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GRADE 1 – Unit 1

CORRELATION TO *Math to Learn, a Mathematics Handbook* INVESTIGATION SEQUENCE: Mathematical Thinking at Grade 1	#1	#2	#3	#4	#5
MATHEMATICAL PROCESS					
Create and solve word problems.					
Select appropriate strategies for solving word problems (e.g., using objects or drawings).					
Convey mathematical thinking using content specific language to describe, explain, and compare.					
Talk about mathematics and problem solving in everyday life (e.g., attendance, time, weather).					
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, rulers).	**302**				
ARITHMETIC AND NUMBER CONCEPTS					
Match words and symbols from zero to twenty.	**1–7, 298 299**				
Explore ordinal numbers from first to thirty-first.					
Explore numbers to 100.	**1–7, 298 299**				
Count forward and backward up to 50 by ones and twos using concrete materials, number lines and number charts.	**1–7, 298 299**				
Learn about the meaning of each digit in a two-digit number (place value).					
Explore the concept of even and odd numbers using sets of concrete objects.					
Use the symbols < (less than), > (greater than), = (equal to), + (plus), and - (minus). Learn sums of ten using two numbers and three numbers (e.g., 7+3 = 10; 5+3+2=10).		**26-29**		**26-29**	
Add and subtract two-digit numbers without regrouping.		**56, 57**	**70, 71**		**60**
Explore 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g., 1/2 is one out of two, 1/3 is one out of three).					
Learn value of individual coins and begin to learn their equivalents (e.g., one nickel = five pennies).					
Recognize dollars and cents notations.					
Explore making change for amounts of money up to $1.00.					
STATISTICS AND PROBABILITY CONCEPTS					
Collect and record data in a variety of ways (e.g., surveys, tables, pictures).					
Discuss data using appropriate terms (e.g., most/least, more than/less than).					
Construct bar graphs and pictographs to display real world data (e.g., What are our favorite colors?).					
Predict the likely outcome of repeated acts (e.g., coin toss).					
Explore combinations and arrangements by solving problems such as, "How many different pairs of numbers add up to ten?"		**66, 67**			

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**	**#5**
Explore two- and three-dimensional shapes in everyday life; square, rectangle, triangle, circle, cube, prism, pyramid, and sphere.	**192, 193 196, 197 198, 204 205**				
Compare attributes of objects (e.g., size, shape, weight, texture).	**192, 193 196, 197 198, 204 205**				
Explore the need for standard units of measure.					
Develop familiarity with length, weight, and capacity using standard and nonstandard units (e.g., inches, centimeters, grams, handfuls, body length) through concrete experiences.					
Compare the capacity of containers using materials such as sand and water.					
Use clocks and calendars to study time to the hour, days of the week, and months of the year.					
Explore temperature using Fahrenheit and Celsius thermometers.					
FUNCTION AND ALGEBRA CONCEPTS					
Recognize, describe, create and extend geometric and number patterns.		**66, 67**	**66, 67**	**254, 255 276, 277**	
Sort and classify objects according to a rule or generalization.					
Explore more than one object belonging to one set (e.g., five fingers to one hand, two eyes to one face).					

GRADE 1 – Unit 2

CORRELATION TO *Math to Learn, a Mathematics Handbook* **INVESTIGATION SEQUENCE: Building Number Sense**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				**266-274 286-289**
Create and solve word problems.				
Select appropriate strategies for solving word problems (e.g., using objects or drawings).				
Convey mathematical thinking using content specific language to describe, explain, and compare.				
Talk about mathematics and problem solving in everyday life (e.g., attendance, time, weather).				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, rulers).			**302**	
ARITHMETIC AND NUMBER CONCEPTS	**1–7 10, 298**	**1–7 10, 298**		
Match words and symbols from zero to twenty.				
Explore ordinal numbers from first to thirty-first.		**10-13**	**1–17 32, 33, 38, 39 inside back cover 298 114-117**	
Explore numbers to 100.	**60**			
Count forward and backward up to 50 by ones and twos using concrete materials, number lines and number charts.				
Learn about the meaning of each digit in a two-digit number (place value).				

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**	**#4**
Explore the concept of even and odd numbers using sets of concrete objects.	**26-29 52-71**	**26-29 52-71**	**26-29**	**52-89**
Use the symbols < (less than), > (greater than), = (equal to), + (plus), and - (minus). Learn sums of ten using two numbers and three numbers (e.g., 7+3 = 10; 5+3+2=10).	**52-71**	**52-71**	**60, 61**	
Add and subtract two-digit numbers without regrouping.				
Explore 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g., 1/2 is one out of two, 1/3 is one out of three).				
Learn value of individual coins and begin to learn their equivalents (e.g., one nickel = five pennies).				
Recognize dollars and cents notations.				
Explore making change for amounts of money up to $1.00.				
STATISTICS AND PROBABILITY CONCEPTS				
Collect and record data in a variety of ways (e.g., surveys, tables, pictures).				
Discuss data using appropriate terms (e.g., most/least, more than/less than).				
Construct bar graphs and pictographs to display real world data (e.g., What are our favorite colors?).				
Predict the likely outcome of repeated acts (e.g., coin toss).				
Explore combinations and arrangements by solving problems such as, "How many different pairs of numbers add up to ten?"		**66, 67**		
GEOMETRY AND MEASUREMENT CONCEPTS				
Explore two- and three-dimensional shapes in everyday life; square, rectangle, triangle, circle, cube, prism, pyramid, and sphere.	**196 197**			
Compare attributes of objects (e.g., size, shape, weight, texture).				
Explore the need for standard units of measure.				
Develop familiarity with length, weight, and capacity using standard and nonstandard units (e.g., inches, centimeters, grams, handfuls, body length) through concrete experiences.			**224 225**	
Compare the capacity of containers using materials such as sand and water.				
Use clocks and calendars to study time to the hour, days of the week, and months of the year.				
Explore temperature using Fahrenheit and Celsius thermometers.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, create and extend geometric and number patterns.		**66, 67**	**252-255 276, 277**	
Sort and classify objects according to a rule or generalization.				
Explore more than one object belonging to one set (e.g., five fingers to one hand, two eyes to one face).				

GRADE 1 – Unit 3

CORRELATION TO *Math to Learn, a Mathematics Handbook* **INVESTIGATION SEQUENCE: Survey Questions and Secret Rules**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Create and solve word problems.				
Select appropriate strategies for solving word problems (e.g., using objects or drawings).				
Convey mathematical thinking using content specific language to describe, explain, and compare.				
Talk about mathematics and problem solving in everyday life (e.g., attendance, time, weather).				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, rulers).				
ARITHMETIC AND NUMBER CONCEPTS				
Match words and symbols from zero to twenty.				
Explore ordinal numbers from first to thirty-first.				
Explore numbers to 100.				
Count forward and backward up to 50 by ones and twos using concrete materials, number lines and number charts.				
Learn about the meaning of each digit in a two-digit number (place value).				
Explore the concept of even and odd numbers using sets of concrete objects.				
Use the symbols < (less than), > (greater than), = (equal to), + (plus), and - (minus). Learn sums of ten using two numbers and three numbers (e.g., 7+3 = 10; 5+3+2=10).				
Add and subtract two-digit numbers without regrouping.				
Explore 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g., 1/2 is one out of two, 1/3 is one out of three).				
Learn value of individual coins and begin to learn their equivalents (e.g., one nickel = five pennies).				
Recognize dollars and cents notations.				
Explore making change for amounts of money up to $1.00.				
STATISTICS AND PROBABILITY CONCEPTS				
Collect and record data in a variety of ways (e.g., surveys, tables, pictures).		**232-237**	**232-237**	**232-237**
Discuss data using appropriate terms (e.g., most/least, more than/less than).				
Construct bar graphs and pictographs to display real world data (e.g., What are our favorite colors?).				
Predict the likely outcome of repeated acts (e.g., coin toss).				
Explore combinations and arrangements by solving problems such as, "How many different pairs of numbers add up to ten?"				
GEOMETRY AND MEASUREMENT CONCEPTS				
Explore two- and three-dimensional shapes in everyday life; square, rectangle, triangle, circle, cube, prism, pyramid, and sphere.	**196** **197**			
Compare attributes of objects (e.g., size, shape, weight, texture).				
Explore the need for standard units of measure.				
Develop familiarity with length, weight, and capacity using standard and nonstandard units (e.g., inches, centimeters, grams, handfuls, body length) through concrete experiences.				
Compare the capacity of containers using materials such as sand and water.				
Use clocks and calendars to study time to the hour, days of the week, and months of the year.			**190** **191**	
Explore temperature using Fahrenheit and Celsius thermometers.				

FUNCTION AND ALGEBRA CONCEPTS	**#1**	**#2**	**#3**	**#4**
Recognize, describe, create and extend geometric and number patterns.				
Sort and classify objects according to a rule or generalization.	**242** **243**			
Explore more than one object belonging to one set (e.g., five fingers to one hand, two eyes to one face).				

GRADE 1 – Unit 4

CORRELATION TO *Math to Learn, a Mathematics Handbook* **INVESTIGATION SEQUENCE: Quilt Squares and Block Towns**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Create and solve word problems.			
Select appropriate strategies for solving word problems (e.g., using objects or drawings).			
Convey mathematical thinking using content specific language to describe, explain, and compare.			
Talk about mathematics and problem solving in everyday life (e.g., attendance, time, weather).			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, rulers).			
ARITHMETIC AND NUMBER CONCEPTS			
Match words and symbols from zero to twenty.			
Explore ordinal numbers from first to thirty-first.			
Explore numbers to 100.			
Count forward and backward up to 50 by ones and twos using concrete materials, number lines and number charts.			
Learn about the meaning of each digit in a two-digit number (place value).			
Explore the concept of even and odd numbers using sets of concrete objects.			
Use the symbols < (less than), > (greater than), = (equal to), + (plus), and - (minus). Learn sums of ten using two numbers and three numbers (e.g., 7+3 = 10; 5+3+2=10).			
Add and subtract two-digit numbers without regrouping.			
Explore 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g., 1/2 is one out of two, 1/3 is one out of three).			
Learn value of individual coins and begin to learn their equivalents (e.g., one nickel = five pennies).			
Recognize dollars and cents notations.			
Explore making change for amounts of money up to $1.00.			
STATISTICS AND PROBABILITY CONCEPTS			
Collect and record data in a variety of ways (e.g., surveys, tables, pictures).			**263** **264**
Discuss data using appropriate terms (e.g., most/least, more than/less than).			
Construct bar graphs and pictographs to display real world data (e.g., What are our favorite colors?).			
Predict the likely outcome of repeated acts (e.g., coin toss).			
Explore combinations and arrangements by solving problems such as, “How many different pairs of numbers add up to ten?”			

