan="2">Standards:
2.MD.1
2.MD.2
2.MD.3
2.MD.4
2.MD.6
2.MD.7
2.MD.9</td></tr>
<tr><td>Enduring Understanding:
Time is used to sequence daily events.
Time can be measured using an analog or digital clock
Different units of time are used to measure different events
Different measuring tools are used to measure objects of various lengths in both standard and metric system.
Objects have distinct attributes that can be measured
Objects can be compared and ordered by length</td><td>Essential Questions:
How do I use and tell time?
What are tools for measuring time?
How can I measure objects?
What strategies are help to estimate the measure of an object?
How is a number line similar to a ruler?
What types of problems are solved with measurement?
When is an estimate more appropriate than an actual measure of object?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Measure length using appropriate tools
Use customary units of length to estimate, measure, and compare
Use addition and subtraction to solve word problems of length
Tell and write time to the hour and half hour
Tell and write time to the quarter hour and 5-minute intervals</td><td>Demonstration of Learning:
TSW use rulers to measure various items throughout the classroom
TSW use mini student clocks to show correct hour and minute of given time</td></tr>
<tr><td>Suggested Tasks and Activities
My Math chapter 10 and 11
Real World problem solving readers/corresponding activities</td><td>Technology Integration:
http://mrnussbaum.com
http://illuminations.nctm.org/
http://www.mathisfun.com/
http://www.softschools.com/</td></tr>
<tr><td colspan="2">Resources: rulers, items in classroom, mini student clocks</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Second**
Unit Title: Data Analysis	

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.1.A Follow agreed-upon rules for discussions.

CCSS.ELA-LITERACY.SL.2.1.B Build on others' talk in conversations by linking their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.2.1.C Ask for clarification and further explanation as needed about the topics and texts under discussion.

CCSS.ELA-LITERACY.SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.SL.2.3 Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
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    - **Adapt to Change**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 7. Title: Data Analysis</td><td>Time Frame: 2 weeks</td></tr>
<tr><td colspan="2">Standards:
2.MD.9
2.MD.10</td></tr>
<tr><td>Enduring Understanding:
Data displays organize information that can be easily analyzed and explained
Different data displays are used to communicate different information
We collect and use data to help us answer questions and make decisions.
Graphs communicate data concisely</td><td>Essential Questions:
How can I record and analyze data?
How can you collect, organize and display data?
How is a line plot used?
What is a graph?
What questions should you ask to get the information you need?</td></tr>
<tr><td>Demonstration Of Learning:
TSW create two types of graphs using the same information. Provide students with a prepared question. TSW survey 10 classmates to obtain data and use to prepare their graphs</td><td>Knowledge and Skills:
Students will…
Organize, represent, and interpret data
Generate data in whole units of linear measurement
Draw picture graphs and bar graphs
Solve problems involving bar graph analysis
Make line pots using generated linear measurement data</td></tr>
<tr><td>Suggested Tasks and Activities
My Math chapter 9
Real World problem solving readers/corresponding activities</td><td>Technology Integration:
http://mrnussbaum.com
http://illuminations.nctm.org/
http://www.mathisfun.com/
http://www.softschools.com/</td></tr>
<tr><td colspan="2">Resources: prepared question, graphing paper</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Second**

Unit Title: Geometry

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.1.A Follow agreed-upon rules for discussions.

CCSS.ELA-LITERACY.SL.2.1.B Build on others' talk in conversations by linking their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.2.1.C Ask for clarification and further explanation as needed about the topics and texts under discussion.

CCSS.ELA-LITERACY.SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.SL.2.3 Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
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    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 8. Title: Geometry</td><td>Time Frame: 2 weeks</td></tr>
<tr><td colspan="2">Standards:
2.G.2
2.G.3
2.G.1</td></tr>
<tr><td>Enduring Understanding:
Geometric shapes can be classified by attributes
Objects can be described and compared using geometric attributes.
Geometry is part of daily life
Fractions represent equal parts of the whole</td><td>Essential Questions:
What are ways shapes can be sorted?
What attributes are used to classify solid figures?
How are plane shapes different from solid shapes?
What is a fraction?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Decompose two-dimensional shapes
Analyze and compare two-dimensional shapes
Model, build, and draw two-dimensional shapes
Identify, name, and describe two-dimensional shapes
Partition two-dimensional shapes into equal shares/areas
Identify equal shares of two-dimensional shapes
Identify, name, and describe three-dimensional shapes
Analyze and compare three-dimensional shapes</td><td>Demonstration Of Learning:
Given a solid figure, TSW state number of edges, vertices, faces
TSW partition or fold circles or rectangles into two or four equal shares, describing the shares using halves, thirds and fourths</td></tr>
<tr><td>Suggested Tasks and Activities
My Math chapter 12
Real World problem solving readers/corresponding activities</td><td>Technology Integration:
http://mrnussbaum.com
http://illuminations.nctm.org/
http://www.mathisfun.com/
http://www.softschools.com/</td></tr>
<tr><td colspan="2">Resources: solid figure blocks, foldable shapes</td></tr>
</table>

Pacing Guide	
Content Area: Mathematics	
Grade Level: Third	
Unit 1: Place Value	**September- October**
Unit 2: Addition and Subtraction	**November**
Unit 3: Multiplication and Division	**December- January**
Unit 4: Algebraic Representation	**February**
Unit 5: Fractions	**March - April**
Unit 6: Algebraic Representation	**April**
Unit 7: Data Analysis	**May**
Unit 8: Geometry	**June**

Content Area: Mathematics	**Grade Level : Third**
Unit Title: Place Value	

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.3.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
CCSS.ELA-LITERACY.SL.3.1.B Follow agreed-upon rules for discussions
CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
CCSS.ELA-LITERACY.SL.3.1.D Explain their own ideas and understanding in light of the discussion.
CCSS.ELA-LITERACY.SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
CCSS.ELA-LITERACY.SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
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  - **Critical Thinking and Problem Solving**
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    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 1. Title: Place Value</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
3.NBT.1
3.NBT.2
3.NBT.3</td></tr>
<tr><td>Enduring Understanding:
Numbers are able to represent quantity, position, location, and relationships, as symbols may be used to express these relationships.</td><td>Essential Questions:
• How can numbers be expressed, ordered, and compared?
• How does the position of a digit in a number affect its value?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Understand foundations of and generalize about place value
Extend counting sequence and read and write whole numbers
Compare/order numbers</td><td>Demonstration of Learning
Students to use the distances between different US cities (chart provided-cross curricular Social Studies) and do the following:
Order the distances from least to greatest; place the 4-digit distances on a number line, write the word form of each distance; compare 2 sets of the distances using <,>,=
Using digit cards (see suggested tasks & activities)
Write a three-digit number on the board. Ex. 367
Using the digit cards, have students round the given number to the nearest ten. Now have the students round the given number to the nearest hundred.
Write a three-digit number on the board ending in zero. Ex. 460
Using the digit cards, have the student create a number that would be rounded to the given number when rounding to the nearest ten. Have students explain their reasoning.
Write a three-digit number on the board ending in 00. Ex. 700
Using the digit cards, have the students create a number that would be rounded the given number when rounding to the nearest hundred. Have students explain their reasoning. Repeat as needed.</td></tr>
<tr><td>Suggested Tasks and Activities
Ch. 1 Math at Home letters (McGraw Hill: My Math Gr. 3-print from on-line)
Complete Am I Ready (McGraw Hill: My Math Gr. 3 Ch. 1)
Problem of the Day; Common Core Quick Check (McGraw Hill: My Math Gr. 3 Ch. 1)</td><td>Technology Integration/ Resources:
www.connectED.mcgraw-hill.com
Smart board
Base ten blocks
paper
Thousands Place-Value Chart (Work Mat 1 McGraw Hill Gr. 3)</td></tr>
</table>

• Watch video (McGraw Hill: My Math Gr. 3 Ch. 1 Place Value) • Review vocabulary *hundreds, is equal to (=), is greater than (>), is less than (<), ones, tens* (My Math Words p. 128 • Intro new vocabulary *digit, expanded form, place value, round, standard form, word form* • Create foldable for use in using place value to round (McGraw Hill: My Math Gr. 3 Ch. 1 Place Value) • Create two-sided cards digits 0-9 with 0 on back of each digit card for use throughout the unit • Choose digit cards; practice creating numbers, naming the numbers using words, and having students place the numbers correctly in a place value chart including proper placement of comma for 'periods.' • Practice choosing digit cards and place created numbers on a number line (for comparison-greater than/less than) • Connect to real world problem solving (McGraw Hill: My Math Gr 3 Pages 1-2) • On-level chapter tests and quizzes	• Number Lines (Work Mat 2 McGraw Hill Gr. 3) • https://grade3commoncoremath.wikispaces.hcpss.org • https://smart.wikispaces.hcpss.org/Grade+3 • www.edhelper.com • www.ixl.com • www.multiplication.com • www.internet4classrooms.com • www.mathplayground.com • www.adaptedmind.com • www.softschools.com • www.KhanAcademy.com • www.teachertube.com • www.Superteacherworksheets.com • www.enchantedlearning.com • www.teacherpayteachers.com • www.xtratmath.org • www.sumdog.com • www.smartexchange.com • www.teacherled.com

Content Area: Mathematics	**Grade Level : Third**
Unit Title: Addition and Subtraction	

Interdisciplinary Connections: <u>English Language Arts:</u>

CCSS.ELA-LITERACY.SL.3.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.3.1.B Follow agreed-upon rules for discussions

CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.3.1.D Explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **<u>Learning and Innovation Skills</u>**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **<u>Information, Media and Technology Skills</u>**
  - **Information Literacy**
    - **Access and Evaluate Information**
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    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 2. Title: Addition and Subtraction</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
3.NBT.2
3.0A.8
3.NBT.3</td></tr>
<tr><td>Enduring Understanding:
Fluency in addition & subtraction facts help with proficiency
Mathematical real world situations require people with proficiency to apply skills of addition & subtraction to formulate answers to problems
Estimation is an important concept for real-life in making quick, accurate decisions; estimation in math helps students reason and make sense of quantities.</td><td>Essential Questions:
How can place value help me add larger numbers?
How are the operations of subtraction and addition related?
How can we use mental math to rationalize if an answer is correct?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Fluently add and subtract multi-digit numbers
Compose and decompose numbers
Use mental arithmetic
Use estimation
Use algorithms to add and subtract
Use and explain strategies based on the relationship between addition and subtraction
Use and explain strategies based on place value and properties of operations</td><td>Demonstration of Learning:
NOTE: Need to add element of estimating and subtraction to the following:
The class is to plan an pretend bake sale, deciding which items they would like to bake and sell, how many of each item to make, and how much to charge for each item.
Assign groups of students. Each group decides on one item they will bake and how many units of that item they will have for sale.
Students to decide on prices for their items. Each group adds to find the total price for all units of their baked item.
Put totals of each group on the board. Have each individual student add the totals to arrive at a sum for the entire class.
Ask students to write a number on their paper, e.g. “write seven hundred eighty-nine on your paper”. Have students show their paper to ensure that they have written the number correctly.
Provide students with the directions to change one digit in the number to make a new number. Write the new number below the original number.
After they have been given time to create a new number, have them flash their paper.
Have students share with the class or with a partner using their understanding of place value whether they added or subtracted to create</td></tr>
</table>

	a new number, (for example, if they changed 789 to 989 they changed the digit in the hundred's place value by adding 200 to the number)
Suggested Tasks and Activities • Ch. 2, 3 Math at Home letters (McGraw Hill: My Math Gr. 3-print from on-line) • Complete Am I Ready (McGraw Hill: My Math Gr. 3 Ch. 2, 3) • Problem of the Day; Common Core Quick Check (McGraw Hill: My Math Gr. 3 Ch. 2-3) • Watch video (McGraw Hill: My Math Gr. 3 Ch. 2 Addition; Ch. 3 Subtraction) • Review vocabulary *addend, addition sentence, sum, add, difference, equals sign (=), minus sign (-), subtract, sum, addend, equal, estimate, plus sign (+), subtraction sentence* • Intro new vocabulary *associative property of addition, bar diagram, commutative property of addition, estimate, identity property of addition, mental math, parentheses, pattern, reasonable, regroup, unknown, inverse operations, regroup* • Create foldable for practice in number sense with the operation of addition to help with fluency in ability and performing mental math (McGraw Hill: My Math Gr. 3 Ch. 2 Addition) • Create foldable for review of subtraction of 3- and 4- digit numbers to reinforce subtraction concepts. (McGraw Hill: My Math Gr. 3 Ch. 3 Subtraction) • Write, for example, 3 + 5 on the board. Using colored cubes to represent each digit, connect and have students determine sum. Add a third digit and repeat (i.e. 3 + 5 + 4) • Connect addition to real-world problem solving (McGraw Hill: My Math Gr. 3 TE page 4-5) • Use base ten blocks to model addition and/or subtraction of larger numbers. • On-level chapter tests and quizzes	**Technology Integration/ Resources:** • www.connectED.mcgraw-hill.com • SmartBoard • Hundreds chart • Base ten blocks • Colored connecting cubes • Grid Paper (for students to help line up numbers)/Work Mat 5 McGraw Hill: My Math Gr. 3 • Paper • Work Mat 2 or number lines (McGraw Hill Gr. 3) • counters • https://grade3commoncoremath.wikispaces.hcpss.org • https://smart.wikispaces.hcpss.org/Grade+3 • www.edhelper.com • www.ixl.com • www.multiplication.com • www.internet4classrooms.com • www.mathplayground.com • www.adaptedmind.com • www.softschools.com • www.KhanAcademy.com • www.teachertube.com • www.Superteacherworksheets.com • www.enchantedlearning.com • www.teacherpayteachers.com • www.xtratmath.org • www.sumdog.com • www.smartexchange.com • www.teacherled.com

Content Area: Mathematics	**Grade Level : Third**
Unit Title: Multiplication and Division	

Interdisciplinary Connections: <u>English Language Arts:</u>

CCSS.ELA-LITERACY.SL.3.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.3.1.B Follow agreed-upon rules for discussions

CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.3.1.D Explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **<u>Learning and Innovation Skills</u>**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
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    - **Communicate Clearly**
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    - **Apply Technology Effectively**
- **<u>Information, Media and Technology Skills</u>**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **<u>Life and Career Skills</u>**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td colspan="2">Unit 3. Title: Multiplication and Division</td><td>Time Frame:</td></tr>
<tr><td colspan="3">Standards:
3.0A.2
3.0A.3
3.0A.7
3.NBT.3
3.0A.4
3.0A.6
3.0A.5
3.0A.9</td></tr>
<tr><td colspan="2">Enduring Understanding:
Multiplication and division are inverse operations
A multiplication product can be obtained from combining several groups of the same size.
The result of division can be obtained from subtracting equal groups from the original amount and/or separating objects into equal, smaller groups.
Fluency with multiplication & division facts enables the student to solve higher-level multiplication & division problems.</td><td>Essential Questions:
What does multiplication mean?
What does division mean?
How are multiplication & addition related?
How are division & subtraction related?
What is the importance of patterns in learning multiplication and division?
What strategies can be used to learn multiplication and division facts?
How can multiplication and division facts with smaller numbers be applied to larger numbers?</td></tr>
<tr><td colspan="2">Knowledge and Skills:
Students will…
Use odd and even numbers and arrays to gain foundations for multiplication
Fluently multiply and divide basic factors
Compose and decompose numbers
Use and explain strategies based on the relationship between multiplication and division
Use and explain strategies based on place value
Use multiplication to find combinations
Apply distributive property
Use the commutative property of multiplication to solve problems.
Solve word and real-life problems by writing number sentences using multiplication & division
Find the number of combinations that are possible in real-life situations.</td><td>Demonstration of Learning
1. Students to choose a multiplication sentence and related division sentence, then arrange (cubes, plastic cups, chips, etc.) into an array.
1. Place multiplication sentences on strips of paper into a (bag, bin, container, etc.).
2. Arrange students into groups. One representative from each group to choose one strip.
3. Students to create an array to match their number sentences using the (cubes, cups, etc.). Students to also provide the related division sentence.
4. Each student to “tour” arrays and write multiplication/division sentences to match each group’s array.</td></tr>
</table>

Suggested Tasks and Activities:	**Technology Integration/ Resources:**
• Ch. 4-9 Math at Home letters (McGraw Hill: My Math Gr. 3-print from on-line) • Complete Am I Ready (McGraw Hill: My Math Gr. 3 Ch. 4-9) • Problem of the Day; Common Core Quick Check (McGraw Hill: My Math Gr. 3 Ch. 4-9) • Watch video (McGraw Hill: My Math Gr. 3 Ch. 4 Understanding Multiplication; Ch. 5 Understanding Division; Ch. 6 Multiplication & Division Patterns; Ch. 7 Multiplication & Division; Ch. 8 Apply Multiplication & Division, Ch. 9 Properties and Equations) • Review vocabulary *number sentence, repeated addition, sum (Ch. 4); array, equal groups, pattern, repeated addition (Ch.5) bar diagram, partition, factor, product (Ch. 6);dividend, divisor, inverse operations, quotient (Ch. 7); factors, known fact, pattern, product(Ch. 8);array, decompose, =equal sign, known fact, unknown (Ch. 9)* • Introduce vocabulary *array, combination, Commutative Property of Multiplication, equal groups, factor, multiplication sentence, multiply (multiplication), product, multiple, decompose, known fact, Identity Property of Multiplication, Zero Property of Multiplication; Associative Property of Multiplication, Distributive Property, equation, evaluate, expression, operations, variable* • Intro new vocabulary *divide (division), dividend, division sentence, divisor, fact family, inverse operations, partition, quotient* • Create foldable for demonstration on how to find all the combinations of sets, and reinforce how to use multiplication to find the total number of combinations. (McGraw Hill: My Math Gr. 3 Ch. 4 Understand Multiplication) • Create foldable for practice in identifying the key vocabulary used in division (McGraw Hill: My Math Gr. 3 Ch. 5 Understand Division) • Create foldable for practice and concept reinforcement tool for the multiplication and division facts of 2. (McGraw Hill: My Math Gr. 3 Ch. 6 Multiplication & Division Patterns) • Create foldable to illustrate three strategies students can use to divide. (McGraw Hill: My Math Gr. 3 Ch. 7 Multiplication & Division) • Create foldable to illustrate the pattern of the 9s multiplication facts (McGraw Hill: My Math Gr. 3 Ch. 8 Apply Multiplication & Division) • Create foldable as a reinforcement and/or review tool of the properties of multiplication (McGraw Hill: My Math Gr. 3 Ch. 9 Properties and Equations) • Connect addition to real-world problem solving (McGraw Hill: My Math Gr. 3 TE page 3, 6-7)	• www.connectED.mcgraw-hill.com • SmartBoard • Fact chart (Work Mat 7 McGraw Hill: My Math Gr. 3) • Number Cubes • Color Tiles • Grid paper (for lining up numbers) • Nickels • Counters • Number Lines (Work Mat 2 McGraw Hill Gr. 3) • Play money, counters • Plastic cups • https://grade3commoncoremath.wikispaces.hcpss.org • https://smart.wikispaces.hcpss.org/Grade+3 • www.edhelper.com • www.ixl.com • www.multiplication.com • www.internet4classrooms.com • www.mathplayground.com • www.adaptedmind.com • www.softschools.com • www.KhanAcademy.com • www.teachertube.com • www.Superteacherworksheets.com • www.enchantedlearning.com • www.teacherpayteachers.com • www.xtratmath.org • www.sumdog.com • www.smartexchange.com • www.teacherled.com

Content Area: Mathematics	**Grade Level : Third**
Unit Title: Algebraic Representation	

Interdisciplinary Connections: English Language Arts:

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CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
CCSS.ELA-LITERACY.SL.3.1.D Explain their own ideas and understanding in light of the discussion.
CCSS.ELA-LITERACY.SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
CCSS.ELA-LITERACY.SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 4. Title: Algebraic Representation</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
3.0A.5
3.0A.7
3.0A.9
3.NBT.3
3.0A.8
3.0A.4
3.0A.6
3.0A.3</td></tr>
<tr><td>Enduring Understanding:
1. Multiplication facts can be deduced from patterns.
2. Multiplication & division have an inverse relationship.
3. Patterns are present everywhere in the real world & should be analyzed to help us form a concrete understanding.
4. Variables stand for unknowns in real world & mathematical problems.
5. Given a situation with an unknown, an expression can be written by using a variable to solve for the unknown value.</td><td>Essential Questions:
6. How are properties and equations used to group numbers?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
• Identify/Generate/Explain patterns
• Solve addition and subtraction word problems
• Assess the reasonableness of answers by rounding and estimating
• Determine the unknown/variable
• Write and solve number sentences/equations
• Order of operations
• Write and solve multiplication and division word problems
• Write and evaluate numerical expressions
• Write and evaluate expressions involving variables
• Apply properties of operations</td><td>Demonstration of Learning
• Students to be presented with a number sentence-one of each (addition, subtraction, multiplication, division) containing an unknown
• Each student must create a word problem that may be solved using the given number sentence.
• Students then must solve for the unknown variable.</td></tr>
</table>

Suggested Tasks and Activities	Technology Integration/ Resources:
• Note: standards and activities addressed in previous topics • Ch. Math at Home letters (McGraw Hill: My Math Gr. 3-print from on-line) • Connect addition to real-world problem solving (McGraw Hill: My Math Gr. 3 TE page 3) • On level chapter quizzes/tests	1. www.connectED.mcgraw-hill.com 2. Smartboard • Bar diagram (Work Mat 6 McGraw Hill: My Math Gr. 3) • Algebra Mat (Work Mat 8 McGraw Hill: My Math Gr. 3) • https://grade3commoncoremath.wikispaces.hcpss.org • https://smart.wikispaces.hcpss.org/Grade+3 • www.edhelper.com • www.ixl.com • www.multiplication.com • www.internet4classrooms.com • www.mathplayground.com • www.adaptedmind.com • www.softschools.com • www.KhanAcademy.com • www.teachertube.com • www.Superteacherworksheets.com • www.enchantedlearning.com • www.teacherpayteachers.com • www.xtratmath.org • www.sumdog.com • www.smartexchange.com • www.teacherled.com

Content Area: Mathematics	**Grade Level : Third**
Unit Title: Fractions	

Interdisciplinary Connections: <u>English Language Arts:</u>

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CCSS.ELA-LITERACY.SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **<u>Learning and Innovation Skills</u>**
  - **Creativity and Innovation**
    - **Think critically**
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  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
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    - **Apply Technology Effectively**
- **<u>Information, Media and Technology Skills</u>**
  - **Information Literacy**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 5. Title: Fractions</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
3.NF.1
3.NF.3c
3.NF.2
3.NF.3a,
3.NF.3b
3.G.2
3.NF.3d
3.NBT.3</td></tr>
<tr><td>Enduring Understanding:
Fractions represent equal parts of the whole.
Understand the size of a fractional part is related to the size of the whole.
The greater number of equal pieces in the whole, the smaller the pieces will be.
A region can be divided into equal sized parts in different ways.
The same function can be represented by an infinite set of different but equivalent fractions.
Fractions can be represented by points on a number line.</td><td>Essential Questions:
How can fractions be used to represent numbers and their parts?
How can different fractions have the same name?
How can a number line help represent fractional parts?
What is a fraction?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Partition shapes and understand fractions as part of a whole
Understand fractions as part of a set
Express fractions as a whole number
Represent fractions on a number line
Equivalent fractions
Unit Fractions
Compare and order fractions
Find factor pairs and multiples</td><td>Demonstration of Learning
Pearson Topic 12 Performance Assessment-Part A https://www.pearsonsuccessnet.com/snpapp/iText/products/0-328-46776-6/data/pdfs/nt3_12_99.pdf and identify a fraction on a number line:
Students draw fractional parts, name them, and make comparisons
Students to be presented with the following: John has 8 apples. Two apples are yellow, and the rest are red. Label the fraction on the number line which represents the part of the apples that are red.</td></tr>
</table>

Suggested Tasks and Activities	**Technology Integration/ Resources:**
• Complete Am I Ready (McGraw Hill: My Math Gr. 3 Ch. 10) • Problem of the Day; Common Core Quick Check (McGraw Hill: My Math Gr. 3 Ch.10) • Watch video (McGraw Hill: My Math Gr. 3 Ch. 10 Fractions) • Review vocabulary *fourths, halves, thirds (Ch. 10);* • Introduce new vocabulary *denominator, equivalent fractions, fraction, numerator, unit fractions* • Create foldable for practice with modeling fractions as equal parts of one whole and equivalent (McGraw Hill: My Math Gr. 3 Ch. 10 Fractions) • Connect addition to real-world problem solving (McGraw Hill: My Math Gr. 3 TE page 3, 9) • On-level chapter tests and quizzes	• www.connectED.mcgraw-hill.com • Smartboard • Fraction strips/circles • Number lines (Work Mat 2, McGraw Hill: My Math Gr. 3) • Sticky notes • Counters • Play money (6 one-dollar bills) • Fraction tiles • Pattern blocks • Number lines • https://grade3commoncoremath.wikispaces.hcpss.org • https://smart.wikispaces.hcpss.org/Grade+3 • www.edhelper.com • www.ixl.com • www.multiplication.com • www.internet4classrooms.com • www.mathplayground.com • www.adaptedmind.com • www.softschools.com • www.KhanAcademy.com • www.teachertube.com • www.Superteacherworksheets.com • www.enchantedlearning.com • www.teacherpayteachers.com • www.xtratmath.org • www.sumdog.com • www.smartexchange.com • www.teacherled.com

Content Area: Mathematics	**Grade Level : Third**
Unit Title: Measurement	

Interdisciplinary Connections: <u>English Language Arts:</u>

CCSS.ELA-LITERACY.SL.3.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
CCSS.ELA-LITERACY.SL.3.1.B Follow agreed-upon rules for discussions
CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.
CCSS.ELA-LITERACY.SL.3.1.D Explain their own ideas and understanding in light of the discussion.
CCSS.ELA-LITERACY.SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
CCSS.ELA-LITERACY.SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **<u>Learning and Innovation Skills</u>**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **<u>Information, Media and Technology Skills</u>**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **<u>Life and Career Skills</u>**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 6. Title: Measurement</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
3.MD.1
3.MD.2
3.MD.8
3.MD.5
3.MD.6
3.MD.7
3.MD.8
3.MD.7d</td></tr>
<tr><td>Enduring Understanding:
Different measuring tools can be used to measure objects of various sizes in both standard and metric units.
Objects have distinct attributes that can be measured.
The choice of a tool depends on the degree of precision desired.</td><td>Essential Questions:
Why do we measure?
How are perimeter and area related, and how are they different?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Measure to half and quarter of an inch
Measure perimeter
Use concepts of area to measure area
Apply the formula for area
Relate area and perimeter
Find area of composite figures by decomposing
Relate area to multiplication and addition
Solve problems involving same perimeter but different area and vice versa
Estimate metric units of capacity
Measure metric units of capacity
Solve word problems involving liquid volumes
Estimate metric units of mass
Measure metric units of mass</td><td>Demonstration of Learning
Time
Put an elapsed time story problem on chart paper.
Read it aloud to your students.
Then give each student a number line with start time and end time marked on it.
Have students draw a representation of how they solved for the elapsed time on the number line. You may want to slide the number line inside a sheet protector, so you can repeat the activity.
Observe what strategies students use on the number line to solve for the elapsed time.
Think about having the students explain their number line strategy aloud or with a partner. Then consider having partners read each other’s strategy aloud.
Area/Perimeter
On grid paper, present students with a polygon that may be “sectioned” into 2 distinct rectangles. Students are assigned to</td></tr>
</table>

<table>
<tr>
<td>

- Tell and write time to the minute
- Measure and estimate time intervals
- Solve word problems involving time in minutes
- Solve word problems involving mass

</td>
<td>

properly separate the polygon to determine the total perimeter and area of the shape.

- Create a “Measurement Museum.”
  - Students to bring in an object to measure its length and perimeter.
  - Students measure the objects and use index cards to write detailed descriptions of the objects, including numeric data.
  - Students work together to sort the objects by attributes (type, size, use) in order to create displays. Classmates “visit” museum displays with students describing the objects in each display.