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**
Explore two- and three-dimensional shapes in everyday life; square, rectangle, triangle, circle, cube, prism, pyramid, and sphere.	**196 197 202-205**	**196 197 202-205**	**196 197 202-205**
Compare attributes of objects (e.g., size, shape, weight, texture).			
Explore the need for standard units of measure.			
Develop familiarity with length, weight, and capacity using standard and nonstandard units (e.g., inches, centimeters, grams, handfuls, body length) through concrete experiences.			
Compare the capacity of containers using materials such as sand and water.			
Use clocks and calendars to study time to the hour, days of the week, and months of the year.			
Explore temperature using Fahrenheit and Celsius thermometers.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, create and extend geometric and number patterns.			
Sort and classify objects according to a rule or generalization.	**242 243**		
Explore more than one object belonging to one set (e.g., five fingers to one hand, two eyes to one face).			

GRADE 1 – Unit 5

CORRELATION TO *Math to Learn, a Mathematics Handbook* **INVESTIGATION SEQUENCE: Number Games and Story Problems**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Create and solve word problems.			**266-275 285-291**
Select appropriate strategies for solving word problems (e.g., using objects or drawings).		**284**	
Convey mathematical thinking using content specific language to describe, explain, and compare.			
Talk about mathematics and problem solving in everyday life (e.g., attendance, time, weather).			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, rulers).	**302-305**	**302-305**	
ARITHMETIC AND NUMBER CONCEPTS			
Match words and symbols from zero to twenty.			
Explore ordinal numbers from first to thirty-first.			
Explore numbers to 100.		**8-17 38 inside back cover**	
Count forward and backward up to 50 by ones and twos using concrete materials, number lines and number charts.		**97 305**	
Learn about the meaning of each digit in a two-digit number (place value).			
Explore the concept of even and odd numbers using sets of concrete objects.			
Use the symbols < (less than), > (greater than), = (equal to), + (plus), and - (minus). Learn sums of ten using two numbers and three numbers (e.g., 7+3 = 10; 5+3+2=10).	**54-71**	**26-29**	
Add and subtract two-digit numbers without regrouping.	**84 85**		**54-71**
Explore 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g., 1/2 is one out of two, 1/3 is one out of three).			

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**
Learn value of individual coins and begin to learn their equivalents (e.g., one nickel = five pennies).			
Recognize dollars and cents notations.		**164 166 167**	
Explore making change for amounts of money up to $1.00.			
STATISTICS AND PROBABILITY CONCEPTS			
Collect and record data in a variety of ways (e.g., surveys, tables, pictures).			
Discuss data using appropriate terms (e.g., most/least, more than/less than).			
Construct bar graphs and pictographs to display real world data (e.g., What are our favorite colors?).			
Predict the likely outcome of repeated acts (e.g., coin toss).			
Explore combinations and arrangements by solving problems such as, "How many different pairs of numbers add up to ten?"	**4–5 67**	**4–5 67**	
GEOMETRY AND MEASUREMENT CONCEPTS			
Explore two- and three-dimensional shapes in everyday life; square, rectangle, triangle, circle, cube, prism, pyramid, and sphere.			
Compare attributes of objects (e.g., size, shape, weight, texture).			
Explore the need for standard units of measure.			
Develop familiarity with length, weight, and capacity using standard and nonstandard units (e.g., inches, centimeters, grams, handfuls, body length) through concrete experiences.			
Compare the capacity of containers using materials such as sand and water.			
Use clocks and calendars to study time to the hour, days of the week, and months of the year.			
Explore temperature using Fahrenheit and Celsius thermometers.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, create and extend geometric and number patterns.		**32-34 254 255**	
Sort and classify objects according to a rule or generalization.			
Explore more than one object belonging to one set (e.g., five fingers to one hand, two eyes to one face).			

GRADE 1 – Unit 6

CORRELATION TO ***Math to Learn, a Mathematics Handbook*** **INVESTIGATION SEQUENCE: Bigger, Taller, Heavier, Smaller**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Create and solve word problems.			
Select appropriate strategies for solving word problems (e.g., using objects or drawings).			
Convey mathematical thinking using content specific language to describe, explain, and compare.			
Talk about mathematics and problem solving in everyday life (e.g., attendance, time, weather).			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, rulers).			

ARITHMETIC AND NUMBER CONCEPTS	**#1**	**#2**	**#3**
Match words and symbols from zero to twenty.			
Explore ordinal numbers from first to thirty-first.			
Explore numbers to 100.			
Count forward and backward up to 50 by ones and twos using concrete materials, number lines and number charts.			
Learn about the meaning of each digit in a two-digit number (place value).			
Explore the concept of even and odd numbers using sets of concrete objects.			
Use the symbols < (less than), > (greater than), = (equal to), + (plus), and - (minus). Learn sums of ten using two numbers and three numbers (e.g., 7+3 = 10; 5+3+2=10).			
Add and subtract two-digit numbers without regrouping.			
Explore 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g., 1/2 is one out of two, 1/3 is one out of three).		**42** **43**	**42** **43**
Learn value of individual coins and begin to learn their equivalents (e.g., one nickel = five pennies).			
Recognize dollars and cents notations.			
Explore making change for amounts of money up to $1.00.			
STATISTICS AND PROBABILITY CONCEPTS			
Collect and record data in a variety of ways (e.g., surveys, tables, pictures).			
Discuss data using appropriate terms (e.g., most/least, more than/less than).			
Construct bar graphs and pictographs to display real world data (e.g., What are our favorite colors?).			
Predict the likely outcome of repeated acts (e.g., coin toss).			
Explore combinations and arrangements by solving problems such as, "How many different pairs of numbers add up to ten?"			
GEOMETRY AND MEASUREMENT CONCEPTS			
Explore two- and three-dimensional shapes in everyday life; square, rectangle, triangle, circle, cube, prism, pyramid, and sphere.			
Compare attributes of objects (e.g., size, shape, weight, texture).			
Explore the need for standard units of measure.			
Develop familiarity with length, weight, and capacity using standard and nonstandard units (e.g., inches, centimeters, grams, handfuls, body length) through concrete experiences.	**218-221** **258-260**	**222-225**	**208** **209**
Compare the capacity of containers using materials such as sand and water.			
Use clocks and calendars to study time to the hour, days of the week, and months of the year.			
Explore temperature using Fahrenheit and Celsius thermometers.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, create and extend geometric and number patterns.			
Sort and classify objects according to a rule or generalization.			
Explore more than one object belonging to one set (e.g., five fingers to one hand, two eyes to one face).			

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GRADE 2– Unit 1

Correlation to *Math to Learn, a Mathematics Handbook* **INVESTIGATION SEQUENCE: Mathematical Thinking at Grade 2**	#1	#2	#3	#4	#5
MATHEMATICAL PROCESS					
Use a variety of strategies to solve problems (e.g., using estimation, objects or drawings).					
Use appropriate operations to solve word problems.					
Discuss, justify, organize, and write about solutions to problems using content specific language to describe, explain, and compare.					
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, and rulers – metric and U.S. Standard).					
ARITHMETIC AND NUMBER CONCEPTS					
Identify number names orally through 100.	**1–5**	**1**		**6-15**	
Use ordinal number from first to thirty-first and beyond.					
Use concrete materials such as base-ten blocks to represent numbers between ten and nine hundred ninety nine.					
Explore expanded notation for two- and three-digit numbers (e.g., 325 = 3 hundreds + 2 tens + 5 ones = 300 + 20 + 5).					
Explore the role of zero in two- and three-digit numbers.					
Count forward up to 100 by twos, threes, fours, fives, and tens and backward by twos, fives, and tens, using concrete materials, number lines and number charts.	**97**				
Explore the relationship between addition and subtraction.					
Know single-digit addition and subtraction facts.	**54-71**	**4, 5, 26, 67 80, 81**	**80**		
Learn about the associative [e.g., (3+4)+6= 13 and 3+(4+6)= 13] and commutative (e.g., 5+3=8 and 3+5=8) properties of addition.					
Add and subtract two-digit numbers with regrouping using concrete materials.			**112-117 124-129**		
Explore multiplication as repeated addition and division as repeated subtraction.					
Recognize 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g.,1/5 is one out of five objects, or 1/5 is one out of five parts).					
Recognize dollars and cents notation to ten dollars.				**164-171**	
Make change for amounts of money up to one dollar.					
STATISTICS AND PROBABILITY CONCEPTS					
Collect and record data in a variety of ways (e.g., survey classmates about favorite foods).					**232-235**
Arrange data in tables and display data using bar graphs, pictographs, and Venn diagrams.					**236-237**
Make predictions, record data from experiments, and explain outcomes using spinners, coins, and color tiles.					
Discuss certainty or uncertainty of events based on data collected over a period of time.					
Understand that some events are more likely to happen than others.					

STATISTICS AND PROBABILITY CONCEPTS (continued)	**#1**	**#2**	**#3**	**#4**	**#5**
Show combinations and arrangements of groups of objects (e.g., How many different sets of three numbers will add up to twelve?).					
GEOMETRY AND MEASUREMENT CONCEPTS					
Explore the properties of two- and three-dimensional shapes noting their similarities and differences.			**196,197 204,205**		
Explore symmetry and congruency.					
Understand the need for standard units of measure.					
Develop familiarity with standard units of measure through concrete experiences (e.g., weigh objects using pounds, grams, and kilograms; measure liquids using cups, quarts, and liters; and measure length using inches, feet, yards, meters, and centimeters).					
Compare sets of objects using the following terms: more than, bigger than, greater than, less than, the same size, equal to, before, after, and between.					
Use clocks and calendars to measure time in days of the week, half hours, quarter hours, and minutes, using clocks and calendars.					
Measure temperature using Fahrenheit and Celsius thermometers.					
FUNCTION AND ALGEBRA CONCEPTS					
Recognize, describe, and extend numeric and geometric patterns (e.g., counting by twos, fours, fives, and tens).					
Explore patterns using number lines and number charts.					
Sort, classify, and order sets of objects according to a rule or generalization.					
Find the missing numbers in open sentences such as 17 + ___ = 20.					
Investigate many to one correspondence such as ten pennies = one dime.					

GRADE 2– Unit 2

Correlation to *Math to Learn, a Mathematics Handbook* **INVESTIGATION SEQUENCE: Coins, Coupons, and Combinations**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Use a variety of strategies to solve problems (e.g., using estimation, objects or drawings).				
Use appropriate operations to solve word problems.				
Discuss, justify, organize, and write about solutions to problems using content specific language to describe, explain, and compare.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, and rulers – metric and U.S. Standard).	**302 303**			
ARITHMETIC AND NUMBER CONCEPTS				
Identify number names orally through 100.				**16, 17 inside back cover**
Use ordinal number from first to thirty-first and beyond.				
Use concrete materials such as base-ten blocks to represent numbers between ten and nine hundred ninety nine.				
Explore expanded notation for two- and three-digit numbers (e.g., 325 = 3 hundreds + 2 tens + 5 ones = 300 + 20 + 5).				
Explore the role of zero in two- and three-digit numbers.				

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**	**#4**
Count forward up to 100 by twos, threes, fours, fives, and tens and backward by twos, fives, and tens, using concrete materials, number lines and number charts.	**97 inside back cover**	**234**		
Explore the relationship between addition and subtraction.			**82-85**	
Know single-digit addition and subtraction facts.	**4, 5 58-71 62, 67**		**52-55 72-73**	
Learn about the associative [e.g., (3+4)+6= 13 and 3+(4+6)= 13] and commutative (e.g., 5+3=8 and 3+5=8) properties of addition.				
Add and subtract two-digit numbers with regrouping using concrete materials.				**114 117**
Explore multiplication as repeated addition and division as repeated subtraction.				
Recognize 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g.,1/5 is one out of five objects, or 1/5 is one out of five parts).				
Recognize dollars and cents notation to ten dollars.	**164 171**			
Make change for amounts of money up to one dollar.				
STATISTICS AND PROBABILITY CONCEPTS				
Collect and record data in a variety of ways (e.g., survey classmates about favorite foods).				
Arrange data in tables and display data using bar graphs, pictographs, and Venn diagrams.				
Make predictions, record data from experiments, and explain outcomes using spinners, coins, and color tiles.				
Discuss certainty or uncertainty of events based on data collected over a period of time.				
Understand that some events are more likely to happen than others.				
Show combinations and arrangements of groups of objects (e.g., How many different sets of three numbers will add up to twelve?).				
GEOMETRY AND MEASUREMENT CONCEPTS				
Explore the properties of two- and three-dimensional shapes noting their similarities and differences.				
Explore symmetry and congruency.				
Understand the need for standard units of measure.				
Develop familiarity with standard units of measure through concrete experiences (e.g., weigh objects using pounds, grams, and kilograms; measure liquids using cups, quarts, and liters; and measure length using inches, feet, yards, meters, and centimeters).				
Compare sets of objects using the following terms: more than, bigger than, greater than, less than, the same size, equal to, before, after, and between.				
Use clocks and calendars to measure time in days of the week, half hours, quarter hours, and minutes, using clocks and calendars.				
Measure temperature using Fahrenheit and Celsius thermometers.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, and extend numeric and geometric patterns (e.g., counting by twos, fours, fives, and tens).				
Explore patterns using number lines and number charts.				
Sort, classify, and order sets of objects according to a rule or generalization.				
Find the missing numbers in open sentences such as 17 + ___ = 20.				
Investigate many to one correspondence such as ten pennies = one dime.				

GRADE 2– Unit 3

Correlation to *Math to Learn, a Mathematics Handbook* **INVESTIGATION SEQUENCE: Does It Walk, Crawl, or Swim?**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Use a variety of strategies to solve problems (e.g., using estimation, objects or drawings).				
Use appropriate operations to solve word problems.				
Discuss, justify, organize, and write about solutions to problems using content specific language to describe, explain, and compare.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, and rulers – metric and U.S. Standard).				
ARITHMETIC AND NUMBER CONCEPTS				
Identify number names orally through 100.				
Use ordinal number from first to thirty-first and beyond.				
Use concrete materials such as base-ten blocks to represent numbers between ten and nine hundred ninety nine.				
Explore expanded notation for two- and three-digit numbers (e.g., 325 = 3 hundreds + 2 tens + 5 ones = 300 + 20 + 5).				
Explore the role of zero in two- and three-digit numbers.				
Count forward up to 100 by twos, threes, fours, fives, and tens and backward by twos, fives, and tens, using concrete materials, number lines and number charts.				
Explore the relationship between addition and subtraction.				
Know single-digit addition and subtraction facts.				
Learn about the associative [e.g., (3+4)+6= 13 and 3+(4+6)= 13] and commutative (e.g., 5+3=8 and 3+5=8) properties of addition.				
Add and subtract two-digit numbers with regrouping using concrete materials.				
Explore multiplication as repeated addition and division as repeated subtraction.				
Recognize 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g.,1/5 is one out of five objects, or 1/5 is one out of five parts).				
Recognize dollars and cents notation to ten dollars.				
Make change for amounts of money up to one dollar.				
STATISTICS AND PROBABILITY CONCEPTS				
Collect and record data in a variety of ways (e.g., survey classmates about favorite foods).	**232-234**	**232-234**	**232-234**	**232-234**
Arrange data in tables and display data using bar graphs, pictographs, and Venn diagrams.	**235-243**	**235-243**	**235-243**	**235-243**
Make predictions, record data from experiments, and explain outcomes using spinners, coins, and color tiles.				
Discuss certainty or uncertainty of events based on data collected over a period of time.				
Understand that some events are more likely to happen than others.				
Show combinations and arrangements of groups of objects (e.g., How many different sets of three numbers will add up to twelve?).				

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**
Explore the properties of two- and three-dimensional shapes noting their similarities and differences.				
Explore symmetry and congruency.				
Understand the need for standard units of measure.				
Develop familiarity with standard units of measure through concrete experiences (e.g., weigh objects using pounds, grams, and kilograms; measure liquids using cups, quarts, and liters; and measure length using inches, feet, yards, meters, and centimeters).				
Compare sets of objects using the following terms: more than, bigger than, greater than, less than, the same size, equal to, before, after, and between.				
Use clocks and calendars to measure time in days of the week, half hours, quarter hours, and minutes, using clocks and calendars.				
Measure temperature using Fahrenheit and Celsius thermometers.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, and extend numeric and geometric patterns (e.g., counting by twos, fours, fives, and tens).				
Explore patterns using number lines and number charts.				
Sort, classify, and order sets of objects according to a rule or generalization.				
Find the missing numbers in open sentences such as 17 + ___ = 20.				
Investigate many to one correspondence such as ten pennies = one dime.				

GRADE 2– Unit 4

Correlation to *Math to Learn, a Mathematics Handbook* **INVESTIGATION SEQUENCE: Shapes, Halves, and Symmetry**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Use a variety of strategies to solve problems (e.g., using estimation, objects or drawings).	**274**	**274**	**274**	**274**
Use appropriate operations to solve word problems.				
Discuss, justify, organize, and write about solutions to problems using content specific language to describe, explain, and compare.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function calculators, measuring cups, scales, and rulers – metric and U.S. Standard).				
ARITHMETIC AND NUMBER CONCEPTS				
Identify number names orally through 100.				
Use ordinal number from first to thirty-first and beyond.				
Use concrete materials such as base-ten blocks to represent numbers between ten and nine hundred ninety nine.				
Explore expanded notation for two- and three-digit numbers (e.g., 325 = 3 hundreds + 2 tens + 5 ones = 300 + 20 + 5).				
Explore the role of zero in two- and three-digit numbers.				
Count forward up to 100 by twos, threes, fours, fives, and tens and backward by twos, fives, and tens, using concrete materials, number lines and number charts.				
Explore the relationship between addition and subtraction.				
Know single-digit addition and subtraction facts.				
Learn about the associative [e.g., (3+4)+6= 13 and 3+(4+6)= 13] and commutative (e.g., 5+3=8 and 3+5=8) properties of addition.				
Add and subtract two-digit numbers with regrouping using concrete materials.				

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**	**#4**
Explore multiplication as repeated addition and division as repeated subtraction.				
Recognize 1/2, 1/3, 1/4, 1/5, 1/8, 1/10 as part of a whole or part of a collection of things (e.g.,1/5 is one out of five objects, or 1/5 is one out of five parts).			**42-49**	
Recognize dollars and cents notation to ten dollars.				
Make change for amounts of money up to one dollar.				
STATISTICS AND PROBABILITY CONCEPTS				
Collect and record data in a variety of ways (e.g., survey classmates about favorite foods).				
Arrange data in tables and display data using bar graphs, pictographs, and Venn diagrams.	**242**			
Make predictions, record data from experiments, and explain outcomes using spinners, coins, and color tiles.				
Discuss certainty or uncertainty of events based on data collected over a period of time.				
Understand that some events are more likely to happen than others.				
Show combinations and arrangements of groups of objects (e.g., How many different sets of three numbers will add up to twelve?).				
GEOMETRY AND MEASUREMENT CONCEPTS				
Explore the properties of two- and three-dimensional shapes noting their similarities and differences.	**196 197 204**	**196 197**	**204 205**	
Explore symmetry and congruency.			**200 201**	**198 199**
Understand the need for standard units of measure.				
Develop familiarity with standard units of measure through concrete experiences (e.g., weigh objects using pounds, grams, and kilograms; measure liquids using cups, quarts, and liters; and measure length using inches, feet, yards, meters, and centimeters).				
Compare sets of objects using the following terms: more than, bigger than, greater than, less than, the same size, equal to, before, after, and between.			**216**	
Use clocks and calendars to measure time in days of the week, half hours, quarter hours, and minutes, using clocks and calendars.				
Measure temperature using Fahrenheit and Celsius thermometers.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, and extend numeric and geometric patterns (e.g., counting by twos, fours, fives, and tens).				
Explore patterns using number lines and number charts.				
Sort, classify, and order sets of objects according to a rule or generalization.				
Find the missing numbers in open sentences such as 17 + ___ = 20.				
Investigate many to one correspondence such as ten pennies = one dime.				

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GRADE 3– Unit 1

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Mathematical Thinking at Grade 3**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).				
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).				**414** **417**
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and write numbers up to hundred thousands.	**1–5** **429**	**17-19**	**12** **13**	**17-19**
Explore expanded notation for large numbers.				
Count forward and backward to 100 by twos, threes, fives and tens.				
Add and subtract whole numbers, with regrouping, with and without using calculators.		**34-45** **105**		**34-45**
Identify the sum/difference of two whole numbers as even or odd.				**91**
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.				
Explore multiplication and begin to learn multiplication facts.				
Explore the role of zero and one in multiplication.				
Explore division and division procedures without remainders.		**126**		
Explore the relationship between multiplication and division.				
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.				
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.				
Use the terms numerator and denominator.				
Add and subtract fractions with like denominators.				
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).				**22-25** **28**
Relate fractions and decimals to the monetary system and metric measure.				
Add and subtract decimals with one place (tenths).				

STATISTICS AND PROBABILITY CONCEPTS	**#1**	**#2**	**#3**	**#4**
Organize data using tables, graphs and Venn diagrams.	**266-271**			
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).				
Read and interpret a line plot.			**272**	
Discuss graphs found in everyday publications.				
Explore range, median, mode and mean using concrete materials.				
Predict the outcome of an experiment and compare the result to the prediction.				
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).				
Explain why a game is fair or unfair.				
Develop orderly ways to determine the number of possible arrangements and combinations.				
GEOMETRY AND MEASUREMENT CONCEPTS				
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).				
Investigate symmetry (reflections).		**322**		
Explore three-dimensional shapes to begin to understand volume (filling space within an object).				
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.				
Choose appropriate measuring tools for standard or nonstandard measurements.				
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).				
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).				
Use clocks and calendars to study time to five- and one-minute intervals.				
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).				
Locate points on a coordinate grid or map.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, and extend patterns (e.g., numeric, symbolic).				
Explore patterns in odd and even numbers.				
Use manipulative materials to model skip counting patterns related to multiplication.				
Represent and analyze patterns and functions using tables (e.g., input/output boxes).				
Find missing numbers in open sentences (e.g., 2 x _ = 6).				
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.				