</td>
</tr>
<tr>
<td>

Suggested Tasks and Activities

- Complete Am I Ready (McGraw Hill: My Math Gr. 3 Ch. 11 & 13)
- Problem of the Day; Common Core Quick Check (McGraw Hill: My Math Gr. 3 Ch.11 & 13)
- Watch video (McGraw Hill: My Math Gr. 3 Ch. 11 & 13 Measurement & Perimeter/Area)
- Review vocabulary *heavier, hour, lighter, minute, second* Ch. 11; *decompose, distributive property* (Ch. 13)
- Introduce new vocabulary *analog clock, capacity, digital clock, gram (g), kilogram (kg), liquid volume, liter (L), mass, metric unit, milliliter (mL), time interval, unit* (Ch. 11); *area, composite figure, formula, perimeter, square unit, unit square* (Ch. 13)
- Create foldable for practice in identifying metric units of liquid volume and mass; provide practice in understanding concepts of area measurement(McGraw Hill: My Math Gr. 3 Ch. 11 Measurement; Ch. 13 Perimeter & Area)
- Connect addition to real-world problem solving (McGraw Hill: My Math Gr. 3 TE page 12)
- On-level chapter tests and quizzes

</td>
<td>

Technology Integration/ Resources:

- www.connectED.mcgraw-hill.com
- SmartBoard
  1. Rulers with metric & customary
- https://grade3commoncoremath.wikispaces.hcpss.org
- https://smart.wikispaces.hcpss.org/Grade+3
- www.edhelper.com
- www.ixl.com
- www.multiplication.ocom
- www.internet4classrooms.com
- www.mathplayground.com
- www.adaptedmind.com
- www.softschools.com
- www.KhanAcademy.com
- www.teachertube.com
- www.Superteacherworksheets.com
- www.enchantedlearning.com
- www.teacherpayteachers.com
- www.xtratmath.org
- www.sumdog.com
- www.smartexchange.com
- www.teacherled.com

</td>
</tr>
</table>

Content Area: Mathematics	**Grade Level : Third**
Unit Title: Data Analysis	

Interdisciplinary Connections: <u>English Language Arts:</u>

CCSS.ELA-LITERACY.SL.3.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.3.1.B Follow agreed-upon rules for discussions

CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.3.1.D Explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **<u>Learning and Innovation Skills</u>**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **<u>Information, Media and Technology Skills</u>**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **<u>Life and Career Skills</u>**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
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  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 7. Title: Data Analysis</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
3.MD.3
3.MD.4</td></tr>
<tr><td>Enduring Understanding:
1. Graphs convey data in a concise way.
2. The quality of the question used impacts the data collected and the validity of the result.</td><td>Essential Questions :
3. How do we obtain useful information from a set of data?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
4. Organize, represent, and interpret data
5. Generate data in fractions of an inch
6. Draw scaled picture graphs and scaled bar graphs
7. Solve problems involving bar graph analysis
8. Make line plots using generated linear measurement data</td><td>Demonstration of Learning
• Choose heterogeneous groupings of students to work together, with groups determining each job, or role of each student to create project
• Students to decide on “polling” question and choices (ie, favorite type of ice cream; favorite type of music, sport, or sporting team; volunteer opportunities, etc.)
• Students of take poll of class and record data in a tally chart
• Students to create a pictograph with necessary elements (key, title, etc)
• Students to also create a bar graph from the same data, including all necessary elements (title, headings for each axis, etc)</td></tr>
<tr><td>Suggested Tasks and Activities
• Complete Am I Ready (McGraw Hill: My Math Gr. 3 Ch. 12)
• Problem of the Day; Common Core Quick Check (McGraw Hill: My Math Gr. 3 Ch.12)
• Watch video (McGraw Hill: My Math Gr. 3 Ch. 12 Represent & Interpret Data)
• Review vocabulary compare, symbol (Ch. 12)
• Introduce new vocabulary analyze, bar graph, data, frequency table, half inch (1/2), interpret, key, line plot, pictograph, picture graph, quarter inch (1/4), scale, survey, tally chart, tally mark(s)
• Create foldable for practice with displaying the same set of data in four different graphs(McGraw Hill: My Math Gr. 3 Ch. 12)
• Connect addition to real-world problem solving (McGraw Hill: My Math Gr. 3 TE page 11)
• On-level chapter tests and quizzes</td><td>Technology Integration/ Resources:
• www.connectED.mcgraw-hill.com
• SmartBoard
2. Rulers with metric & customary
• https://grade3commoncoremath.wikispaces.hcpss.org
• https://smart.wikispaces.hcpss.org/Grade+3
• www.edhelper.com
• www.ixl.com
• www.multiplication.ocom
• www.internet4classrooms.com
• www.mathplayground.com
• www.adaptedmind.com
• www.softschools.com
• www.KhanAcademy.com
• www.teachertube.com</td></tr>
</table>

	• www.Superteacherworksheets.com • www.enchantedlearning.com • www.teacherpayteachers.com • www.xtratmath.org • www.sumdog.com • www.smartexchange.com • www.teacherled.com

Content Area: Mathematics	**Grade Level : Third**
Unit Title: Geometry	

Interdisciplinary Connections: <u>English Language Arts:</u>

CCSS.ELA-LITERACY.SL.3.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.3.1.B Follow agreed-upon rules for discussions

CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

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CCSS.ELA-LITERACY.SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **<u>Learning and Innovation Skills</u>**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
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    - **Use and Manage Information**
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- **<u>Life and Career Skills</u>**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
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    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 8. Title: Geometry</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:
3.G.1
3.G.2</td></tr>
<tr><td>Enduring Understanding:
1. Shapes can be classified by their attributes.
2. Points, lines, and planes are the foundations of geometry.</td><td>Essential Questions:
3. How can geometric shapes help me solve real-world problems?
4. What are some ways to describe two-dimensional shapes?
5. What attributes does a given shape have?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
• Analyze and compare two-dimensional shapes
• Model, build, and draw two-dimensional shapes
• Identify, name, and describe two-dimensional shapes
• Partition two-dimensional shapes into equal shares/areas
• Identify equal shares of two-dimensional shapes
• Describe and classify polygons by their attributes
• Explore angles of two-dimensional shapes</td><td>Demonstration of Learning
• Students to create a room plan for their dream bedroom
• Students to draw a large rectangle on a piece of grid paper to represent the area in the room they are designing.
• Have students draw and cut out shapes of objects they would want in their dream room.
• Students can glue the figures onto the grid paper to show the floor plan. (ie students may draw and cut out a rectangle to represent their bed, then students may glue the bed where they would want to see it in their room.)
• Students should use at least 4 different (2-dimensional) shapes in their plan. The name of the shape should be identified on the shape, as well as the name of the item it represents.</td></tr>
<tr><td>Suggested Tasks and Activities
• Complete Am I Ready (McGraw Hill: My Math Gr. 3 Ch. 14)
• Problem of the Day; Common Core Quick Check (McGraw Hill: My Math Gr. 3 Ch.14)
• Watch video (McGraw Hill: My Math Gr. 3 Ch. 14 Geometry)
• Review vocabulary rectangle, square, triangle(Ch. 14)
• Introduce new vocabulary angle, attribute, endpoint, hexagon, octagon, parallel, parallelogram, pentagon, polygon, quadrilateral,</td><td>Technology Integration/ Resources:
• www.connectED.mcgraw-hill.com
• SmartBoard
3. Rulers with metric & customary
• https://grade3commoncoremath.wikispaces.hcpss.org
• https://smart.wikispaces.hcpss.org/Grade+3
• www.edhelper.com
• www.ixl.com
• www.multiplication.ocom</td></tr>
</table>

ray, rectangle, rhombus, right angle, right triangle, square, trapezoid, triangle, vertex • Create foldable for practice in classifying shapes by their number of sides and provide the opportunity to produce examples and non-examples of various polygons.(McGraw Hill: My Math Gr. 3 Ch. 14) • Connect addition to real-world problem solving (McGraw Hill: My Math Gr. 3 TE page 11) • On-level chapter tests and quizzes	• www.internet4classrooms.com • www.mathplayground.com • www.adaptedmind.com • www.softschools.com • www.KhanAcademy.com • www.teachertube.com • www.Superteacherworksheets.com • www.enchantedlearning.com • www.teacherpayteachers.com • www.xtratmath.org • www.sumdog.com • www.smartexchange.com • www.teacherled.com

Pacing Guide	
Content Area: Mathematics	
Grade Level: Fourth	
Unit 1: Place Value	**September- October**
Unit 2: Addition and Subtraction	**November**
Unit 3: Multiplication and Division	**December- January**
Unit 4: Fractions	**February**
Unit 5: Decimals	**March - April**
Unit 6: Decimals	**April**
Unit 7: Measurement	**May**
Unit 8: Geometry	**June**
Unit 9: Data	**June**

Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Place Value

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.4.1 Engage effectively in a range of collaborative discussions with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.4.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

CCSS.ELA-LITERACY.SL.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.4.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.4.3 Identify the reasons and evidence a speaker provides to support particular points.

CCSS.ELA-LITERACY.SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.4.6 Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate ;use formal English when appropriate to task and situation.

21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 1. Title: Place Value</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
4.NBT.1
4.NF.6
4.NF.7
4.NBT.2
4.NBT.3
4.NBT.5</td></tr>
<tr><td>Enduring Understanding:
Our number system is based on groups of tens.
In a multi-digit number, a digit in one place represents ten times what it would represent in the place immediately to the right.
Place value can be used to compare and order numbers.</td><td>Essential Questions:
How does place value help represent the value of numbers?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Understand foundations of and generalize about place value
Extend counting sequence and read and write whole numbers
Compare/order numbers
Round numbers
Compose and decompose numbers</td><td>Demonstration of Learning :
Pearson Topic 1 Performance Assessment</td></tr>
<tr><td>Suggested Tasks and Activities
Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online)
Watch video McGraw-Hill : My Math Grade 4 Chapter 1- Place Value (connected.mcgraw-hill.com)
Review vocabulary words to show what they know – ten thousands, thousands, hundreds, tens, ones
Am I Ready McGraw-Hill: My Math Grade 4 Chapter 1
Problem of the Day; Common Core Quick Check (McGraw-Hill: My Math Grade 4 Chapter 1)
Introduce vocabulary words from McGraw-Hill : My Math Grade 4 Chapter 1- Place Value: digit, expanded form, is equal to (=), is greater than (>), is less than (<), number line, period, place value</td><td>Technology Integration/ Resources
SmartBoard
https://grade4commoncoremath.wikispaces.hcpss.org
https://smart.wikispaces.hcpss.org/Grade+4
www.edhelper.com
www.ixl.com
www.illuminations.nctm.org
www.internet4classrooms.com
www.mathplayground.com
www.adaptedmind.com
www.softschools.com
www.khanacademy.com
www.teachertube.com</td></tr>
</table>

• Create foldable for place value chart to make numbers up to the millions place. • Use digit cards to create interactive experience building and rounding numbers. • Make two sets of digits cards 0 – 9 including 2 commas. Create two teams and have them compete to correctly form the given number by arranging themselves accordingly. • Using a place value chart, students will try to make the largest number possible. The teacher will roll a 10 –sided die and students will place each digit into the chart when rolled. Once written down, the student cannot change placement. The student(s) with the largest number possible wins that round. • Students will complete a table with column headings of standard, word, and expanded form. An example of each will be given in each row. Students will fill in table accordingly.	• www.superteacherworksheets.com • www.enchantedlearning.com • www.teacherspayteachers.com • www.xtramath.org • www.sumdog.com • www.smartexchange.com • www.teacherled.com

Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Addition and Subtraction

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.4.1 Engage effectively in a range of collaborative discussions with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.4.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

CCSS.ELA-LITERACY.SL.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.4.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.4.3 Identify the reasons and evidence a speaker provides to support particular points.

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21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
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    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 2. Title: Addition and Subtraction</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
4.NBT.4
4.NBT.2
4.NBT.4
4.NBT.3</td></tr>
<tr><td>Enduring Understanding:
1. Computation involves taking apart and combining numbers using a variety of approaches.
2. Flexible methods of computation involve grouping numbers in strategic ways.
3. Proficiency with basic facts aids estimation and computation of larger whole numbers.</td><td>Essential Questions:
4. What strategies can I use to add or subtract?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
• Fluently add and subtract multi-digit numbers
• Compose and decompose numbers
• Use mental arithmetic
• Use estimation
• Use algorithms to add and subtract
• Use and explain strategies based on the relationship between addition and subtraction
• Use and explain strategies based on place value and properties of operations</td><td>Demonstration of Learning
Students create a drive to recycle cans and bottles, and they keep records of their success.
• Students make posters to publicize a drive to collect cans and bottles for recycling. Students keep records, adding up how many bottles and cans they collect each week. Students estimate how many they will collect in one month and then compare their actual collections with their estimates.
• Students add up how much money they will get for returning the cans and bottles for deposit. They can use the money they collect to have a class party or give a donation to a charity they select.</td></tr>
<tr><td>Suggested Tasks and Activities
• Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online)
• Watch video McGraw-Hill : My Math Grade 4 Chapter 2- Addition & Subtraction (connected.mcgraw-hill.com)
• Review vocabulary words to show what they know – difference, round, word form, estimate, sum
• Am I Ready McGraw-Hill: My Math Grade 4 Chapter 2</td><td>Technology Integration Resources :
• SmartBoard
• Calculator
• www.k-5mathteachingresources.com
• www.softschools.com
• www.mrnussbaum.com
• www.mathplayground.com</td></tr>
</table>

• Problem of the Day; Common Core Quick Check (McGraw-Hill: My Math Grade 4 Chapter 2) • Introduce vocabulary words from McGraw-Hill : My Math Grade 4 Chapter 2 – Addition & Subtraction: Associative Property of Addition, Commutative Property of Addition, equation, Identify Property of Addition, minuend, subtrahend, unknown, variable • Create foldable to fluently add and subtract multi-digit whole numbers. • Use number cubes to form 2, 4, and 5 digit numbers to add or subtract. • Use playing cards to form multi-digit numbers to add or subtract. • Use play money and flyers or menus to add and subtract numbers • Use base-ten blocks to model then add and subtract numbers	

Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Multiplication and Division

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.4.1 Engage effectively in a range of collaborative discussions with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.4.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

CCSS.ELA-LITERACY.SL.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

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21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
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    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td colspan="2">Unit 3. Title: Multiplication and Division</td><td>Time Frame:</td></tr>
<tr><td colspan="3">Standards:
4.NBT.5
4.NBT.6
4.0A.4
4.0A.1
4.0A.2
4.0A.3
4.NBT.3</td></tr>
<tr><td colspan="2">Enduring Understanding:
Products can be determined in a variety of ways including use of place value, arrays, models, Distributive Property, and by an algorithm.
Computation involves taking apart and combining numbers using a variety of approaches.
Proficiency with basic facts aids computation and estimation of numbers.
Quotients can be modeled, found, and estimated in multiple ways.</td><td>Essential Questions:
How are multiplication and division related?
How can I communicate multiplication?
How can I multiply by a two-digit number?
How does division affect numbers?
What is the relationship between multiplication and division?</td></tr>
<tr><td colspan="2">Knowledge and Skills:
Students will…
Compose and decompose numbers
Use and explain strategies based on the relationship between multiplication and division
Use and explain strategies based on place value and properties of operations
Interpret multiplication equations as comparisons
Interpret remainders
Estimation
Divide and fluently multiply multi-digit numbers using standard algorithm
Apply distributive property</td><td>Demonstration of Learning
The fourth grade students are setting up rows of chairs for a poetry reading. They will arrange 24 chairs into 3 rows. How many chairs will be in each row? Draw and write mathematical expressions for all the other arrays in which the chairs can be arranged.</td></tr>
</table>