GRADE 3– Unit 2

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Things That Come in Groups**	**#1**	**#2**	**#3**	**#4**	**#5**
MATHEMATICAL PROCESS					
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).					**380, 381** **376, 377**
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.					
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).		**417**			
ARITHMETIC AND NUMBER CONCEPTS					
Use knowledge of place value to read and write numbers up to hundred thousands.					
Explore expanded notation for large numbers.					
Count forward and backward to 100 by twos, threes, fives and tens.					
Add and subtract whole numbers, with regrouping, with and without using calculators.					
Identify the sum/difference of two whole numbers as even or odd.					
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.					
Explore multiplication and begin to learn multiplication facts.	**60-73**	**429** **90**	**352** **65, 89**		**118-125**
Explore the role of zero and one in multiplication.					
Explore division and division procedures without remainders.				**74-85**	**126** **127**
Explore the relationship between multiplication and division.				**77, 82** **83**	
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.					
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.					
Use the terms numerator and denominator.					
Add and subtract fractions with like denominators.					
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).					
Relate fractions and decimals to the monetary system and metric measure.					
Add and subtract decimals with one place (tenths).					
STATISTICS AND PROBABILITY CONCEPTS					
Organize data using tables, graphs and Venn diagrams.					
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).					
Read and interpret a line plot.					**272**
Discuss graphs found in everyday publications.					
Explore range, median, mode and mean using concrete materials.					
Predict the outcome of an experiment and compare the result to the prediction.					
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).					
Explain why a game is fair or unfair.					
Develop orderly ways to determine the number of possible arrangements and combinations.					

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**	**#5**
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).					
Investigate symmetry (reflections).					
Explore three-dimensional shapes to begin to understand volume (filling space within an object).					
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.			**352**		
Choose appropriate measuring tools for standard or nonstandard measurements.					
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).					
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).					
Use clocks and calendars to study time to five- and one-minute intervals.					
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).					
Locate points on a coordinate grid or map.					
FUNCTION AND ALGEBRA CONCEPTS					
Recognize, describe, and extend patterns (e.g., numeric, symbolic).					
Explore patterns in odd and even numbers.					
Use manipulative materials to model skip counting patterns related to multiplication.					
Represent and analyze patterns and functions using tables (e.g., input/output boxes).					
Find missing numbers in open sentences (e.g., 2 x _ = 6).					
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.					

GRADE 3– Unit 3

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Flips, Turns, and Area**	**#1**	**#2**
MATHEMATICAL PROCESS		
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).	**380**	
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.		
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).		
ARITHMETIC AND NUMBER CONCEPTS		
Use knowledge of place value to read and write numbers up to hundred thousands.		
Explore expanded notation for large numbers.		
Count forward and backward to 100 by twos, threes, fives and tens.		
Add and subtract whole numbers, with regrouping, with and without using calculators.		
Identify the sum/difference of two whole numbers as even or odd.		
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.		
Explore multiplication and begin to learn multiplication facts.		
Explore the role of zero and one in multiplication.		
Explore division and division procedures without remainders.		
Explore the relationship between multiplication and division.		
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.		
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.		
Use the terms numerator and denominator.		
Add and subtract fractions with like denominators.		
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).		
Relate fractions and decimals to the monetary system and metric measure.		
Add and subtract decimals with one place (tenths).		
STATISTICS AND PROBABILITY CONCEPTS		
Organize data using tables, graphs and Venn diagrams.		
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).		
Read and interpret a line plot.		
Discuss graphs found in everyday publications.		
Explore range, median, mode and mean using concrete materials.		
Predict the outcome of an experiment and compare the result to the prediction.		
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).		
Explain why a game is fair or unfair.		
Develop orderly ways to determine the number of possible arrangements and combinations.		

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).	**317**	
Investigate symmetry (reflections).	**318-319**	**318**
Explore three-dimensional shapes to begin to understand volume (filling space within an object).		
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.	**350-353 89**	**350-353**
Choose appropriate measuring tools for standard or nonstandard measurements.		
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).		
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).		
Use clocks and calendars to study time to five- and one-minute intervals.		
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).		
Locate points on a coordinate grid or map.		
FUNCTION AND ALGEBRA CONCEPTS		
Recognize, describe, and extend patterns (e.g., numeric, symbolic).		
Explore patterns in odd and even numbers.		
Use manipulative materials to model skip counting patterns related to multiplication.		
Represent and analyze patterns and functions using tables (e.g., input/output boxes).		
Find missing numbers in open sentences (e.g., 2 x _ = 6).		
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.		

GRADE 3– Unit 4

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: From Paces to Feet**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).			**372**	**372**
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).				
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and write numbers up to hundred thousands.				
Explore expanded notation for large numbers.				
Count forward and backward to 100 by twos, threes, fives and tens.				
Add and subtract whole numbers, with regrouping, with and without using calculators.				
Identify the sum/difference of two whole numbers as even or odd.				
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.				

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**	**#4**
Explore multiplication and begin to learn multiplication facts.				
Explore the role of zero and one in multiplication.				
Explore division and division procedures without remainders.				
Explore the relationship between multiplication and division.				
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.				
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.				
Use the terms numerator and denominator.				
Add and subtract fractions with like denominators.				
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).				
Relate fractions and decimals to the monetary system and metric measure.				
Add and subtract decimals with one place (tenths).				
STATISTICS AND PROBABILITY CONCEPTS				
Organize data using tables, graphs and Venn diagrams.		**270-273**		
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).				
Read and interpret a line plot.	**272**	**272**		
Discuss graphs found in everyday publications.				
Explore range, median, mode and mean using concrete materials.	**286** **287** **290**			
Predict the outcome of an experiment and compare the result to the prediction.				
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).				
Explain why a game is fair or unfair.				
Develop orderly ways to determine the number of possible arrangements and combinations.				
GEOMETRY AND MEASUREMENT CONCEPTS				
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).				
Investigate symmetry (reflections).				
Explore three-dimensional shapes to begin to understand volume (filling space within an object).				
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.	**345**	**346** **347**		
Choose appropriate measuring tools for standard or nonstandard measurements.				
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).		**346** **347**		
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).				
Use clocks and calendars to study time to five- and one-minute intervals.				
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).				
Locate points on a coordinate grid or map.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, and extend patterns (e.g., numeric, symbolic).				
Explore patterns in odd and even numbers.				
Use manipulative materials to model skip counting patterns related to multiplication.				
Represent and analyze patterns and functions using tables (e.g., input/output boxes).				
Find missing numbers in open sentences (e.g., 2 x _ = 6).				
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.				

GRADE 3– Unit 5

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Landmarks in the Hundreds**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).			
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and write numbers up to hundred thousands.			**429**
Explore expanded notation for large numbers.			
Count forward and backward to 100 by twos, threes, fives and tens.	**118** **428**		
Add and subtract whole numbers, with regrouping, with and without using calculators.			
Identify the sum/difference of two whole numbers as even or odd.			
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.			
Explore multiplication and begin to learn multiplication facts.	**88, 89**	**62, 76, 88, 89**	
Explore the role of zero and one in multiplication.			
Explore division and division procedures without remainders.			
Explore the relationship between multiplication and division.			
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.			
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.			
Use the terms numerator and denominator.			
Add and subtract fractions with like denominators.			
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).			
Relate fractions and decimals to the monetary system and metric measure.	**17-19**	**17-19**	
Add and subtract decimals with one place (tenths).			
STATISTICS AND PROBABILITY CONCEPTS			
Organize data using tables, graphs and Venn diagrams.			
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).			
Read and interpret a line plot.			
Discuss graphs found in everyday publications.			
Explore range, median, mode and mean using concrete materials.			
Predict the outcome of an experiment and compare the result to the prediction.			
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).			
Explain why a game is fair or unfair.			
Develop orderly ways to determine the number of possible arrangements and combinations.			

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).			
Investigate symmetry (reflections).			
Explore three-dimensional shapes to begin to understand volume (filling space within an object).			
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.			
Choose appropriate measuring tools for standard or nonstandard measurements.			
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).			
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).			
Use clocks and calendars to study time to five- and one-minute intervals.			
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).			
Locate points on a coordinate grid or map.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, and extend patterns (e.g., numeric, symbolic).			
Explore patterns in odd and even numbers.			
Use manipulative materials to model skip counting patterns related to multiplication.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes).			
Find missing numbers in open sentences (e.g., 2 x _ = 6).			
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.			

GRADE 3– Unit 6

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Up and Down the Number Line**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).			
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and write numbers up to hundred thousands.			
Explore expanded notation for large numbers.			
Count forward and backward to 100 by twos, threes, fives and tens.			
Add and subtract whole numbers, with regrouping, with and without using calculators.			
Identify the sum/difference of two whole numbers as even or odd.			
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.			

ARITHMETIC AND NUMBER CONCEPTS (continued)(	**#1**	**#2**	**#3**
Explore multiplication and begin to learn multiplication facts.			
Explore the role of zero and one in multiplication.			
Explore division and division procedures without remainders.			
Explore the relationship between multiplication and division.			
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.	**238** **239**	**238** **239**	**238** **239**
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.			
Use the terms numerator and denominator.			
Add and subtract fractions with like denominators.			
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).			
Relate fractions and decimals to the monetary system and metric measure.			
Add and subtract decimals with one place (tenths).			
STATISTICS AND PROBABILITY CONCEPTS			
Organize data using tables, graphs and Venn diagrams.		**280** **281**	
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).			
Read and interpret a line plot.			
Discuss graphs found in everyday publications.			
Explore range, median, mode and mean using concrete materials.			
Predict the outcome of an experiment and compare the result to the prediction.			
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).			
Explain why a game is fair or unfair.			
Develop orderly ways to determine the number of possible arrangements and combinations.			
GEOMETRY AND MEASUREMENT CONCEPTS			
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).			
Investigate symmetry (reflections).			
Explore three-dimensional shapes to begin to understand volume (filling space within an object).			
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.			
Choose appropriate measuring tools for standard or nonstandard measurements.			
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).			
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).			
Use clocks and calendars to study time to five- and one-minute intervals.			
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).			
Locate points on a coordinate grid or map.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, and extend patterns (e.g., numeric, symbolic).			
Explore patterns in odd and even numbers.			
Use manipulative materials to model skip counting patterns related to multiplication.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes).			
Find missing numbers in open sentences (e.g., 2 x _ = 6).			
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.			

GRADE 3– Unit 7

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Combining and Comparing**	**#1**	**#2**	**#3**	**#4**	**#5**
MATHEMATICAL PROCESS					
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).					
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.					
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).					
ARITHMETIC AND NUMBER CONCEPTS					
Use knowledge of place value to read and write numbers up to hundred thousands.					
Explore expanded notation for large numbers.					
Count forward and backward to 100 by twos, threes, fives and tens.					
Add and subtract whole numbers, with regrouping, with and without using calculators.	**102-111** **112-117** **144-153** **159-167**	**102-111** **112-117** **144-153** **159-167**	**102-111** **112-117** **144-153** **159-167**	**102-111** **112-117** **144-153** **159-167**	
Identify the sum/difference of two whole numbers as even or odd.					
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.			**128-130** **132-133**		
Explore multiplication and begin to learn multiplication facts.					
Explore the role of zero and one in multiplication.					
Explore division and division procedures without remainders.					
Explore the relationship between multiplication and division.					
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.					
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.					
Use the terms numerator and denominator.					
Add and subtract fractions with like denominators.					
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).					
Relate fractions and decimals to the monetary system and metric measure.					
Add and subtract decimals with one place (tenths).					
STATISTICS AND PROBABILITY CONCEPTS					
Organize data using tables, graphs and Venn diagrams.				**264-268**	
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).					
Read and interpret a line plot.				**272**	
Discuss graphs found in everyday publications.					
Explore range, median, mode and mean using concrete materials.					
Predict the outcome of an experiment and compare the result to the prediction.					
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).					
Explain why a game is fair or unfair.					
Develop orderly ways to determine the number of possible arrangements and combinations.					

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**	**#5**
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).					
Investigate symmetry (reflections).					
Explore three-dimensional shapes to begin to understand volume (filling space within an object).					
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.			**345, 346 420, 421**		
Choose appropriate measuring tools for standard or nonstandard measurements.		**358 424**			
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).			**346**		
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).					
Use clocks and calendars to study time to five- and one-minute intervals.			**334-339**		**341-344**
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).					
Locate points on a coordinate grid or map.					
FUNCTION AND ALGEBRA CONCEPTS					
Recognize, describe, and extend patterns (e.g., numeric, symbolic).					
Explore patterns in odd and even numbers.					
Use manipulative materials to model skip counting patterns related to multiplication.					
Represent and analyze patterns and functions using tables (e.g., input/output boxes).					
Find missing numbers in open sentences (e.g., 2 x _ = 6).					
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.					

GRADE 3– Unit 8

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Turtle Paths**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).	**387**		
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and write numbers up to hundred thousands.			
Explore expanded notation for large numbers.			
Count forward and backward to 100 by twos, threes, fives and tens.			
Add and subtract whole numbers, with regrouping, with and without using calculators.			
Identify the sum/difference of two whole numbers as even or odd.			
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.			

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**
Explore multiplication and begin to learn multiplication facts.			
Explore the role of zero and one in multiplication.			
Explore division and division procedures without remainders.			
Explore the relationship between multiplication and division.			
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.			
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.			
Use the terms numerator and denominator.			
Add and subtract fractions with like denominators.			
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).			
Relate fractions and decimals to the monetary system and metric measure.			
Add and subtract decimals with one place (tenths).			
STATISTICS AND PROBABILITY CONCEPTS			
Organize data using tables, graphs and Venn diagrams.			
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).			
Read and interpret a line plot.			
Discuss graphs found in everyday publications.			
Explore range, median, mode and mean using concrete materials.			
Predict the outcome of an experiment and compare the result to the prediction.			
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).			
Explain why a game is fair or unfair.			
Develop orderly ways to determine the number of possible arrangements and combinations.			
GEOMETRY AND MEASUREMENT CONCEPTS			
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).	**310**	**306,307 314,315 319**	**308,312 313**
Investigate symmetry (reflections).			
Explore three-dimensional shapes to begin to understand volume (filling space within an object).			
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.			**348 349**
Choose appropriate measuring tools for standard or nonstandard measurements.			
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).			
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).			
Use clocks and calendars to study time to five- and one-minute intervals.			
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).			
Locate points on a coordinate grid or map.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, and extend patterns (e.g., numeric, symbolic).			
Explore patterns in odd and even numbers.			
Use manipulative materials to model skip counting patterns related to multiplication.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes).			
Find missing numbers in open sentences (e.g., 2 x _ = 6).			
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.			

GRADE 3– Unit 9

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Fair Shares**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).			
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).			**419**
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and write numbers up to hundred thousands.			
Explore expanded notation for large numbers.			
Count forward and backward to 100 by twos, threes, fives and tens.			
Add and subtract whole numbers, with regrouping, with and without using calculators.			
Identify the sum/difference of two whole numbers as even or odd.			
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.			
Explore multiplication and begin to learn multiplication facts.			
Explore the role of zero and one in multiplication.			
Explore division and division procedures without remainders.			**196**
Explore the relationship between multiplication and division.			
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.			
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.	**210,213 216,220**	**220-226**	**214**
Use the terms numerator and denominator.	**210**		
Add and subtract fractions with like denominators.		**227-235**	
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).			**30**
Relate fractions and decimals to the monetary system and metric measure.			
Add and subtract decimals with one place (tenths).			
STATISTICS AND PROBABILITY CONCEPTS			
Organize data using tables, graphs and Venn diagrams.			
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).			
Read and interpret a line plot.			
Discuss graphs found in everyday publications.			
Explore range, median, mode and mean using concrete materials.			
Predict the outcome of an experiment and compare the result to the prediction.			
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).			
Explain why a game is fair or unfair.			
Develop orderly ways to determine the number of possible arrangements and combinations.			

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).			
Investigate symmetry (reflections).			
Explore three-dimensional shapes to begin to understand volume (filling space within an object).			
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.			
Choose appropriate measuring tools for standard or nonstandard measurements.			
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).			
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).			
Use clocks and calendars to study time to five- and one-minute intervals.			
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).			
Locate points on a coordinate grid or map.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, and extend patterns (e.g., numeric, symbolic).			
Explore patterns in odd and even numbers.			
Use manipulative materials to model skip counting patterns related to multiplication.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes).			
Find missing numbers in open sentences (e.g., 2 x _ = 6).			
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.			

GRADE 3– Unit 10

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Exploring Solids and Boxes**	**#1**	**#2**	**#3**	**#4**	**#5**
MATHEMATICAL PROCESS					
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solution (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).			**387**		**376,377 400**
Work individually and collaboratively to discuss, justify, organize, and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**	**412**	**412**
Recognize the use of mathematics in other subject areas such as science, social studies, and music.					
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers – metric and U.S. Standard, thermometers, and tape measures).					
ARITHMETIC AND NUMBER CONCEPTS					
Use knowledge of place value to read and write numbers up to hundred thousands.					
Explore expanded notation for large numbers.					
Count forward and backward to 100 by twos, threes, fives and tens.					
Add and subtract whole numbers, with regrouping, with and without using calculators.					
Identify the sum/difference of two whole numbers as even or odd.					
Estimate numbers by rounding using number lines, thermometers, and/or yardsticks.					

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**	**#4**	**#5**
Explore multiplication and begin to learn multiplication facts.					
Explore the role of zero and one in multiplication.					
Explore division and division procedures without remainders.					
Explore the relationship between multiplication and division.					
Learn about positive and negative numbers as they relate to the number line and measurement of temperature.					
Explore comparing fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/12) using <, > and = symbols.					
Use the terms numerator and denominator.					
Add and subtract fractions with like denominators.					
Understand the relationship between fractions and decimals (e.g., 1/4 = .25, 1/10 = 0.1).					
Relate fractions and decimals to the monetary system and metric measure.					
Add and subtract decimals with one place (tenths).					
STATISTICS AND PROBABILITY CONCEPTS					
Organize data using tables, graphs and Venn diagrams.	**269**				
Interpret and identify the parts of a bar graph (e.g., title, vertical and horizontal axes, bars, labels).					
Read and interpret a line plot.					
Discuss graphs found in everyday publications.					
Explore range, median, mode and mean using concrete materials.					
Predict the outcome of an experiment and compare the result to the prediction.					
Understand and use fractional notation to show the probability of the outcome of an experiment (e.g., one out of three chances of making a specific selection is the same as the fraction 1/3).					
Explain why a game is fair or unfair.					
Develop orderly ways to determine the number of possible arrangements and combinations.					
GEOMETRY AND MEASUREMENT CONCEPTS					
Investigate and classify properties of two- and three-dimensional shapes such as squares, rectangles, triangles, circles, cubes, prisms, cylinders, and pyramids noting similarities and differences (e.g., similar and congruent figures).	**326-329**	**310,311 327,330 331**	**330 331**	**330**	
Investigate symmetry (reflections).					
Explore three-dimensional shapes to begin to understand volume (filling space within an object).				**354 355**	**354 355**
Through concrete experiences, estimate and measure length, width, perimeter, and area of objects using metric and customary (U.S. Standard) tools.					
Choose appropriate measuring tools for standard or nonstandard measurements.					
Identify equivalent measures within a system (e.g., 12 inches = 1 foot and 100 centimeters = 1 meter).					
Relate the clock to fractions of a circle (1/2 is equivalent to 30 minutes, 1/4 is equivalent to 15 minutes).					
Use clocks and calendars to study time to five- and one-minute intervals.					
Estimate benchmark temperatures in Celsius and Fahrenheit (e.g., room temperature, body temperature, freezing point, boiling point).					
Locate points on a coordinate grid or map.					
FUNCTION AND ALGEBRA CONCEPTS					
Recognize, describe, and extend patterns (e.g., numeric, symbolic).					
Explore patterns in odd and even numbers.					
Use manipulative materials to model skip counting patterns related to multiplication.					
Represent and analyze patterns and functions using tables (e.g., input/output boxes).					
Find missing numbers in open sentences (e.g., 2 x _ = 6).					
Use manipulative materials to model the associative [e.g., (3+4)+6 = 13 and 3+(4+6) = 13] and commutative (e.g., 5+3 = 8 and 3+5 = 8) properties of addition and multiplication.					

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GRADE 4 – Unit 1

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Mathematical Thinking at Grade 4**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.				**374**
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).	**414** **415**	**416**	**415**	
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and which numbers up to hundred millions.	**1–5**	**17-19**		
Add and subtract whole numbers with regrouping, with and without calculators.	**132-135** **146-153**	**108**	**104,105** **112,117** **415**	
Multiply and divide whole numbers with and without calculators.	**120** **121**			
Know multiplication and division facts through one hundred forty-four.				
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.				
Learn about primes, factors, multiples and square numbers.				
Explore division and division procedures with remainders.				
Demonstrate rounding and estimating skills.	**128-130** **132-135**			
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.				
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.				
Compare and identify equivalent fractions (e.g., 2/4=1/2).				
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).				
Add and subtract decimals with two places (hundredths)				
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.				
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).				

STATISTICS AND PROBABILITY CONCEPTS	**#1**	**#2**	**#3**	**#4**
Collect data to answer a question or test a hypothesis				
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.				
Read and interpret a line graph.				
Find range, median, mode, and mean using a collection of data.				
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.				
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.				
Determine probabilities of simple events in real-world situations.				
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.				
GEOMETRY AND MEASUREMENT CONCEPTS				
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges, angles, parallel, perpendicular, congruency, and lines of symmetry.				**318 322 323**
Explore the properties of circles, including diameter, radius and circumference.				
Explore the use of formulas to find the area and volume.	**352 354-355**			
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.				
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.				
Read and draw simple maps using coordinates.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, extend, and create numeric and geometric patterns.				
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)				
Begin to develop the concept of a variable.				
Use letters, boxes, or other symbols to stand for any number or object.				
Find missing number in a open sentence (e.g., 7 X_____ =56).				

GRADE 4 – Unit 2

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Arrays and Shares**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.			
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).			
Use knowledge of place value to read and which numbers up to hundred millions.			