Suggested Tasks and Activities	**Technology Integration/ Resources:**
• Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online) • Watch video McGraw-Hill : My Math Grade 4 Chapter 3, 4, 5 and 6 - Multiplication & Division (connected.mcgraw-hill.com) • Review vocabulary words to show what they know – *divide, multiply, equation, factor, product, decompose, product, dividend, divisor, quotient* • Am I Ready McGraw-Hill: My Math Grade 4 Chapter 3, 4, 5, and 6 • Problem of the Day; Common Core Quick Check (McGraw-Hill: My Math Grade 4 Chapter 3, 4, 5 and 6) • Introduce vocabulary words from McGraw-Hill: My Math Grade 4 Chapter 3, 4, 5, and 6 – Multiplication & Division: *Associative Property of Multiplication, Commutative Property of Multiplication, decompose, dividend, divisor, fact family, factor, Identity Property of Multiplication, Distributive Property, partial products, regroup, operation, compatible numbers, partial quotients, remainder* • Create foldable to provide practice with factors and multiples of whole numbers; create a foldable to provide four representations for multiplying whole numbers; create a foldable to provide practice with estimating products; create a foldable to practice with dividing by a one-digit number and the steps students should follow as they work through the examples. • Use base ten blocks to model multiplication and division • Use counters to model different arrays • Draw rectangles with different dimensions to model different arrays	• Smartboard • Calculators • www.k-5mathteachingresources.com • www.softschools.com • www.mrnussbaum.com • www.illuminations.nctm.org • www.mathplayground.com • www.xtramath.org

Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Fractions

Interdisciplinary Connections: English Language Arts:

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21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 4. Title: Fractions</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:
4.NF.6
4.NF.1
4.NF.5
4.NF.3b
4.NJ.4a
4.NF.4b
4.NF.2
4.0A.4
4.NF.3c
4.NF.3d
4.NF.4
4.NF.4c</td></tr>
<tr><td>Enduring Understanding:
Fractions can be modeled, compared, and ordered.
The same fractional unit can be represented by an infinite set of different but equivalent fractions.
When adding or subtracting with like denominators, you are adding or subtracting portions of the same size.
When we multiply one number by another, we may get a product bigger than the original number, smaller than the original number, or equal to the original number.</td><td>Essential Questions:
How can different fractions name the same amount?
How can I use operations to model real-word problems?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Greatest Common Factor
Least Common Multiple
Represent fractions on a number line
Equivalent fractions
Unit fractions
Compare and order fractions
Find factor pairs and multiples
Prime and composite numbers
Simplest form</td><td>Demonstration of Learning
Task – Cynthia’s Perfect Punch
Cynthia is making her famous "Perfect Punch" for a party. After looking through the recipe, Cynthia knows that she needs to mix 4 5/8 gallons of fruit juice concentrate with 3 7/8 gallons of sparkling water.
Just as she is about to get started she realizes that she only has one 10-gallon container to use for mixing. Will this container be big enough to hold all the ingredients?
How much punch will this recipe make?</td></tr>
</table>

<table>
<tr>
<td>

- Represent mixed numbers and write as improper fractions
- Add, subtract, and multiply fractions and mixed numbers
- Solve word problems involving addition and subtraction of fractions

Solve word problems involving multiplication of fractions

</td>
<td>

- Amy, Beth, Katie, Gretchen, and Deb love chocolate. One afternoon, they each had a large chocolate bar. Each chocolate bar was the same size. They argued about who ate the most chocolate.

  Here is what each girl ate:

  - Amy: 2/6 of her chocolate bar
  - Beth: 2/3 of her chocolate bar
  - Katie: 3/4 of her chocolate bar
  - Gretchen: 1/2 of her chocolate bar
  - Deb: 1/4 of her chocolate bar

  1. Who ate the most chocolate?
  2. Who ate the least amount of chocolate?
  3. How could we order what the girls ate from the least to the greatest amount?

- Pearson Topic 10 Performance Assessment – Write fractions for parts of a region in simplest form and estimate fractional amounts.

</td>
</tr>
<tr>
<td>

Suggested Tasks and Activities:

- Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online)
- Watch video McGraw-Hill : My Math Grade 4 Chapter 8 and 9 – Fractions and Operations with Fractions (connected.mcgraw-hill.com)
- Review vocabulary words to show what they know – *fourths, halves, thirds, is equal to (=), is greater than (>), is less than (<), denominator, mixed number, numerator, simplest form*
- Am I Ready McGraw-Hill: My Math Grade 4 Chapter 8 & 9
- Problem of the Day; Common Core Quick Check (McGraw-Hill: My Math Grade 4 Chapter 8 and 9)
- Introduce vocabulary words from McGraw-Hill: My Math Grade 4 Chapter 8 and 9 – Fractions and Operations with Fractions: *benchmark fractions, composite number, denominator, equivalent fractions, factor pairs, greatest common factor, improper fraction, least common multiple, mixed number, numerator, prime number, simplest form, like fractions*

</td>
<td>

Technology Integration/ Resources:

www.k-5mathteachingresources.com
www.softschools.com
www.mrnussbaum.com
www.illuminations.nctm.org
www.mathplayground.com
www.visualfractions.com

</td>
</tr>
</table>

• Create foldable to practice representing fractions in different ways; create foldable to provide practice with adding, subtracting, and multiplying fractions. • Fraction strips to show equivalent fractions or compare fractions • Use a ruler to show equivalent fractions • Draw models to represent equivalents or show comparisons • Using tenths and hundredths charts to represent equivalents or show comparisons • Index cards with fractions for students to play “memory” to find equivalent matches • Fraction strips to create mixed numbers or decompose mixed numbers • Hundreds Chart to highlight multiples • Hundreds Chart to find prime numbers from 2 – 100 • Work with fraction bars and other fraction manipulatives • Model factor pairs using rectangular arrays on graph paper or counters • Create T-charts to list all factors to determine GCF • Use a multiplication chart to model equivalent fractions	

Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Decimals

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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 5. Title: Decimals</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
4.NF.6
4.NF.5
4.NF.7</td></tr>
<tr><td>Enduring Understanding:
Place value is based on groups of ten.
Fractions and decimals express a relationship between two numbers.
Fractions and decimals can be used to name the same number.</td><td>Essential Questions:
How are fractions and decimals related?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Understand decimal notation
Write fractions as decimals
Compare and order decimals
Add decimals
Represent decimals on a number line</td><td>Demonstration of Learning:
Students plan a bake sale and price their goods in decimal form. Students create a poster that shows a picture of each item being sold with the price of the item below it. Have students arrange the pictures of the items so that they are in order from least to greatest price.
Pearson Topic 12 Performance Assessment – Design a clay coaster and determine how much clay they need for it.</td></tr>
<tr><td>Suggested Tasks and Activities:
Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online)
Watch video McGraw-Hill : My Math Grade 4 Chapter 10 – Fractions and Decimals (connected.mcgraw-hill.com)
Review vocabulary words to show what they know – equivalent, fraction, place value
Am I Ready McGraw-Hill: My Math Grade 4 Chapter 10 – Fractions and Decimals
Problem of the Day; Common Core Quick Check (McGraw-Hill: My Math Grade 4 Chapter 10)
Introduce vocabulary words from McGraw-Hill : My Math Grade 4 Chapter 10 – Fractions & Decimals: decimal, hundredth, tenth
Create foldable to practice modeling tenths
Use tenths and hundredths place-value charts to find equivalents or show comparisons
Use dimes and pennies to model tenths and hundredths
Draw models to represent tenths and hundredths
Index cards with decimal notation and tenths and hundredths grid models for students to play “memory” to find equivalent matches
Relate decimals to money (dimes, pennies)</td><td>Technology Integration/ Resources:
SmartBoard
Calculator
www.k-5mathteachingresources.com
www.softschools.com
www.mathisfun.com
www.decimalsquares.com</td></tr>
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Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Algebraic Representation

Interdisciplinary Connections: English Language Arts:

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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 6. Title: Algebraic Representation</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
4.NBT.1
4.NBT.4
4.0A.5
4.0A.3
4.NBT.3
4.NBT.6
4.0A.2
4.0A.1
4.NBT.5</td></tr>
<tr><td>Enduring Understanding:
Numerical expressions must be evaluated according to the hierarchy outlined in the rules of Order of Operations.
Mathematical expressions represent relationships.</td><td>Essential Questions:
How are patterns used in mathematics?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Identify/Generate/Explain patterns
Solve addition and subtraction word problems
Assess the reasonableness of answers by rounding and estimating
Determine the unknown/variable
Write and solve number sentences/equations
Order of operations
Write and solve multiplication and division word problems
Write and evaluate numerical expressions
Write and evaluate expressions involving variables
Identify and generate nonnumeric patterns
Apply properties of operations</td><td>Demonstration of Learning
Using the Howard County Schools link (https://smart.wikispaces.hcpss.org/Grade+4), select Assessing 4.OA.5 then select Assessment 5</td></tr>
<tr><td>Suggested Tasks and Activities
Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online)</td><td>Technology Integration/ Resources:
SmartBoard</td></tr>
</table>

• Watch video McGraw-Hill : My Math Grade 4 Chapter 7 – Patterns & Sequences (connected.mcgraw-hill.com) • Review vocabulary words to show what they know – *equation operations, unknown* • Am I Ready McGraw-Hill: My Math Grade 4 Chapter 7 – Patterns and Sequences • Problem of the Day; Common Core Quick Check (McGraw-Hill: My Math Grade 4 Chapter 7) • Introduce vocabulary words from McGraw-Hill : My Math Grade 4 Chapter 7 – Patterns & Sequences*: input, nonnumeric pattern, numeric pattern, output, pattern, rule sequence, term* • Create foldable to provide practice with input/output tables. • Use connecting cubes/symbols/pattern blocks to model patterns	• www.k-5mathteachingresources.com • www.softschools.com • www.aaastudy.com • https://smart.wikispaces.hcpss.org/Grade+4 • www.mathplayground.com

Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Measurement

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.4.1 Engage effectively in a range of collaborative discussions with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.4.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

CCSS.ELA-LITERACY.SL.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.4.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.4.3 Identify the reasons and evidence a speaker provides to support particular points.

CCSS.ELA-LITERACY.SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.4.6 Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate ;use formal English when appropriate to task and situation.

21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 7. Title: Measurement</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:
4.MD.1
4.MD.2
4.MD.3</td></tr>
<tr><td>Enduring Understanding:
Measurement problems can be represented and solve using models.
Objects have distinct attributes that can be measured.
Standard units provide common language for communication.
The choice of measurement tool depends on the measurable attribute and degree of precision desired.</td><td>Essential Questions:
Why do we convert measurements?
How can conversion of measurements help me solve real-world problems?
Why is it important to measure perimeter and area?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Measure to half and quarter of an inch
Measure to eighth of an inch
Estimate using customary and metric units of lengths
Know measurement equivalencies within a measurement system
Convert customary and metric units of lengths
Measure perimeter
Apply the formula for perimeter
Use concepts of area to measure area
Apply the formula for area
Relate area and perimeter
Estimate metric units of capacity
Convert metric units of capacity
Estimate customary units of capacity
Covert customary units of capacity
Estimate metric units of mass
Estimate customary units of weight
Convert customary units of weight
Convert metric units of mass
Convert Units of Time
Solve measurement word problems using the four operations</td><td>Demonstration of Learning
Using the Howard County Schools link (https://smart.wikispaces.hcpss.org/Grade+4), select Assessing 4.MD.4 then select Task Assessment 1
Using the Howard County Schools link (https://smart.wikispaces.hcpss.org/Grade+4), select Assessing 4.MD.1 then select Assessment 3
Using the Howard County Schools link (https://smart.wikispaces.hcpss.org/Grade+4), select Assessing 4.MD.3 then select Assessment</td></tr>
</table>

Suggested Tasks and Activities :	**Technology Integration/ Resources:**
• Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online) • Watch video McGraw-Hill : My Math Grade 4 Chapter 11, 12, and 13 (connected.mcgraw-hill.com) • Review vocabulary words to show what they know – *estimate, length, time, weight, capacity, length, product* • Am I Ready McGraw-Hill: My Math Grade 4 Chapter 11, 12, and 13: Customary Measurement, Metric Measurement, and Area & Perimeter • Problem of the Day; Common Core Quick Check (McGraw-Hill: My Math Grade 4 Chapter 11, 12, and 13) • Introduce vocabulary words from McGraw-Hill: My Math Grade 4 Chapter 11, 12, and 13: *capacity, convert, cup, customary system, fluid ounce, foot, gallon, line plot ounce, pint, pound, mile, quart, second, ton, weight, yard, centimeter, gram, kilogram, kilometer, liter, mass, meter, metric system, milliliter, millimeter, area, perimeter, square unit, unit square* • Create foldable to practice with conversion of measurements within the customary system of measurement; create foldable to practice with the metric system of measurement; create foldable to practice with applying the perimeter and area formulas for rectangles and squares. • Use tools to measure items in the classroom. • Find benchmarks that are meaningful in estimating units. (i.e. inch-finger part). • Use clocks to solve elapsed time problems. • Construct schedules.	• SmartBoard • www.k-5mathteachingresources.com • www.softschools.com • www.math-drills.com

Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Geometry

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.4.1 Engage effectively in a range of collaborative discussions with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.4.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

CCSS.ELA-LITERACY.SL.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.4.2 Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.4.3 Identify the reasons and evidence a speaker provides to support particular points.

CCSS.ELA-LITERACY.SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.4.6 Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate ;use formal English when appropriate to task and situation.

21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
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    - **Be Self-directed Learners**
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    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 8. Title: Geometry</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
4.G.1
4.G.2
4.G.3
4.MD.5
4.MD.6
4.MD.7</td></tr>
<tr><td>Enduring Understanding:
Point, line, and plane are the foundations of geometry.
Objects can be described and compared using their geometric attributes.
Polygons can be described and classified by their sides and angles.
Transforming an object does not affect its attributes.
The measure of an angle depends on the fraction of a circle cut off by its rays.</td><td>Essential Questions:
How are different ideas about geometry connected?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Identify, describe, and classify triangles and quadrilaterals by their attributes
Draw and identify points, lines, line segments, rays, and angles in two-dimensional figures
Identify lines of symmetry/symmetric figures
Explore angles of two-dimensional shapes
Classify angles by their attributes
Measure and draw angles
Recognize angle measures as additive
Solve addition and subtraction problems to determine measures of unknown angles</td><td>Demonstration of Learning
Pearson Topic 9 Performance Assessment
Geometry Town – Have students create a map of a town which includes certain geometric terms such as shapes, lines, and angles. Students will label map accordingly. This can be tied into Social Studies using map skills and map legends.</td></tr>
<tr><td>Suggested Tasks and Activities
Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online)</td><td>Technology Integration/ Resources:
SmartBoard
www.k-5mathteachingresources.com
www.illuminations.nctm.org</td></tr>
</table>

• Watch video McGraw-Hill : My Math Grade 4 Chapter 14 – Geometry (connected.mcgraw-hill.com) • Introduce vocabulary words from McGraw-Hill : My Math Grade 4 Chapter 14- Geometry: *acute angle, acute triangle, angle, degree, endpoint, intersecting, line, line of symmetry, line segment, line symmetry, obtuse angle, obtuse triangle, one-degree angle, parallel, parallelogram, perpendicular, point, ray, rectangle, rhombus, right angle, right triangle, square, trapezoid* • Review vocabulary words to show what they know – *rectangle, square, triangle* • Create foldable to practice with measuring and classifying angles. • Use manipulative to explore shapes • Have students go on a scavenger hunt and locate shapes within/outside the school.	• www.mathplayground.com • http://nlvm.usu.edu/en/nav/vlibrary.html

Content Area: Mathematics	**Grade Level : Fourth**

Unit Title: Data

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.4.1 Engage effectively in a range of collaborative discussions with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.4.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

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CCSS.ELA-LITERACY.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

CCSS.ELA-LITERACY.SL.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

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CCSS.ELA-LITERACY.SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.4.6 Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate ;use formal English when appropriate to task and situation.

21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 9. Title: Data</td><td>Time Frame:</td></tr>
<tr><td colspan="2">Standards:
4.MD.4</td></tr>
<tr><td>Enduring Understanding:
Graphs convey data in concise ways.
A line plot organizes data on a number line and is useful for showing visually how a set of data is distributed.
The type of graph used is influenced by the kind of data and the function of the graph.</td><td>Essential Questions:
How can data be represented?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Organize, represent, and interpret data
Generate data in fractions of an inch
Make line plots using generated linear measurement data
Solve addition and subtraction of fractions problems involving line plot analysis</td><td>Demonstration of Learning
This DOL is the DOL from MeasurementUsing the Howard County Schools link (https://smart.wikispaces.hcpss.org/Grade+4), select Assessing 4.MD.4 then select Task Assessment 1</td></tr>
<tr><td>Suggested Tasks and Activities
Math At Home Letters (McGraw-Hill: My Math Grade 4 – print from online)
McGraw-Hill : My Math Grade 4 Chapter 11 Lesson 8 – Display Measurement Data in a Line Plot (connected.mcgraw-hill.com)
Note – Standards and activities are also addressed in previous topics
Measure objects to nearest ½ , ¼ , 1/8 inch. Display data in line plot.</td><td>Technology Integration/ Resources:
www.k-5mathteachingresources.com
www.illuminations.nctm.org</td></tr>
</table>

Pacing Guide	
Content Area: Mathematics	
Grade Level: Fifth	
Unit 1: Place Value	**September**
Unit 2: Multiplication and Division & Whole Numbers	**September- October**
Unit 3: Decimals	**November- December**
Unit 4: Fractions	**December- January**
Unit 5: Algebraic Representation	**February**
Unit 6: Linear Measurement	**February-March**
Unit 7: Data Sets and Populations	**May**
Unit 8: Geometry	**May- June**

Content Area: Mathematics	**Grade Level : Fifth**

Unit Title: Place Value

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

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CCSS.ELA-LITERACY.SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.5.3 Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

CCSS.ELA-LITERACY.SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.5.6 Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 1. Title: Place Value (Ch. 1)</td><td>Time Frame: 2 wks. (or 10 days)</td></tr>
<tr><td colspan="2">Standards:
5.NBT.1
5.NBT.3
5.NBT.4
5.NBT.7
5.NBT.3b
5.NBT.3a</td></tr>
<tr><td>Enduring Understanding:
Numbers can be used for different purposes.
Numbers can be classified and represented in different ways.
Our number system is based on groups of ten.</td><td>Essential Questions:
How does the position of a digit in a number line relate to its value?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Understand foundations of and generalize about place value
Extend counting sequence and read and write whole numbers
Compare/order numbers
Round numbers
Compose and decompose numbers Use and explain strategies based on place value and properties of operations
Use and explain strategies based on place value and properties of operations</td><td>Demonstration of Learning:
Students create a map of the United States, record the land area of each state, and create a guide to the states listing the states in order of land area, from least to greatest in a two-column table. Challenge students to find the total land area of the United States using the figures they have written on the chart. Using leveled book Cross curriculum “Our Nation’s 50 States” reading connections with Social Studies.</td></tr>
</table>

Suggested Tasks and Activities:	**Technology Integration/ Resources**:
• Base Ten Blocks • Place Value digit cards • Am I ready? • On-line Readiness Quiz (connect-ed.mcgraw-hill.com) • Place Value Foldable • Define vocabulary words • Vocabulary Card Activity • Use a place value chart • Represent fractions with denominators of 10, 100, or 1000 as decimals, • Use place value to compare decimals, use place value to write decimals in expanded form • Use place value and the 4 step process to solve problems	• Smart Board • Laptops • Calculators • Tutorial Videos • Timer • Digital Dashboard • Playing cards • Foldables • Vocabulary cards • Menus • Maps • Homework • Assessments • Hundred squares • songs Suggested websites: • ConnectEd.mcgraw-hill.com • Illuminations • Kahn Academy • Math Playground • Virtual manipulatives • Reading Connection Real World Problem-Solving Library Book

Content Area: Mathematics	**Grade Level : Fifth**

Unit Title: Multiplication and Division & Whole Numbers

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

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CCSS.ELA-LITERACY.SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

CCSS.ELA-LITERACY.SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

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CCSS.ELA-LITERACY.SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

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21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 2. Title: Multiplication and Division & Whole Numbers
(Ch. 2,3,4)</td><td>Time Frame: 6.4 wks. (or 32 days)</td></tr>
<tr><td colspan="2">Standards:
5.NBT.5
5.NBT.6
5.NBT.7
5.NBT.2
5.NF.2</td></tr>
<tr><td>Enduring Understanding:
Depending on situation, calculations may be done using; mental math or paper-and-pencil calculations using a variety of algorithms, the relationships among operations and their properties promote computational fluency.
Computation and fluency includes understanding the meaning and the appropriate use of numerical operations.
Proficiency with basic facts aids estimates and computation with larger numbers.</td><td>Essential Questions:
What strategies can be used to multiply whole numbers?
What strategies can be used to divide whole numbers?
What strategies can I use to divide by a two-digit divisor?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Compose and decompose numbers
Use and explain strategies based on the relationship between multiplication and division
Use and explain strategies based on place value and properties of operations
Interpret remainders
Estimation
Divide and fluently multiply multi-digit numbers using standard algorithm
Prime factorization
Powers and Exponents
Apply Distributive Property
Greatest common factor
Least common multiple</td><td>Demonstration of Learning:
Students pick a place to go on a field trip; museum, zoo, library, etc. Student teams find out the separate costs of their plan, including items such as transportation costs, food costs, entrance fees, etc. Each team collaborates to find the total cost of the trip. Then they divide the total cost by the number of students in the class to find out how much each students needs to contribute. Challenge students to think of ways in which they could redistribute the costs if some students could not afford the trip, or if ticket cost is buy 5 get one free, or if 10 nonpaying chaperones attend.</td></tr>
</table>

Suggested Tasks and Activities:	**Technology Integration/ Resources**:
• Place Value foldable • Am I ready? • On-line Readiness Quiz (connect-ed.mcgraw-hill.com) • Place Value Foldable • Define vocabulary words • Vocabulary Card Activity • Use patterns to multiply a number by the power of ten Represent fractions with denominators of 10, 100, or 1000 as decimals, • Use partial products to multiply two numbers, use Distributive Property to multiply whole numbers • Estimate the product of two whole numbers, use standard algorithm to multiply two-digits numbers • Make a model for division • Divide mentally • Estimate quotients • Use distributive property to find quotients of three-digit dividends and one digit quotients. • Divide by a two digit divisor. • Adjust quotients	• Smart Board • Laptops, Calculators • Tutorial Videos • Timer • Digital Dashboard • Playing cards • Foldables • Vocabulary cards • Menus • Maps • Homework • songs Suggested websites: • ConnectEd.mcgraw-hill.com • Illuminations • Kahn Academy • Math Playground • Virtual manipulatives • Reading Connection Real World Problem-Solving Library Book

Content Area: Mathematics	**Grade Level : Fifth**

Unit Title: Decimals

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.5.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.

CCSS.ELA-LITERACY.SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

CCSS.ELA-LITERACY.SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.5.3 Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

CCSS.ELA-LITERACY.SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.5.6 Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.

21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 3. Title: Decimals (Ch. 5 & 6)</td><td>Time Frame: 5.2 wks. (or 26 days)</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:
5.NBT.3a
5.NF.5b
5.NBT.3a
5.NBT.3b
5.NBT.7
5.NBT.4
5.NBT.3</td></tr>
<tr><td>Enduring Understanding:
A quantity can be represented numerically in various ways.
Numeric fluency includes both the understanding of and ability to appropriately use numbers.</td><td>Essential Questions:
How can I use place value and properties to add and subtract decimals?
How is multiplying and dividing decimals similar to multiplying and dividing whole numbers?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Understand decimal notation
Write fractions as decimals
Compare and order decimals
Add decimals
Subtract/Multiply/Divide decimals to hundredths
Estimate sums and differences of decimals by rounding
Represent decimals on a number line</td><td>Demonstration of Learning:
Students create a plan for building a tree house. Students create their designs using a scale map and determine costs of the building materials using multiplication of decimals to find the total cost of building the tree house. Present plan to class and have students evaluate their proposals on a scale of 1 to 10.</td></tr>
<tr><td>Suggested Tasks and Activities:
Number lines
Base Ten Blocks
Am I ready?
On-line Readiness Quiz (connect-ed.mcgraw-hill.com)
Place Value Foldable, Define vocabulary words
Vocabulary Card Activity
Use pace value to round numbers
Use models to add decimals
Add decimals</td><td>Technology Integration/ Resources:
Smart Board
Laptops, Calculators
Tutorial Videos
Timer
Digital Dashboard
Playing cards
Foldables
Vocabulary cards
Menus</td></tr>
</table>

• Use properties of addition to add decimals • Use models to subtract decimals • Use models to multiply decimals • Use properties of multiplication to multiply whole numbers and decimals • Estimate quotients involving decimals • Divide a decimal by a whole number	• Maps • Homework • songs Suggested websites: • ConnectEd.mcgraw-hill.com • Illuminations • Kahn Academy • Math Playground • Virtual manipulatives • Reading Connection Real World Problem-Solving Library Book

Content Area: Mathematics	**Grade Level : Fifth**

Unit Title: Fractions

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

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CCSS.ELA-LITERACY.SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.

CCSS.ELA-LITERACY.SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

CCSS.ELA-LITERACY.SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.5.3 Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

CCSS.ELA-LITERACY.SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.5.6 Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
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    - **Adapt to Change**
    - **Be Flexible**
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    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td colspan="2">Unit 4. Title: Fractions (Ch. 8, 9, 10)</td><td>Time Frame: 7.2 wks. (or 36 days)</td></tr>
<tr><td colspan="3">Standards:
5.NF.2
5.NF.1
5.NF.7
5.NF.5a
5.NBT.2
5.NF.5b
5.NF.4
5.NF.5
5.NF.6
5.NF.4a
5.NF.3
5.NF.7c</td></tr>
<tr><td colspan="2">Enduring Understanding:
There are multiple representations for any number.
Numeric fluency includes both the understanding of and the ability to appropriately use numbers.</td><td>Essential Questions:
How are factors and multiples helpful in solving problems?
How can equivalent fractions help add and subtract fractions?
What strategies can be used to multiply and divide fractions?</td></tr>
<tr><td colspan="2">Knowledge and Skills:
Students will…
Represent fractions on a number line
Equivalent fractions
Unit fractions
Compare and order fractions
Find factor pairs and multiples
Prime and composite numbers
Simplest form
Represent mixed numbers and write as improper fractions
Add, subtract, and multiply fractions and mixed numbers
Solve word problems involving addition and subtraction of fractions
Solve word problems involving multiplication of fractions
Round fractions
Estimate sums and differences of fractions
Estimate products of fractions</td><td>Demonstration of Learning:
Students make a list of party foods that must be divided up such as apples. Students decide how many pieces each food item should be divided into in order to make adequate sized portions. They count up how many portions they need for the whole class and express it as a mixed number if necessary. They can round up in order to make a list of how many whole food items they need for each type of food. Challenge students to express as fractions how many portions of each food would be left over if they bought the number of food items on their list and each students ate one portion of each food.</td></tr>
</table>

• Interpret multiplication with fractions as scaling • Interpret fractions as division of numerator by denominator • Divide fractions and mixed numbers • Solve word problems involving division of fractions • Greatest Common Factor • Least Common Multiple	
Suggested Tasks and Activities: • Fraction Tiles, Am I ready? • On-line Readiness Quiz (connect-ed.mcgraw-hill.com) • Place Value Foldable • Define vocabulary words • Vocabulary Card Activity • Use a fraction to represent division • Use models to represent division • Write fractions in simplest form • Compare fractions with unlike denominators • Use models to write fractions as a decimal • Use fraction tiles to model the sum of fractions • Add & subtract fractions • Add & subtract unlike fractions • Estimate the sum and difference of mixed numbers • Add & subtract mixed numbers • Multiply a whole number and a fraction • Multiply fraction • Multiply fractions without using models • Solve word problems involving mixed numbers • Divide a whole number by a unit fraction	**Technology Integration/ Resources**: • Smart Board • Laptops, Calculators • Tutorial Videos • Timer • Digital Dashboard • Playing cards • Foldables • Vocabulary cards • Menus • Maps • Homework • songs **Suggested websites:** • ConnectEd.mcgraw-hill.com • Illuminations • Kahn Academy • Math Playground • Virtual manipulatives • Reading Connection Real World Problem-Solving Library Book

Content Area: Mathematics	**Grade Level : Fifth**

Unit Title: Algebraic Representation

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

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CCSS.ELA-LITERACY.SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

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CCSS.ELA-LITERACY.SL.5.6 Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.