ARITHMETIC AND NUMBER CONCEPTS	**#1**	**#2**	**#3**
Add and subtract whole numbers with regrouping, with and without calculators.			
Multiply and divide whole numbers with and without calculators.	**62,64 76**	**62,76 77,94 95**	**60-62 74-76 118-124**
Know multiplication and division facts through one hundred forty-four.	**61 68-73**	**64-65**	
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.			
Learn about primes, factors, multiples and square numbers.		**89,92**	
Explore division and division procedures with remainders.			
Demonstrate rounding and estimating skills.			
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.			
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.			
Compare and identify equivalent fractions (e.g., 2/4=1/2).			
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).			
Add and subtract decimals with two places (hundredths)			
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.			
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).			
STATISTICS AND PROBABILITY CONCEPTS			
Collect data to answer a question or test a hypothesis			
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.			
Read and interpret a line graph.			
Find range, median, mode, and mean using a collection of data.			
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.			
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.			
Determine probabilities of simple events in real-world situations.			
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.			
GEOMETRY AND MEASUREMENT CONCEPTS			
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges,angles, parallel, perpendicular, congruency, and lines of symmetry.			
Explore the properties of circles, including diameter, radius and circumference.			
Explore the use of formulas to find the area and volume.			
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.			
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.			
Read and draw simple maps using coordinates.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, extend, and create numeric and geometric patterns.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)			
Begin to develop the concept of a variable.			
Use letters, boxes, or other symbols to stand for any number or object.			
Find missing number in a open sentence (e.g., 7 X_____ =56).			

GRADE 4 – Unit 3

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Seeing Solids and Silhouettes**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.			**400**	**400**
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).				
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and which numbers up to hundred millions.				
Add and subtract whole numbers with regrouping, with and without calculators.				
Multiply and divide whole numbers with and without calculators.				
Know multiplication and division facts through one hundred forty-four.				
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.				
Learn about primes, factors, multiples and square numbers.				
Explore division and division procedures with remainders.				
Demonstrate rounding and estimating skills.				
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.				
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.				
Compare and identify equivalent fractions (e.g., 2/4=1/2).				
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).				
Add and subtract decimals with two places (hundredths)				
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.				
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).				
STATISTICS AND PROBABILITY CONCEPTS				
Collect data to answer a question or test a hypothesis				
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.				
Read and interpret a line graph.				
Find range, median, mode, and mean using a collection of data.				
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.				
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.				
Determine probabilities of simple events in real-world situations.				
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.				

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges, angles, parallel, perpendicular, congruency, and lines of symmetry.	**326 327**	**328-330**		
Explore the properties of circles, including diameter, radius and circumference.				
Explore the use of formulas to find the area and volume.				
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.				
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.				
Read and draw simple maps using coordinates.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, extend, and create numeric and geometric patterns.				
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)				
Begin to develop the concept of a variable.				
Use letters, boxes, or other symbols to stand for any number or object.				
Find missing number in a open sentence (e.g., 7 X_____ =56).				

GRADE 4 – Unit 4

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Landmarks in the Thousands**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.				
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).				
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and which numbers up to hundred millions.	**3–5**	**429**	**6**	**6–8**
Add and subtract whole numbers with regrouping, with and without calculators.	**104,113 114**	**102-127**	**102-127**	
Multiply and divide whole numbers with and without calculators.				
Know multiplication and division facts through one hundred forty-four.				
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.				
Learn about primes, factors, multiples and square numbers.	**64,89**	**64**		
Explore division and division procedures with remainders.				
Demonstrate rounding and estimating skills.				
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.				
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.				
Compare and identify equivalent fractions (e.g., 2/4=1/2).				

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**	**#4**
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).				
Add and subtract decimals with two places (hundredths)				
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.				
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).				
STATISTICS AND PROBABILITY CONCEPTS				
Collect data to answer a question or test a hypothesis				
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.				
Read and interpret a line graph.				
Find range, median, mode, and mean using a collection of data.				
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.				
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.				
Determine probabilities of simple events in real-world situations.				
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.				
GEOMETRY AND MEASUREMENT CONCEPTS				
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges, angles, parallel, perpendicular, congruency, and lines of symmetry.				
Explore the properties of circles, including diameter, radius and circumference.				
Explore the use of formulas to find the area and volume.				
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.				
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.				
Read and draw simple maps using coordinates.				
FUNCTION AND ALGEBRA CONCEPTS				
Recognize, describe, extend, and create numeric and geometric patterns.				
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)				
Begin to develop the concept of a variable.				
Use letters, boxes, or other symbols to stand for any number or object.				
Find missing number in a open sentence (e.g., 7 X_____ =56).				

GRADE 4 – Unit 5

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Different Shapes, Equal Pieces**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.			
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and which numbers up to hundred millions.			
Add and subtract whole numbers with regrouping, with and without calculators.			
Multiply and divide whole numbers with and without calculators.			
Know multiplication and division facts through one hundred forty-four.			
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.			
Learn about primes, factors, multiples and square numbers.			
Explore division and division procedures with remainders.			
Demonstrate rounding and estimating skills.			
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.	**210-214**	**210-214**	**141,214** **216-219** **224-226**
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.			
Compare and identify equivalent fractions (e.g., 2/4=1/2).			**220-223**
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).			
Add and subtract decimals with two places (hundredths)			
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.			
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).			
STATISTICS AND PROBABILITY CONCEPTS			
Collect data to answer a question or test a hypothesis			
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.			
Read and interpret a line graph.			
Find range, median, mode, and mean using a collection of data.			
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.			
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.			
Determine probabilities of simple events in real-world situations.			
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.			

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges,angles, parallel, perpendicular, congruency, and lines of symmetry.	**317**	**317**	
Explore the properties of circles, including diameter, radius and circumference.			
Explore the use of formulas to find the area and volume.			
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.			
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.	**350-353**	**350-353**	
Read and draw simple maps using coordinates.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, extend, and create numeric and geometric patterns.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)			
Begin to develop the concept of a variable.			
Use letters, boxes, or other symbols to stand for any number or object.			
Find missing number in a open sentence (e.g., 7 X_____ =56).			

GRADE 4 – Unit 6

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: The Shape of the Data**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.			
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and which numbers up to hundred millions.			
Add and subtract whole numbers with regrouping, with and without calculators.			
Multiply and divide whole numbers with and without calculators.			
Know multiplication and division facts through one hundred forty-four.			
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.			
Learn about primes, factors, multiples and square numbers.			
Explore division and division procedures with remainders.			
Demonstrate rounding and estimating skills.			
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.			
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.			
Compare and identify equivalent fractions (e.g., 2/4=1/2).			
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).			

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**
Add and subtract decimals with two places (hundredths)			
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.			
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).			
STATISTICS AND PROBABILITY CONCEPTS			
Collect data to answer a question or test a hypothesis	**266-268**		**266-268**
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.	**270-277**		**270-277**
Read and interpret a line graph.			
Find range, median, mode, and mean using a collection of data.	**286 287**	**286 287**	
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.			
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.			
Determine probabilities of simple events in real-world situations.			
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.			
GEOMETRY AND MEASUREMENT CONCEPTS			
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges,angles, parallel, perpendicular, congruency, and lines of symmetry.			
Explore the properties of circles, including diameter, radius and circumference.			
Explore the use of formulas to find the area and volume.			
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.			
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.			
Read and draw simple maps using coordinates.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, extend, and create numeric and geometric patterns.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)			
Begin to develop the concept of a variable.			
Use letters, boxes, or other symbols to stand for any number or object.			
Find missing number in a open sentence (e.g., 7 X_____ =56).			

GRADE 4 – Unit 7

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Money, Miles, and Large Numbers**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.			
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).	**414-416**		
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and which numbers up to hundred millions.	**17-19**		
Add and subtract whole numbers with regrouping, with and without calculators.	**32-59** **144-153**		**32-59** **144-153** **159-167**
Multiply and divide whole numbers with and without calculators.			
Know multiplication and division facts through one hundred forty-four.			
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.			
Learn about primes, factors, multiples and square numbers.			
Explore division and division procedures with remainders.			
Demonstrate rounding and estimating skills.	**128-129** **131** **132-135**	**128-129** **131** **132-135**	
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.			
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.		**22-29**	
Compare and identify equivalent fractions (e.g., 2/4=1/2).			
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).			
Add and subtract decimals with two places (hundredths)	**20,21,** **158,171**	**154-158** **168-171**	
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.			
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).		**30**	
STATISTICS AND PROBABILITY CONCEPTS			
Collect data to answer a question or test a hypothesis			
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.			
Read and interpret a line graph.			
Find range, median, mode, and mean using a collection of data.			
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.			
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.			
Determine probabilities of simple events in real-world situations.			
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.			

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges, angles, parallel, perpendicular, congruency, and lines of symmetry.			
Explore the properties of circles, including diameter, radius and circumference.			
Explore the use of formulas to find the area and volume.			
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.			
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.		**436**	**436**
Read and draw simple maps using coordinates.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, extend, and create numeric and geometric patterns.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)			
Begin to develop the concept of a variable.			
Use letters, boxes, or other symbols to stand for any number or object.			
Find missing number in a open sentence (e.g., 7 X_____ =56).			

GRADE 4 – Unit 8

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Changes Over Time**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.			
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and which numbers up to hundred millions.			
Add and subtract whole numbers with regrouping, with and without calculators.			
Multiply and divide whole numbers with and without calculators.			
Know multiplication and division facts through one hundred forty-four.			
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.			
Learn about primes, factors, multiples and square numbers.			
Explore division and division procedures with remainders.			
Demonstrate rounding and estimating skills.			
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.			
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.			
Compare and identify equivalent fractions (e.g., 2/4=1/2).			

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**	**#3**
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).			
Add and subtract decimals with two places (hundredths)			
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.			
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).			
STATISTICS AND PROBABILITY CONCEPTS			
Collect data to answer a question or test a hypothesis			
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.	266,270 273,274 275		
Read and interpret a line graph.		280,281	280,281
Find range, median, mode, and mean using a collection of data.			
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.			
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.			
Determine probabilities of simple events in real-world situations.			
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.			
GEOMETRY AND MEASUREMENT CONCEPTS			
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges, angles, parallel, perpendicular, congruency, and lines of symmetry.			
Explore the properties of circles, including diameter, radius and circumference.			
Explore the use of formulas to find the area and volume.			
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.			
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.			
Read and draw simple maps using coordinates.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, extend, and create numeric and geometric patterns.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)			
Begin to develop the concept of a variable.			
Use letters, boxes, or other symbols to stand for any number or object.			
Find missing number in a open sentence (e.g., 7 X_____ =56).			

GRADE 4 – Unit 9

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Packages and Groups**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.			
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and which numbers up to hundred millions.			
Add and subtract whole numbers with regrouping, with and without calculators.			
Multiply and divide whole numbers with and without calculators.		**123** **172-178** **180-183**	
Know multiplication and division facts through one hundred forty-four.			
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.	**60-73**		
Learn about primes, factors, multiples and square numbers.			
Explore division and division procedures with remainders.	**88,89**		**89,90**
Demonstrate rounding and estimating skills.			**74-85**
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.		**136-138**	**136-138**
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.			
Compare and identify equivalent fractions (e.g., 2/4=1/2).			
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).			
Add and subtract decimals with two places (hundredths)			
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25			
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).			
STATISTICS AND PROBABILITY CONCEPTS			
Collect data to answer a question or test a hypothesis			
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.			
Read and interpret a line graph.			
Find range, median, mode, and mean using a collection of data.			
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.			
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.			
Determine probabilities of simple events in real-world situations.			
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.			