21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
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    - **Reason Effectively**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 5. Title: Algebraic Representation (Ch. 7)</td><td>Time Frame: 2 wks. (or 10 days)</td></tr>
<tr><td colspan="2">Standards:
5.0A.3
5.NBT.1
5.NBT.2
5.NBT.5
5.NBT.6
5.0A.1
5.NBT.5
5.0A.2
5.NBT.5
5.G.1
5.G.2</td></tr>
<tr><td>Enduring Understanding:
The symbolic language of algebra is used to communicate and generalize the patterns in mathematics.
Algebraic and numeric procedures are interconnected and build on one another to produce a coherent whole.
Algebraic thinking helps solve real life situations numbers and symbols to represent unknown quantities.</td><td>Essential Questions:
How are patterns used to solve problems?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Identify/Generate/Explain patterns
Assess the reasonableness of answers by rounding and estimating
Determine the unknown variable
Write and solve number sentences/equations
Order of operations
Write and solve multiplication and division word problems
Write and evaluate numerical expressions
Write and evaluate expressions involving variables
Apply properties of operations
Form ordered pairs
Tables of ordered pairs</td><td>Demonstration of Learning:
Students plan a recycling effort. Students make a poster showing what happens when they recycle plastic, metal, paper, and glass. They estimate how many pounds the average student can recycle in one week, then write a rule showing what happens when more than one student recycles the same number of pounds. The variable is the number of students who will recycle the maximum number of pounds. Students show how much the class as a whole can recycle, using their rules, and encourage the whole school to recycle by applying the rule to the number of students in the school. The post posters showing these facts around the school and get permission to place recycling bins throughout the school.</td></tr>
</table>

• Graphs of ordered pairs • Analyze patterns and relationships	
Suggested Tasks and Activities: • Pattern Blocks • Algebra tiles • Counters • Cups • Centimeter cubes • Am I ready? • On-line Readiness Quiz (connect-ed.mcgraw-hill.com) • Place Value Foldable • Define vocabulary words • Vocabulary Card Activity • Use order of operations to simplify expressions • Write verbal phrases as mathematical expressions • Use addition and subtraction to describe and extend a number pattern • Name ordered pairs for points on a coordinate plane • Compare numerical patterns graphically	**Technology Integration/ Resources**: • Smart Board • Laptops, Calculators • Tutorial Videos • Timer • Digital Dashboard • Playing cards • Foldables • Vocabulary cards • Menus • Maps • Homework • songs **Suggested websites:** • ConnectEd.mcgraw-hill.com • Illuminations • Kahn Academy • Math Playground • Virtual manipulatives • Reading Connection Real World Problem-Solving Library Book

Content Area: Mathematics	**Grade Level : Fifth**

Unit Title: Linear Measurement

Interdisciplinary Connections: English Language Arts:

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21st Century Themes:

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21st Century Skills:

- **Learning and Innovation Skills**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 6. Title: Linear Measurement C. 11 (Part 1)</td><td>Time Frame: 3wks. (or 15 days)</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:
5.MD.2
5.MD.1</td></tr>
<tr><td>Enduring Understanding:
All measurements consist of three parts- number, unit, and precision.
Measurement describes the attributes of an object.
Standard units of measure enable people to interpret results or data.
Measurements can be used to describe, compare, and make sense of phenomena.</td><td>Essential Questions:
How can I use measurement conversions to solve real world problems?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Measure to half and quarter of an inch
Measure to eighth of an inch
Measure metric units of length
Convert customary and metric units of length
Convert metric units of capacity
Estimate customary units of capacity
Measure customary units of capacity
Convert customary units of capacity
Measure in unit cubes by counting
Relate volume to multiplication and addition
Estimate metric units of mass
Measure metric units of mass
Estimate customary units of weight
Measure customary units of weight
Convert customary units of weight
Convert metric units of mass
Convert units of time
Solve measurement word problems using the four operations</td><td>Demonstration of Learning:
Students use a known length to measure places in the school. First measuring their feet, students use the length of their feet to measure the hallways, cafeteria, classroom, etc. Students first estimate how many heel-to-toe steps they would take for each distance they want to measure and put this estimate in one column of a chart. Then they calculate the distances using the heel-to-toe stepping technique. They write the actual measurements next to the estimates on the chart. Challenge students to measure using a ruler, yardstick, or tape measure. Write the exact measurement on the chart next to the estimate, actual and now exact. Convert to inches, feet, yards, cm, & meters.</td></tr>
</table>

Suggested Tasks and Activities:	**Technology Integration/ Resources**:
• Ruler showing inches, cm, & mm • Yard Stick showing inches, cm, & mm • Meter stick • Am I ready? • On-line Readiness Quiz (connect-ed.mcgraw-hill.com) • Place Value Foldable • Define vocabulary words • Vocabulary Card Activity • Convert customary units of length • Convert customary units of weight • Convert customary units of capacity • Convert metric units of measurement	• Smart Board • Laptops, Calculators • Tutorial Videos • Timer • Digital Dashboard • Playing cards • Foldables • Vocabulary cards • Menus • Maps • Homework • songs **Suggested websites:** • ConnectEd.mcgraw-hill.com • Illuminations • Kahn Academy • Math Playground • Virtual manipulatives • Reading Connection Real World Problem-Solving Library Book

Content Area: Mathematics	**Grade Level : Fifth**

Unit Title: Data Sets and Populations

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

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21st Century Themes:

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21st Century Skills:

- **Learning and Innovation Skills**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td colspan="2">Unit 7. Title: Data Sets and Populations C. 11 (Part 2 – L. 8)</td><td>Time Frame: .8 wks. (or 4 days)</td></tr>
<tr><td colspan="3">Standards:
5.MD.2</td></tr>
<tr><td colspan="2">Enduring Understanding:
The message conveyed by the data depends on how the data is collected, represented, and summarized.
The process of collecting, organizing, analyzing, and interpreting data is useful in making predictions & inferences, and generating questions and answers about our world.</td><td>Essential Questions:
How can I display measurement data on a line plot?</td></tr>
<tr><td colspan="2">Knowledge and Skills:
Students will…
Organize, represent, and interpret data
Generate data in fractions of an inch
Make line plots using generated linear measurement data
Solve addition and subtraction of fractions problems involving line plot analysis
Solve multiplication and division of fractions problems involving line plot analysis</td><td>Demonstration of Learning:
Using a table of data gathered from results of a survey, plot each amount on a line plot. Survey could be how many slices of pizza each student in the class ate at lunchtime. Reduce fractions to simplest form. Find the fair share using the line plot. Show work.</td></tr>
<tr><td>Suggested Tasks and Activities:
Stem & Leaf charts
Bar Graphs
Color tiles
Snap cubes
Two color counters
Place Value Foldable
Define vocabulary words
Vocabulary Card Activity
Make a line plot to display measurements given in fractions of a unit, Represent data
Find the “fair share”
Explain how to find fair share</td><td>Technology Integration/ Resources:
Smart Board
Laptops, Calculators
Tutorial Videos
Timer
Digital Dashboard
Playing cards
Foldables
Vocabulary cards
Menus
Maps
Homework
songs</td><td>Suggested websites:
ConnectEd.mcgraw-hill.com
Illuminations
Kahn Academy
Math Playground
Virtual manipulatives
Reading Connection Real World Problem-Solving Library Book</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Fifth**

Unit Title: Data Sets and Populations

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.5.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.5.1.B Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.5.1.C Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.

CCSS.ELA-LITERACY.SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

CCSS.ELA-LITERACY.SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.5.3 Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

CCSS.ELA-LITERACY.SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-LITERACY.SL.5.6 Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td colspan="2">Unit 8. Title: Geometry, Two- and Three- Dimensional Shapes and Figures C. 12</td><td>Time Frame: 3.4 wks. (or 17 days)</td></tr>
<tr><td colspan="3">Standards:
5.G.4
5.MD.3
5.G.3
5.MD.4
5.MD.5b
5.MD.5c
5.MD.5a</td></tr>
<tr><td colspan="2">Enduring Understanding:
Geometry helps us understand the structure of space and the spatial relations around us.
Points, lines, and planes are the building blocks of geometry.</td><td>Essential Questions:
In what ways do we define shapes?</td></tr>
<tr><td colspan="2">Knowledge and Skills:
Students will…
Classify two-dimensional figures by their properties
Describe properties of three-dimensional figures
Identify, describe, and classify triangles and quadrilaterals by their attributes
Measure sides and angles of triangles and quadrilaterals
Understand concepts of volume
Measure volume by counting cubes
Relate volume to addition and multiplication
Apply the formula for volume
Build composite figures and find the volume
Volume of right rectangular prisms</td><td>Demonstration of Learning:
Students will work in groups to collect, create, and decorate a city using 3-D objects. Students will write and answer five questions about five buildings in their city that address the different topics covered in this chapter such as; classifying shapes, 3-D figures, angles, sides, & volume. Students will travel around visiting one another’s cities and answer the questions</td></tr>
<tr><td>Suggested Tasks and Activities:
Geo Blocks
Geometric solids
Mirrors
Polygon shapes
Geoboards
Protractors</td><td>Technology Integration/ Resources:
Smart Board
Laptops, Calculators
Tutorial Videos
Timer
Digital Dashboard</td><td>Suggested websites:
ConnectEd.mcgraw-hill.com
Illuminations
Kahn Academy
Math Playground
Virtual manipulatives</td></tr>
</table>

• Power Solids • Tangrams • Pantomimes • Am I ready? • On-line Readiness Quiz (connect-ed.mcgraw-hill.com) • Place Value Foldable • Define vocabulary words • Vocabulary Card Activity • Classify polygons • Triangles, & quadrilaterals • Use attributes to best describe two-dimensional figures • Find volume of a prism	• Playing cards • Foldables • Vocabulary cards • Menus • Maps • Homework songs	• Reading Connection Real World Problem-Solving Library Book

Pacing Guide	
Content Area: Mathematics	
Grade Level: Sixth	
Unit 1: Ratio & Proportional Relationships	**September**
Unit 2: The Number System	**October - November**
Unit 3: Expressions & Equations	**December- February**
Unit 4: Geometry	**March- April**
Unit 5: Statistics and Probability	**May- June**

Content Area: Mathematics	**Grade Level : Sixth**

Unit Title: Ratio & Proportional Relationships

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.6.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

CCSS.ELA-LITERACY.SL.6.1.B Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

CCSS.ELA-LITERACY.SL.6.1.C Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

CCSS.ELA-LITERACY.SL.6.1.D Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

CCSS.ELA-LITERACY.SL.6.2 Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

CCSS.ELA-LITERACY.SL.6.3 Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

CCSS.ELA-LITERACY.SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

CCSS.ELA-LITERACY.SL.6.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

CCSS.ELA-LITERACY.SL.6.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
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  - **Leadership and Responsibility**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit Title: Ratio & Proportional Relationships (Unit 1)</td><td>Time Frame: 3 weeks (2 chapters)</td></tr>
<tr><td colspan="2">Standard:
6.RP.1; 6.RP.2; 6.RP.3, 3a, 3b, 3c, 3d</td></tr>
<tr><td>Enduring Understanding:
In the real world, students can use ratio and proportional reasoning to work with every day aspects of life (shopping, repairs, gardening, etc.).</td><td>Essentials Questions:
How are ratios and equivalent fractions related?
How are multiplication and division used in proportional relationships?</td></tr>
<tr><td>Knowledge and Skills:
Represent fractions on a number line
Divide fractions and mixed numbers
Solve word problems involving division of fractions
Add decimals
Represent decimals on a number line
Subtract/Multiply/Divide multi-digit decimals
Percent at rate per 100
Find a percent of a quantity
Solve percent problems for the whole
Understand the concept of a ratio
Use ratio and rate language
Understand the concept of a unit rate
Solve real-world problems using ratios and rates
Tables of equivalent ratios
Graph ratio tables
Unit pricing
Constant speed
Use ratios to convert measurements</td><td>Demonstration of Learning:
Calculating unit prices to find the best price/location for items
Calculate amount of savings on an item
Calculate if 2 or more sales are equivalent in savings
Create factor trees and lists to find factors & multiples
Plot coordinates to create lines, pictures, etc. on coordinate plane</td></tr>
<tr><td>Suggested Tasks and Activities:
Tests
Quizzes
“How you say it is how you write it” – when you say the fraction out loud, the way that it is said is the decimal way that it is written
Use flyers from different stores to do comparison shopping
Unit price activities with comparing prices</td><td>Resources:
SmartBoard
Wipe off boards
Internet
Paper & pencil
Manipulatives
Graphic organizers</td></tr>
</table>

• Calculating gas mileage • "Foldable" for conversions from percent to decimal to fraction • Tip situations	• Workbook • Foldable • Vocabulary cards • Flyers from stores • Coupons from stores • Menus • Advertisements for cars (rates) • http://www.khanacademy.org/commoncore/grade-6-RP
Technology integration: • SmartBoard • Calculator • Laptops • Tutorial videos/websites • Timer	

Content Area: Mathematics	**Grade Level : Sixth**

Unit Title: The Number System

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.6.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

CCSS.ELA-LITERACY.SL.6.1.B Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

CCSS.ELA-LITERACY.SL.6.1.C Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

CCSS.ELA-LITERACY.SL.6.1.D Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

CCSS.ELA-LITERACY.SL.6.2 Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

CCSS.ELA-LITERACY.SL.6.3 Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

CCSS.ELA-LITERACY.SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

CCSS.ELA-LITERACY.SL.6.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

CCSS.ELA-LITERACY.SL.6.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)

21st Century Themes:

- Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
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    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit Title: The Number System (Unit 2)</td><td>Time Frame: 9-10 weeks (3 chapters)</td></tr>
<tr><td colspan="2">Standard:
6.NS.1; 6.NS.2; 6.NS.3, 3d; 6.NS.4; 6.NS.5; 6.NS.6, 6a, 6b, 6c; 6.NS.7, 7a, 7b, 7c, 7d; 6.NS.8; 6.RP.3</td></tr>
<tr><td>Enduring Understanding:
Knowing the concept of distance, students can work with a number line and coordinate plane to properly identify integers, fractions, and all rational numbers.</td><td>Essentials Questions:
How can mathematical ideas be represented?
How can estimating be helpful?
What does it mean to multiply and divide fractions?
How are integers and absolute value used in real-world situations?</td></tr>
<tr><td>Knowledge and Skills:
Divide and fluently multiply multi-digit numbers using standard algorithm
Greatest Common Factor (GCF)
Least Common Multiple (LCM)
Apply Distributive Property
Positive and negative numbers
Opposite signs of numbers
Graph integers on a number line
Graph integers on a coordinate plane
Order integers
Absolute value
Graph rational numbers on a number line
Order rational numbers on a number line
Write, interpret and explain order of rational numbers
Graph rational numbers on a coordinate plane
Solve real-world problems by graphing points in all four quadrants
Represent fractions on a number line
Divide fractions and mixed numbers
Solve word problems involving division of fractions</td><td>Demonstration of Learning:
Students will be in charge of organizing a party. They will be given a budget, a few recipes, and a total amount of people that are going to be attending the party. They will then have to adjust the recipes (increase or decrease) for the number of people attending the party, “purchase” ingredients for each recipe by determining where to purchase the ingredients based on where the better buy is, and “make” each recipe.
Students will create a “map” of the classroom with a particular items used as the “origin.” They will create a map key to illustrate what each item in the classroom is and how much space is between each item.</td></tr>
<tr><td>Suggested Tasks and Activities:
Tests
Quizzes</td><td>Resources:
SmartBoard
Wipe off boards</td></tr>
</table>

• Create factor trees and lists to find LCM and GCF • Human number line to work with integers and rational numbers • Identifying quadrants in classroom • Ordering integers in a "race" to see which half of the class can do it faster	• Internet • Paper & pencil • Manipulatives • Graphic organizers • Workbook • Foldable • Vocabulary cards • Graph paper • Rulers • http://www.mathplayground.com/ • http://www.khanacademy.org/commoncore/grade-6-RP • http://www.internet4classrooms.com/skill_builders/coordinate_plane_math_sixth_6th_grade.htm • http://www.internet4classrooms.com/skill_builders/coordinate_plane_math_sixth_6th_grade.htm • http://resources.oswego.org/games/BillyBug/bugcoord.html • http://resources.oswego.org/games/BillyBug2/bug2.html
Technology integration: • SmartBoard • Calculator • Laptops • Tutorial videos/websites • Timer	

Content Area: Mathematics	**Grade Level : Sixth**

Unit Title: Expressions & Equations

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.6.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

CCSS.ELA-LITERACY.SL.6.1.B Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

CCSS.ELA-LITERACY.SL.6.1.C Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

CCSS.ELA-LITERACY.SL.6.1.D Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

CCSS.ELA-LITERACY.SL.6.2 Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

CCSS.ELA-LITERACY.SL.6.3 Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

CCSS.ELA-LITERACY.SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

CCSS.ELA-LITERACY.SL.6.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

CCSS.ELA-LITERACY.SL.6.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit Title: Expressions & Equations (Unit 3)</td><td>Time Frame: 9-10 weeks (3 chapters)</td></tr>
<tr><td colspan="2">Standard:
6.EE.1; 6.EE.2, 2a, 2b, 2c; 6.EE.3, 6.EE.4; 6.EE.5; 6.EE.6; 6.EE.7; 6.EE.8; 6.EE.9; 6.NS.4</td></tr>
<tr><td>Enduring Understanding:
In the real world, students will identify and utilize the usage of expressions, equations, and inequalities</td><td>Essentials Questions:
Why is understanding order of operations important?
How would we recognize that 2 items are equal?
Why do we need to know expressions and equations?
Why are expressions and equations different?
Why do inequalities have more than 1 answer?
How are inequalities and equations different? The same?
How can function tables help organize information?</td></tr>
<tr><td>Knowledge and Skills:
Simplify numerical and algebraic expressions
Write and solve 1 step equations and inequalities
Graphing – linear & inequalities
Properties of numbers
Combine like terms
Complete function tables
Calculate the function rules for the tables
Write and evaluate numerical expressions
Write and evaluate numerical expressions involving variables
Parts of an expression
Identify equivalent expressions
Identify values that make an equation or inequality true
Use variables and expressions to solve real-world problems
Inequalities of the form x>c or x<c
Dependent and independent variables
Write equations using two variables
Tables of ordered pairs
Graphs of ordered pairs</td><td>Demonstration of Learning:
Design own word problems for other students to solve in other classes
Follow order of operations correctly to show all of the steps used to simplify numerical and algebraic expressions
Using Language Arts vocabulary texts, create a list of words that translate to operations
Using pictures, demonstrate the differences in the properties of addition and multiplication</td></tr>
<tr><td>Suggested Tasks and Activities:
Tests
Quizzes</td><td>Resources:
SmartBoard
Wipe off boards</td></tr>
</table>

• Use of number lines • Use of coordinate plane • Use of calculators (when applicable) • Creating models/visual aids/"foldable" • Use "pizza" to simplify numerical and algebraic expressions	• Internet • Paper & pencil • Manipulatives • Graphic organizers • Workbook • Foldable • Vocabulary cards • http://www.khanacademy.org/commoncore/grade-6-RP
Technology integration: • SmartBoard • Calculator • Laptops • Tutorial videos/websites • Timer	

Content Area: Mathematics	**Grade Level : Sixth**

Unit Title: Geometry

Interdisciplinary Connections: English Language Arts:

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CCSS.ELA-LITERACY.SL.6.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

CCSS.ELA-LITERACY.SL.6.1.B Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

CCSS.ELA-LITERACY.SL.6.1.C Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

CCSS.ELA-LITERACY.SL.6.1.D Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

CCSS.ELA-LITERACY.SL.6.2 Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

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CCSS.ELA-LITERACY.SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

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CCSS.ELA-LITERACY.SL.6.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit Title: Geometry (Unit 4)</td><td>Time Frame: 4 weeks (2 chapters)</td></tr>
<tr><td colspan="2">Standards: 6.G.1, 6.G.2, 6.G.3, 6.G.4, 6.G.8</td></tr>
<tr><td>Enduring Understanding:
Students will find the differences between 2D and 3D figures and how changes in the dimensions can change area, surface area, and volume.</td><td>Essentials Questions:
If the dimensions of a figure are altered, how would that affect the perimeter and/or area of that particular figure?
How are area and volume related?</td></tr>
<tr><td>Knowledge and Skills:
Calculate the area of 2 dimensional figures via the coordinate plane and via a formula
Calculate the surface area and volume of 3 dimensional figures
Compare and contrast 2D and 3D figures
Use proportions to solve scale drawing problems
Draw polygons on the coordinate plane
Use coordinates to find the length of sides of polygons
Area of triangles, quadrilaterals, and composite figures
Represent three-dimensional figures using nets
Use nets to find surface area
Surface area of rectangular prisms, triangular prisms, and pyramids
Volume of right rectangular prisms</td><td>Demonstration of Learning:
Using words, describe the differences between 2D and 3D figures
Create a “family tree” of quadrilaterals
Build 3D figures using nets
Comparing areas of figures with different perimeters and same areas
Using reference sheets and calculators, find the area, surface area, and volume of 2D and 3D figures</td></tr>
<tr><td>Suggested Tasks and Activities:
Tests
Quizzes
“Breaking apart” 3D figures into nets to calculate the surface area
Use graph paper to introduce area of figures (regular and irregular)
Use of reference sheets for area and volume formulas</td><td>Resources:
SmartBoard
Wipe off boards
Internet
Paper & pencil
Manipulatives
Graphic organizers
Workbook
Foldable
Vocabulary cards
http://www.khanacademy.org/commoncore/grade-6-RP</td></tr>
<tr><td>Technology integration:
SmartBoard
Calculator</td><td>Laptops
Tutorial videos/websites
Timer</td></tr>
</table>

Content Area: Mathematics	**Grade Level : Sixth**

Unit Title: Statistics and Probability

Interdisciplinary Connections: English Language Arts:

CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.6.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

CCSS.ELA-LITERACY.SL.6.1.B Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

CCSS.ELA-LITERACY.SL.6.1.C Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

CCSS.ELA-LITERACY.SL.6.1.D Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

CCSS.ELA-LITERACY.SL.6.2 Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

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CCSS.ELA-LITERACY.SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

CCSS.ELA-LITERACY.SL.6.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

CCSS.ELA-LITERACY.SL.6.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)

21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
    - **Implement Innovations**
  - **Critical Thinking and Problem Solving**
    - **Reason Effectively**
    - **Use Systems Thinking**
    - **Make Judgments and Decisions**
    - **Solve Problems**
  - **Communication and Collaboration**
    - **Communicate Clearly**
    - **Collaborate with Others**
    - **Apply Technology Effectively**
- **Information, Media and Technology Skills**
  - **Information Literacy**
    - **Access and Evaluate Information**
    - **Use and Manage Information**
  - **ICT Literacy**
- **Life and Career Skills**
  - **Flexibility and Adaptability**
    - **Adapt to Change**
    - **Be Flexible**
  - **Initiative and Self-Direction**
    - **Manage Goals and Time**
    - **Work Independently**
    - **Be Self-directed Learners**
  - **Social and Cross Cultural Skills**
    - **Interact with others**
    - **Work Effectively in Diverse Teams**
  - **Productivity and Accountability**
    - **Manage Projects**
    - **Produce Results**
  - **Leadership and Responsibility**
    - **Guide and Lead Others**
    - **Be Responsible to Others**

Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit Title: Statistics and Probability (Unit 5)</td><td>Time Frame: 4 weeks (2 chapters)</td></tr>
<tr><td colspan="2">Standard: 6.SP.1; 6.SP.2; 6.SP.3; 6.SP.4; 6.SP.5, 5a, 5b, 5c, 5d</td></tr>
<tr><td>Enduring Understanding:
In the real world, students will create and model statistics via graphs and tables</td><td>Essentials Questions:
How are graphs used in our lives?
Why are graphs so important?
Why would you choose a line graph over a histogram or box and whisker (and vice versa)?
Why do you, at times, get the same answers for the mean, median, and mode calculations?</td></tr>
<tr><td>Knowledge and Skills:
Mean, median, mode, range, outlier calculations
Box and whisker plots
Quartile calculations
Create line plots and histograms via frequency tables
Explain orally the meaning of a graph (line graph, line plots, histogram, box and whisker)
Choose and defend the usage of a particular graph
Recognize statistical questions
Distribution of a set of data
Measures of center
Measures of variation
Interquartile range
Shape of the data distribution
Summarize and describe numerical data sets
Dot plots
Histograms
Box plots</td><td>Demonstration of Learning:
Class projects creating graphs
Finding statistics of different sets of data
Determine if the mean, median, or mode is the proper measure of center should be used to describe the data and why</td></tr>
<tr><td>Suggested Tasks and Activities:
Tests
Quizzes
Calculator usage
Class surveys to calculate mean, median, mode, range, and outliers</td><td>Resources:
SmartBoard
Wipe off boards
Internet
Paper & pencil
Manipulatives</td></tr>
</table>

• Create graphs, line plots, histograms, and box and whisker plots from data	• Graphic organizers • Workbook • Foldable • Vocabulary cards • Graph paper • Rulers • http://www.khanacademy.org/commoncore/grade-6-RP
Technology integration: • SmartBoard • Calculator • Laptops • Tutorial videos/websites • Timer	

Pacing Guide	
Content Area: Mathematics	
Grade Level: Seventh	
Unit 1: Ratio & Proportional Relationships	**September - October**
Unit 2: Rational Numbers	**November - January**
Unit 3: Equations, Expressions and Inequalities	**January - March**
Unit 4: Geometry	**March- April**
Unit 5: Statistics and Probability	**May- June**

Content Area: Mathematics	**Grade Level : Seventh**

Unit Title: Ratios & Proportional Relationships

Interdisciplinary Connections: English Language Arts:

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21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
    - **Work Creatively with Others**
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  - **Critical Thinking and Problem Solving**
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    - **Be Self-directed Learners**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 1. Title: Ratios & Proportional Relationships</td><td>Time Frame: September & October (40 Days)</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:

7.RP.1
7.RP.2
7.RP.2a
7.RP.3
7.NS.3
7.EE.2
7.EE.3</td></tr>
<tr><td>Enduring Understanding:

• Proportional relationships express how quantities change in relationship to each other.</td><td>Essential Questions:
• When and why do I use proportional comparisons?
• How does comparing quantities describe the relationship between them?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
• Solve real-world problems using ratios and rates
• Tables of equivalent ratios
• Use ratios to convert measurements
• Unit rates involving fractions (complex fractions)
• Ratio and probability
• Recognize and represent proportional relationships
• Identify proportional relationships using tables or graphs
• Constant of proportionality (unit rate)
• Represent proportional relationships by equations
• Explain what a point on the graph of a proportional relationship means</td><td>Demonstration of Learning:

• Demonstrate comparison of percent, fractions and decimals by creating a comparison chart
• Demonstrate the understanding of and analyzing proportional relationships and use them to solve real-world mathematical problems by computing unit rates, recognizing proportional relationships, represent proportional relationships in various forms including simple interest, tax, markups and discounts, tips and gratuities and commissions and fees</td></tr>
</table>

• Solve proportions • Use proportional relationships to solve multistep ratio problems • Graph proportional relationships • Scale drawings	
Suggested Tasks and Activities: • Teacher generated assessments • Interactive on line activities • Create a conversion chart of percents, fractions, and decimals • Justify as to why it is important to have a knowledge before purchasing store items	**Resources**: • SmartBoard • Wipe off boards • Internet • Paper & pencil • Manipulatives • Graphic organizers • Workbook • Foldable • Vocabulary cards • Graph paper • Rulers • http://www.khanacademy.org/commoncore/grade-6-RP
Technology integration: • SmartBoard • Calculator • Laptops • Tutorial videos/websites • Timer	

Content Area: Mathematics	**Grade Level : Seventh**

Unit Title: Rational Numbers

Interdisciplinary Connections: English Language Arts:

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21st Century Themes:

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21st Century Skills:

- **Learning and Innovation Skills**
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    - **Produce Results**
  - **Leadership and Responsibility**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 2. Title: Rational Numbers</td><td>Time Frame: November – Early January</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:
7.NS.1
7.NS.1b
7.NS.1c
7.NS.1d
7.NS.2
7.NS.2a
7.NS.2b
7.NS.2c
7.NS.2d
7.NS.3
7.RP.1
7.EE.3</td></tr>
<tr><td>Enduring Understanding:
Numbers can be represented in a variety of equivalent forms.
Rational numbers can be combined and manipulated to solve problems.
Rational numbers represent a part out of a whole.</td><td>Essential Questions:
Why do we represent numbers in different forms?</td></tr>
<tr><td>Knowledge and Skills:
Students will…
Absolute Value
Additive inverses
Multiplication of integers
Division of integers
Add and subtract rational numbers
Represent addition and subtraction on a number line
Interpret sums of rational numbers in real-world contexts
Understand subtraction as adding the additive inverse</td><td>Demonstration of Learning:
Demonstrate the understanding of the properties of operations by adding, subtracting, multiplying or dividing integers
Demonstrate how integers are used in daily life such as banking and temperature change</td></tr>
</table>

• Interpret products and quotients of rational numbers in real-world contexts • Distance between two rational numbers on a number line • Multiply and divide rational numbers • Concept of rational numbers • Convert rational numbers to decimals • Terminating and repeating decimals • Solve real-world problems using operations with rational numbers • Complex fractions • Solve multistep problems involving rational numbers • Percent proportion • Percent equation • Simple interest • Sales tax and gratuities • Markups and markdowns • Commissions and fees • Percent increase and decrease • Percent error • Convert rational numbers to decimals • Terminating and repeating decimals	
Suggested Tasks and Activities: • Teacher generated assessments • Interactive on line activities	**Resources**: • SmartBoard • Wipe off boards • Internet • Paper & pencil • Manipulatives • Graphic organizers • Workbook • Foldable • Vocabulary cards • Graph paper

	• Rulers • http://www.khanacademy.org/commoncore/grade-6-RP
Technology Integration:: • SmartBoard • Calculator • Laptops • Tutorial videos/websites • Timer	

Content Area: Mathematics	**Grade Level : Seventh**

Unit 3. Title: Equations, Expressions and Inequalities

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21st Century Themes:

• Global Awareness

21st Century Skills:

- **Learning and Innovation Skills**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 3. Title: Equations, Expressions and Inequalities</td><td>Time Frame: January – beginning March</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:
7.EE.1
7.EE.2
7.NS.3
7.EE.3
7.EE.4
7.EE.4a
7.EE.4b
7.RP.2c</td></tr>
<tr><td>Enduring Understanding:
Multi-step problems, properties of operations, reasonableness of answers
Expression in different forms, relationship between quantities
Variables, quantities, equations, inequalities, rational number, algebraic solution, arithmetic solution, order of operations, solution set</td><td>Essential Questions:
How do you use patterns to understand mathematics and model situations?
What is algebra?
How are the horizontal and vertical axes related?
How do algebraic representations relate and compare to one another?
How can we communicate and generalize algebraic relationships?</td></tr>
<tr><td>Knowledge and Skills:
Students will…..
Use variables and expressions to solve real-world problems
Graph inequalities on a number line
Solve equations of the form px+q=r and p(x+q)=r
Compare an algebraic solution to an arithmetic solution
Solve multi step problems involving rational numbers
Solve inequalities of the form px+q<r or px +q<r
Solve linear equations with rational coefficients
Represent proportional relationships by equations</td><td>Demonstration of Learning:
Demonstrate the understanding of rewriting expressions that are related/equivalent by applying the distributive property and combining like terms with rational coefficients
Solve real-life and mathematical problems by using numerical and algebraic equations and expressions
Demonstrate the use of equivalent expressions to demonstrate the relationship between quantities and determine simpler solutions to a problem such as 1 + 0.05a is equal to 1.05a means that increase by 5% is the same as multiplying by 1.05</td></tr>
<tr><td>Suggested Tasks and Activities:</td><td>Technology Integration / Resources:</td></tr>
</table>

• Teacher generated assessments • Interactive on-line activities	• SmartBoard • Wipe off boards • Internet • Paper & pencil • Manipulatives • Graphic organizers • Workbook • Foldable • Vocabulary cards • Graph paper • Rulers • http://www.khanacademy.org/commoncore/grade-6-RP

Content Area: Mathematics	**Grade Level : Seventh**

Unit Title: Geometry

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21st Century Themes:

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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

<table>
<tr><td>Unit 4. Title: Geometry</td><td>Time Frame: Beginning March to April</td></tr>
<tr><td colspan="2">Standard and Cumulative Progress Indicators:
7.RP.3</td></tr>
<tr><td>Enduring Understanding:
Geometric shapes, triangles, angles, sides, given conditions, unique triangles
Scale drawings, area, length, geometric figures
Two-dimensional figures, three dimensional figures, plane section, right rectangular prism, right rectangular pyramid
Formula, area of circle, circumference of circle, informal derivation</td><td>Essential Questions:
Why are geometry and geometric figures relevant and important?
How can geometric ideas be communicated using a variety of representations?
How can geometry be used to solve problems about real-world situations, spatial relationships, and logical reasoning?</td></tr>
<tr><td>Knowledge and Skills:
Students will….
Construct triangles form three measures of angles or sides
Plane sections of three dimensional figures
Circles and circumference
Supplementary angles
Complementary angles
Vertical angles
Adjacent angles
Area of composite figures
Area of circles
Informal derivation of area of circle from circumference
Surface area of rectangular prisms
Surface area of triangular prism
Surface area of pyramids
Surface area of composite figures
Surface area of cylinders
Volume of right rectangular prisms
Volume of triangular prisms
Volume of pyramids
Volume of composite figures
Statistics and population samples
Random sampling of populations</td><td>Demonstration of Learning:
Solve real life mathematical problems involving angle measures, calculation of area of regular and irregular figures, calculation of surface area and volume of 3- Dimensional shapes
Demonstrate and describe geometrical figures and describe the relationship between them by drawing and constructing various geometrical figures</td></tr>
</table>

• Draw inferences from random samples • Multiple samples of data • Visual overlap of data distributions • Comparative inferences between two populations • Construct triangles form three measures of angles or sides • Plane sections of three-dimensional figures • Vertical angles • Adjacent angles • Area of composite figures • Area of a circle • Informal derivation of area of circle from circumference • Compute lengths and areas of figures from scale drawings • Reproduce scale drawings with a different scale	
Suggested Tasks and Activities: • Teacher generated assessments • Interactive on line activities • Use and read compasses • Use and read protractor measures • Use and read ruler • Draw 3 Dimensional figures • Define and calculate area and circumference of circles	**Technology Integration / Resources**: • SmartBoard • Wipe off boards • Internet • Paper & pencil • Manipulatives • Graphic organizers • Workbook • Foldable • Vocabulary cards • Graph paper • Rulers • http://www.khanacademy.org/commoncore/grade-6-RP

<table>
<tr><td>Unit 5. Title: Statistics and Probability</td><td>Time Frame: May -June</td></tr>
<tr><td colspan="2">Standards:
7.SP.1
7.SP.2
7.SP.3
7.SP.4
7.SP.5
7.SP.7
7.SP.8</td></tr>
<tr><td>Enduring Understanding:
The way that data is collected, organized and displayed influences interpretation.
The probability of an event’s occurrence can be predicted with varying degrees of confidence</td><td>Essential Questions:
How do you explain real world problems using statistics?
How do you interpret data from statistical representations?
How do you predict future probabilities based on data?</td></tr>
<tr><td>Students will…
Probability and chance events
Likely and unlikely events
Relative frequency
Develop a probability model
Compare theoretical and experimental probability
Compound events
Sample spaces
Number of outcomes
Permutations
Simulations
Fair and unfair games
Dot plots
Box plots
Measures of center</td><td>Demonstration of Learning
Class projects creating graphs
Finding statistics of different sets of data
Determine if the mean, median, or mode is the proper measure of center should be used to describe the data and why</td></tr>
</table>

• Measures of variation	
Suggested Tasks • Collect and use multiple samples of data to answer questions about a population • Generate multiple samples • compare two sets of data using measures of center and variability • Represent sample spaces using organized lists, tables, tree diagrams, and simulations • Identify the outcomes in the sample space which compose the event • Design and use simulation to generate frequencies for compound event	**Technology Integration / Resources**: • SmartBoard • Wipe off boards • Internet • Paper & pencil • Manipulatives • Graphic organizers • Workbook • Foldable • Vocabulary cards • Graph paper • Rulers • http://www.khanacademy.org/commoncore/grade-6-RP

Pacing Guide	
Content Area: Mathematics	
Grade Level: Eighth	
Unit 1: Number System	**September**
Unit 2: Equations and Expressions	**November - January**
Unit 3: Functions	**January - March**
Unit 4: Geometry	**March- April**
Unit 5: Statistics and Probability	**May- June**

Content Area: Mathematics	**Grade Level : Eighth**

Unit Title: Number System

Interdisciplinary Connections: English Language Arts:

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21st Century Themes:

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21st Century Skills:

- **Learning and Innovation Skills**
  - **Creativity and Innovation**
    - **Think critically**
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    - **Implement Innovations**
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Modifications for Various Learners: ESL, IEPs, 504s, Gifted and Talented: Visual Supports, Hands-On Activities, Rephrasing, Clarification of Directions, Student Redirection, Choice of Activities, Multi-Leveled Questions, Extra Time, Technology Use

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<tr><td>Unit 1: Number System</td><td>Time Frame: 3 weeks</td></tr>
<tr><td colspan="2">Standard: 8.NS.1, 8.NS.2</td></tr>
<tr><td>Enduring Understanding:
Know that there are numbers that are not rational, and approximate them by rational numbers.</td><td>Essentials Questions:
Why is it important to know how to write numbers in different ways?</td></tr>
<tr><td>Knowledge and Skills:
Know the concept rational and irrational numbers
Write fractions as decimals and decimals as fractions
Estimate square roots and cube roots
Know that non-perfect squares are irrational
Approximate location of irrational numbers on a number line</td><td>Demonstration of Learning:
Given a group of real numbers students will be able to convert terminating and repeating decimals into a ratio of two integers and vice versa
Students will model comparisons and order real numbers by plotting points on the number line
Students will demonstrate in writing how to use perfect squares and cubes to estimate non-perfect square and cube roots</td></tr>
<tr><td>Suggested Tasks and Activities:
Administer assessments
Linking cubes to demonstrate perfect squares & cubes
Number line activities (on string, human line up)
Use graphic organizers to model real number systems
Make “foldables” to identify rational and irrational numbers
Utilize variety of fraction manipulatives</td><td>Technology Integration/ Resources:
SmartBoard
Wipe off boards
Internet
Paper & pencil
Manipulatives
Graphic organizers
Workbook
Foldable
Vocabulary cards
Graph paper
Rulers
Online resources
Textbook
supplemental materials
manipulatives
calculators</td></tr>
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Content Area: Mathematics	**Grade Level : Eighth**

Unit Title: Equations and Expressions

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<table>
<tr><td>Unit 2: Equations and Expressions</td><td>Time Frame: 7 weeks</td></tr>
<tr><td colspan="2">Standard: 8.EE.1,8.EE.2,8.EE.3,8.EE.4,8.EE.5,8.EE.6,8.EE.7,7a,7b,8.EE.8,8a,8b,8c</td></tr>
<tr><td>Enduring Understanding:
Slope intercept form (y = mx + b) is a standard linear form of an equation, where the m stands for the slope of the linear equation and the b stands for the y-intercept.
Linear equations can be solved graphically or algebraically to yield the same solutions.
Systems of linear equations can have one solution, many solutions, or no solution.
Students will be able to write a function to model linear relationships between two variables to examine the rate of change and initial value of the real world data.</td><td>Essentials Questions:
What is equivalence?
Why are graphs helpful?</td></tr>
<tr><td>Knowledge and Skills:
Students will know….
Square roots of perfect squares and cubes
Properties of exponents
Perform operations using scientific notation
Use scientific notation to estimate quantities
Graph proportional relationships
Rate of change of a linear equation
Understand equations in the form $y = mx+b$
Solve linear equations with one, infinitely many, or no solutions
Solve systems of linear equations by graphing and algebraically
Solve problems involving systems of equations</td><td>Demonstration of Learning:
Given a set of rational expressions student will simplify using Laws of Exponents
Given a group of data have students use scientific notation to estimate answers.
Graph and write the equation from a data table.
Students will be able to write an equation in slope-intercept form, given 2 points.
Solve multi-step equations and systems; then interpret the result as having one, infinite, or no solution.
Given a word problem, be able write and solve linear equations.
Given a word problem, be able to write and solve a system of equations.</td></tr>
<tr><td>Suggested Tasks and Activities:
Use graph paper and straight edge to graph linear equations and determine slope.
Algebra tiles to show proportional relationships
Analyze different graphs to understand slopes</td><td>Technology Integration/ Resources:
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	• Workbook • Foldable • Vocabulary cards • Graph paper • Rulers • Online resources • Textbook • supplemental materials • manipulatives • calculators

Content Area: Mathematics	**Grade Level : Eighth**

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<table>
<tr><td>Unit 3: Functions</td><td>Time Frame: 7 weeks</td></tr>
<tr><td colspan="2">Standard: 8.F.1, 8 F.2, 8F.3, 8SP.1, 8SP.2, 8 SP.4</td></tr>
<tr><td>Enduring Understanding:
A linear function is a rule that assigns one output to each input and, when graphed, creates a line. Data from functions can be represented as a graph or in table format and can be summarized as an equation.
Tables and graphs of functions allow for conclusions to be drawn about their rate of change, intercepts, etc.
Bivariate data has two variables, and graphs such as scatter plots can be useful for displaying and analyzing this type of data. The conclusions made from the data depend on how it is represented and summarized.</td><td>Essentials Questions:
What is equivalence?
Why are graphs helpful?</td></tr>
<tr><td>Knowledge and Skills:
Students will know….
Be able to define linear functions as a rule that assigns one output to each input and determine if data represented in a graph or in a table is a function.
Be able to compare two functions each represented in a different way (numerically, verbally, graphically, and algebraically) and draw conclusions about their properties (rate of change and intercepts).
Be able to utilize equations, graphs, and tables to classify functions as linear or non-linear, recognizing that y = mx + b is linear with a constant rate of change.
Be able to create a linear equation to model and solve real life problems as to interpret the meaning of the slope and the intercept.
Be able to construct scatter plots for bivariate data and identify and interpret data patterns (clustering, outliers, positive or negative association, possible lines of best fit, and nonlinear association).</td><td>Demonstration of Learning:
Utilize equations, graphs, and tables to classify functions as linear or non-linear, recognizing that y = mx + b is linear with a constant rate of change.</td></tr>
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