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges, angles, parallel, perpendicular, congruency, and lines of symmetry.			
Explore the properties of circles, including diameter, radius and circumference.			
Explore the use of formulas to find the area and volume.			
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.			
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.			
Read and draw simple maps using coordinates.			
FUNCTION AND ALGEBRA CONCEPTS			
Recognize, describe, extend, and create numeric and geometric patterns.			
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)			
Begin to develop the concept of a variable.			
Use letters, boxes, or other symbols to stand for any number or object.			
Find missing number in a open sentence (e.g., 7 X_____ =56).			

GRADE 4 – Unit 10

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Sunken Ships and Grid Patterns**	**#1**	**#2**
MATHEMATICAL PROCESS		
Understand word problems, identifying pertinent, extraneous, and missing information.	**364-400**	**364-400**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.		
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.	**412**	**412**
Explain how solutions to problems can be applied to other school subjects and in real-world situations.		
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).		
ARITHMETIC AND NUMBER CONCEPTS		
Use knowledge of place value to read and which numbers up to hundred millions.		
Add and subtract whole numbers with regrouping, with and without calculators.		
Multiply and divide whole numbers with and without calculators.		
Know multiplication and division facts through one hundred forty-four.		
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.		
Learn about primes, factors, multiples and square numbers.		
Explore division and division procedures with remainders.		
Demonstrate rounding and estimating skills.		
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.		
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.		
Compare and identify equivalent fractions (e.g., 2/4=1/2).		
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).		

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**
Add and subtract decimals with two places (hundredths)		
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.		
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).		
STATISTICS AND PROBABILITY CONCEPTS		
Collect data to answer a question or test a hypothesis		
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.		
Read and interpret a line graph.		
Find range, median, mode, and mean using a collection of data.		
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.		
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.		
Determine probabilities of simple events in real-world situations.		
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.		
GEOMETRY AND MEASUREMENT CONCEPTS		
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges, angles, parallel, perpendicular, congruency, and lines of symmetry.		**306,307 312,313 319,322 323**
Explore the properties of circles, including diameter, radius and circumference.		
Explore the use of formulas to find the area and volume.		
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.		
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.		
Read and draw simple maps using coordinates.	**258,259**	**258,259**
FUNCTION AND ALGEBRA CONCEPTS		
Recognize, describe, extend, and create numeric and geometric patterns.		
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)		
Begin to develop the concept of a variable.		
Use letters, boxes, or other symbols to stand for any number or object.		
Find missing number in a open sentence (e.g., 7 X_____ =56).		

GRADE 4 – Unit 11

Correlation to *Math to Know, A Mathematics Handbook* **INVESTIGATION SEQUENCE: Three out of Four Like Spaghetti**	**#1**	**#2**
MATHEMATICAL PROCESS		
Understand word problems, identifying pertinent, extraneous, and missing information.		
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation.		
Work individually and collaboratively to discuss, justify, organize and write about solutions to problems using content specific mathematical language.		
Explain how solutions to problems can be applied to other school subjects and in real-world situations.		
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).		
ARITHMETIC AND NUMBER CONCEPTS		
Use knowledge of place value to read and which numbers up to hundred millions.		
Add and subtract whole numbers with regrouping, with and without calculators.		
Multiply and divide whole numbers with and without calculators.		
Know multiplication and division facts through one hundred forty-four.		
Learn about the associative (e.g., 3x(4x5)=60 and (3x4) X5=60 and commutative (e.g., 6x7=42 and 7x6=42) proper ties of multiplication.		
Learn about primes, factors, multiples and square numbers.		
Explore division and division procedures with remainders.		
Demonstrate rounding and estimating skills.	**141**	
Compare fractions (e.g., 1/2, 1/3, 1/4, 1/5, 1/6, 1/8, 1/10, 1/120, using <,> and = symbols.	**210-215** **224-226**	
Compare decimals (e.g., 0.10, 0.20, 0.25, 0.75) using <,>, and = symbols.		
Compare and identify equivalent fractions (e.g., 2/4=1/2).	**220**	
Identify use of fractions and decimals in daily life (e.g., 75=$.75=3/4 of a dollar).		
Add and subtract decimals with two places (hundredths)		
Learn about percents as part of one hundred (e.g., twenty-five out of one hundred is the same as 25%.		
Compare relationships between fractions, decimals, and percents as they relate to daily life, (e.g., Ten students were asked to name their favorite sport,1/2 chose soccer=0.5 chose soccer=50% chose soccer).		
STATISTICS AND PROBABILITY CONCEPTS		
Collect data to answer a question or test a hypothesis	**266**	**264-275**
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.		
Read and interpret a line graph.		
Find range, median, mode, and mean using a collection of data.		
Explore real-world polls such as TV ratings and opinion polls in order to understand random sampling.		
Predict results and find out why some results are more likely than others, less likely than others or equally as likely as others.		
Determine probabilities of simple events in real-world situations.		
Display orderly ways to determine the number of possible arrangements and combinations using models, pictures, lists.		

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**
Identify and classify properties of two- and three- dimensional shapes, including vertices, line segments, edges, angles, parallel, perpendicular, congruency, and lines of symmetry.		
Explore the properties of circles, including diameter, radius and circumference.		
Explore the use of formulas to find the area and volume.		
Select units of measure (pounds, inches, minutes, and degrees) for estimating and determining quantities such as weight, area, time, and temperature.		
Estimate, measure, and represent length, width, perimeter, and area of objects in the real world.		
Read and draw simple maps using coordinates.		
FUNCTION AND ALGEBRA CONCEPTS		
Recognize, describe, extend, and create numeric and geometric patterns.		
Represent and analyze patterns and functions using tables (e.g., input/output boxes, function tables)		
Begin to develop the concept of a variable.		
Use letters, boxes, or other symbols to stand for any number or object.		
Find missing number in a open sentence (e.g., 7 X_____ =56).		

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GRADE 5 – Unit 1

Correlation to *Math at Hand: A Mathematics Handbook* INVESTIGATION SEQUENCE: Mathematical Thinking at Grade 5	#1	#2	#3	#4
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	**393-418**			
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).	**412**			
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	**438**			
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.				
Recognize the use of mathematics in other subject areas such as science, social studies, and music.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).				
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and write numbers up to one billion.	**001-010**		**001-010**	**001-010**
Use addition, subtraction, multiplication, and division facts efficiently and accurately.		**062**	**083-092**	**073-082** **119-124** **129-133**
Explore powers of ten as another way of naming numbers.				
Identify differences between prime and composite numbers.	**050-055** **063,067**	**050-055** **063,067**	**050,051**	
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.				
Explore adding and subtracting integers using the number line (positive and negative numbers).				
Understand the concept of proper and improper fractions.				
Develop skill of changing improper fractions to equivalent mixed numbers.				
Find the greatest common factor and least common multiple of a set of numbers.	**059**	**059**		
Add and subtract fractions with unlike denominators.				
Multiply decimals to the hundredths place.				
Explore dividing decimals without remainders (to hundredths).				
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).				
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).				
Compare decimals and fractions using the terms less than greater than, between, and equivalent				

STATISTICS AND PROBABILITY CONCEPTS	**#1**	**#2**	**#3**	**#4**
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.				
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.		**281,282**		
Read and interpret double bar graphs and circle graphs.				
Use circle graphs to explore the concept of percent.				
Select, compare, and use appropriate. Graphs to represent data.				
Understand and identify differences among mean, median, mode, and range.				
Predict, represent, and explain probability using fractions, ratio, and percents.				
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).				
Examine random and unbiased samples such as market surveys.				
GEOMETRY AND MEASUREMENT CONCEPTS				
Represent and create models of two- and three- dimensional shapes including cubes and prisms.	**365**			
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.				
Develop formulas for the area and perimeter of rectangles and squares.				
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.	**299** **301**			
Explore the relationships among diameter, radius, and circumference of circles.				
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.				
Estimate and measure length,, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.				
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).				
Use centimeter graph paper to explore scale drawings and relate scale to ratio.				
FUNCTION AND ALGEBRA CONCEPTS				
Use patterns and functions to represent and solve problems.				
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)				
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.				
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).				

GRADE 5 – Unit 2

Correlation to *Math at Hand: A Mathematics Handbook* **INVESTIGATION SEQUENCE: Picturing Polygons**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**393-418**	**393-418**	**393-418**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).	**412**		
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	**438**		
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.			
Recognize the use of mathematics in other subject areas such as science, social studies, and music.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and write numbers up to one billion.			
Use addition, subtraction, multiplication, and division facts efficiently and accurately.			
Explore powers of ten as another way of naming numbers.			
Identify differences between prime and composite numbers.			
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.			
Explore adding and subtracting integers using the number line (positive and negative numbers).			
Understand the concept of proper and improper fractions.			
Develop skill of changing improper fractions to equivalent mixed numbers.			
Find the greatest common factor and least common multiple of a set of numbers.			
Add and subtract fractions with unlike denominators.			
Multiply decimals to the hundredths place.			
Explore dividing decimals without remainders (to hundredths).			
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).			
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).			
Compare decimals and fractions using the terms less than greater than, between, and equivalent			
STATISTICS AND PROBABILITY CONCEPTS			
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.			
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.			
Read and interpret double bar graphs and circle graphs.			
Use circle graphs to explore the concept of percent.			
Select, compare, and use appropriate. Graphs to represent data.			
Understand and identify differences among mean, median, mode, and range.			
Predict, represent, and explain probability using fractions, ratio, and percents.			
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).			
Examine random and unbiased samples such as market surveys.			

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**
Represent and create models of two- and three- dimensional shapes including cubes and prisms.	**357,358 364**	**344-347 354,358, 366**	**357**
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.			**369**
Develop formulas for the area and perimeter of rectangles and squares.			
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.			**299**
Explore the relationships among diameter, radius, and circumference of circles.			
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.			
Estimate and measure length,, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.			
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).			
Use centimeter graph paper to explore scale drawings and relate scale to ratio.			
FUNCTION AND ALGEBRA CONCEPTS			
Use patterns and functions to represent and solve problems.			**493-497**
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)			
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.			
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).			

GRADE 5 – Unit 3

Correlation to *Math at Hand: A Mathematics Handbook* **INVESTIGATION SEQUENCE: Name That Portion**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	393-418	393-418	393-418	393-418
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).				
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	438	438	438	438
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.				
Recognize the use of mathematics in other subject areas such as science, social studies, and music.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).			444	
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and write numbers up to one billion.				
Use addition, subtraction, multiplication, and division facts efficiently and accurately.				
Explore powers of ten as another way of naming numbers.				
Identify differences between prime and composite numbers.				
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.				
Explore adding and subtracting integers using the number line (positive and negative numbers).				
Understand the concept of proper and improper fractions.	028-031 033,035 038-042	028-031 034,035 038-043		
Develop skill of changing improper fractions to equivalent mixed numbers.				
Find the greatest common factor and least common multiple of a set of numbers.				
Add and subtract fractions with unlike denominators.		157-160		
Multiply decimals to the hundredths place.				
Explore dividing decimals without remainders (to hundredths).				
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).				
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).	011-020 044 098-099 189-191		011-019 035,099 483	
Compare decimals and fractions using the terms less than greater than, between, and equivalent				
STATISTICS AND PROBABILITY CONCEPTS				
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.				247-254
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.				
Read and interpret double bar graphs and circle graphs.				
Use circle graphs to explore the concept of percent.				276
Select, compare, and use appropriate. Graphs to represent data.				
Understand and identify differences among mean, median, mode, and range.				
Predict, represent, and explain probability using fractions, ratio, and percents.				
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).				
Examine random and unbiased samples such as market surveys.				

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**
Represent and create models of two- and three- dimensional shapes including cubes and prisms.				
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.				
Develop formulas for the area and perimeter of rectangles and squares.				
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.				
Explore the relationships among diameter, radius, and circumference of circles.				
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.				
Estimate and measure length,, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.				
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).				
Use centimeter graph paper to explore scale drawings and relate scale to ratio.				
FUNCTION AND ALGEBRA CONCEPTS				
Use patterns and functions to represent and solve problems.				
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)				
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.				
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).				

GRADE 5 – Unit 4

Correlation to *Math at Hand: A Mathematics Handbook* **INVESTIGATION SEQUENCE: Between Never and Always**	**#1**	**#2**
MATHEMATICAL PROCESS		
Understand word problems, identifying pertinent, extraneous, and missing information.	**393-418**	**393-418**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).		
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	**438**	**438**
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.		
Recognize the use of mathematics in other subject areas such as science, social studies, and music.		
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).		
ARITHMETIC AND NUMBER CONCEPTS		
Use knowledge of place value to read and write numbers up to one billion.		
Use addition, subtraction, multiplication, and division facts efficiently and accurately.		
Explore powers of ten as another way of naming numbers.		
Identify differences between prime and composite numbers.		
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.		
Explore adding and subtracting integers using the number line (positive and negative numbers).		

ARITHMETIC AND NUMBER CONCEPTS (continued)	**#1**	**#2**
Understand the concept of proper and improper fractions.		
Develop skill of changing improper fractions to equivalent mixed numbers.		
Find the greatest common factor and least common multiple of a set of numbers.		
Add and subtract fractions with unlike denominators.		
Multiply decimals to the hundredths place.		
Explore dividing decimals without remainders (to hundredths).		
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).		
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).	**019,020, 044, 189,190**	
Compare decimals and fractions using the terms less than greater than, between, and equivalent		
STATISTICS AND PROBABILITY CONCEPTS		
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.		
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.	**281,282**	**281,282**
Read and interpret double bar graphs and circle graphs.		
Use circle graphs to explore the concept of percent.		
Select, compare, and use appropriate. Graphs to represent data.		
Understand and identify differences among mean, median, mode, and range.		
Predict, represent, and explain probability using fractions, ratio, and percents.	**285-289**	
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).	**286**	**290-292**
Examine random and unbiased samples such as market surveys.		
GEOMETRY AND MEASUREMENT CONCEPTS		
Represent and create models of two- and three- dimensional shapes including cubes and prisms.		
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.		
Develop formulas for the area and perimeter of rectangles and squares.		
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.		
Explore the relationships among diameter, radius, and circumference of circles.		
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.		
Estimate and measure length, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.		
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).		
Use centimeter graph paper to explore scale drawings and relate scale to ratio.		
FUNCTION AND ALGEBRA CONCEPTS		
Use patterns and functions to represent and solve problems.		
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)		
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.		
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).		

GRADE 5 – Unit 5

Correlation to *Math at Hand: A Mathematics Handbook* **INVESTIGATION SEQUENCE: Building on Numbers You Know**	**#1**	**#2**	**#3**	**#4**	**#5**
MATHEMATICAL PROCESS					
Understand word problems, identifying pertinent, extraneous, and missing information.	393-418	393-418	393-418	393-418	393-418
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).					
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	438	438	438	438	438
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.					
Recognize the use of mathematics in other subject areas such as science, social studies, and music.					
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).					
ARITHMETIC AND NUMBER CONCEPTS					
Use knowledge of place value to read and write numbers up to one billion.	004,005 008,009 010			003-007	
Use addition, subtraction, multiplication, and division facts efficiently and accurately.	059 129-133	136-141 144-152	136-141 144-152		
Explore powers of ten as another way of naming numbers.					
Identify differences between prime and composite numbers.					
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.			083-092		083-092
Explore adding and subtracting integers using the number line (positive and negative numbers).					
Understand the concept of proper and improper fractions.					
Develop skill of changing improper fractions to equivalent mixed numbers.					
Find the greatest common factor and least common multiple of a set of numbers.					
Add and subtract fractions with unlike denominators.					
Multiply decimals to the hundredths place.					
Explore dividing decimals without remainders (to hundredths).					
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).					
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).					
Compare decimals and fractions using the terms less than greater than, between, and equivalent					
STATISTICS AND PROBABILITY CONCEPTS					
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.					
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.					
Read and interpret double bar graphs and circle graphs.					
Use circle graphs to explore the concept of percent.					
Select, compare, and use appropriate. Graphs to represent data.					
Understand and identify differences among mean, median, mode, and range.					
Predict, represent, and explain probability using fractions, ratio, and percents.					
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).					
Examine random and unbiased samples such as market surveys.					

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**	**#5**
Represent and create models of two- and three- dimensional shapes including cubes and prisms.					
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.					
Develop formulas for the area and perimeter of rectangles and squares.					
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.					
Explore the relationships among diameter, radius, and circumference of circles.					
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.					
Estimate and measure length,, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.					
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).					
Use centimeter graph paper to explore scale drawings and relate scale to ratio.					
FUNCTION AND ALGEBRA CONCEPTS					
Use patterns and functions to represent and solve problems.					
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)					
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.					
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).					

GRADE 5 – Unit 6

Correlation to *Math at Hand: A Mathematics Handbook* **INVESTIGATION SEQUENCE: Measurement Benchmarks**	**#1**	**#2**	**#3**
MATHEMATICAL PROCESS			
Understand word problems, identifying pertinent, extraneous, and missing information.	**393-418**	**393-418**	**393-418**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).			
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	**438**	**438**	**438**
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.			
Recognize the use of mathematics in other subject areas such as science, social studies, and music.			
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).			
ARITHMETIC AND NUMBER CONCEPTS			
Use knowledge of place value to read and write numbers up to one billion.			
Use addition, subtraction, multiplication, and division facts efficiently and accurately.			
Explore powers of ten as another way of naming numbers.			
Identify differences between prime and composite numbers.			
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.			
Explore adding and subtracting integers using the number line (positive and negative numbers).			

ARITHMETIC AND NUMBER CONCEPTS (continued)	#1	#2	#3
Understand the concept of proper and improper fractions.			
Develop skill of changing improper fractions to equivalent mixed numbers.			
Find the greatest common factor and least common multiple of a set of numbers.			
Add and subtract fractions with unlike denominators.			
Multiply decimals to the hundredths place.			
Explore dividing decimals without remainders (to hundredths).			
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).			
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).			
Compare decimals and fractions using the terms less than greater than, between, and equivalent			
STATISTICS AND PROBABILITY CONCEPTS			
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.			
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.			
Read and interpret double bar graphs and circle graphs.			
Use circle graphs to explore the concept of percent.			
Select, compare, and use appropriate. Graphs to represent data.			
Understand and identify differences among mean, median, mode, and range.			
Predict, represent, and explain probability using fractions, ratio, and percents.			
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).			
Examine random and unbiased samples such as market surveys.			
GEOMETRY AND MEASUREMENT CONCEPTS			
Represent and create models of two- and three- dimensional shapes including cubes and prisms.			
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.			
Develop formulas for the area and perimeter of rectangles and squares.			
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.			
Explore the relationships among diameter, radius, and circumference of circles.			
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.		309-311	
Estimate and measure length,, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.			
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).	294 313-318 322	313-316	
Use centimeter graph paper to explore scale drawings and relate scale to ratio.	294 313-318 322	313-316	322
FUNCTION AND ALGEBRA CONCEPTS			
Use patterns and functions to represent and solve problems.			
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)			
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.			
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).			

GRADE 5 – Unit 7

Correlation to *Math at Hand: A Mathematics Handbook* **INVESTIGATION SEQUENCE: Patterns of Change**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	393-418	393-418	393-418	393-418
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).				
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	438	438	438	438
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.				
Recognize the use of mathematics in other subject areas such as science, social studies, and music.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).				
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and write numbers up to one billion.				
Use addition, subtraction, multiplication, and division facts efficiently and accurately.				
Explore powers of ten as another way of naming numbers.				
Identify differences between prime and composite numbers.				
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.				
Explore adding and subtracting integers using the number line (positive and negative numbers).				
Understand the concept of proper and improper fractions.				
Develop skill of changing improper fractions to equivalent mixed numbers.				
Find the greatest common factor and least common multiple of a set of numbers.				
Add and subtract fractions with unlike denominators.				
Multiply decimals to the hundredths place.				
Explore dividing decimals without remainders (to hundredths).				
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).				
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).				
Compare decimals and fractions using the terms less than greater than, between, and equivalent				
STATISTICS AND PROBABILITY CONCEPTS				
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.	244,245	244,245		
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.			277,278	277-279
Read and interpret double bar graphs and circle graphs.				
Use circle graphs to explore the concept of percent.				
Select, compare, and use appropriate. Graphs to represent data.				
Understand and identify differences among mean, median, mode, and range.				
Predict, represent, and explain probability using fractions, ratio, and percents.				
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).				
Examine random and unbiased samples such as market surveys.				

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**
Represent and create models of two- and three- dimensional shapes including cubes and prisms.				
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.				
Develop formulas for the area and perimeter of rectangles and squares.				
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.				
Explore the relationships among diameter, radius, and circumference of circles.				
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.				
Estimate and measure length,, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.				
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).				
Use centimeter graph paper to explore scale drawings and relate scale to ratio.				
FUNCTION AND ALGEBRA CONCEPTS				
Use patterns and functions to represent and solve problems.	**401,402**			
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)	**493-497**			
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.				
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).				

GRADE 5 – Unit 8

Correlation to *Math at Hand: A Mathematics Handbook* **INVESTIGATION SEQUENCE: Containers and Cubes**	**#1**	**#2**	**#3**	**#4**
MATHEMATICAL PROCESS				
Understand word problems, identifying pertinent, extraneous, and missing information.	**393-418**	**393-418**	**393-418**	**393-418**
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).				
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	**438**	**438**	**438**	**438**
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.				
Recognize the use of mathematics in other subject areas such as science, social studies, and music.				
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).				
ARITHMETIC AND NUMBER CONCEPTS				
Use knowledge of place value to read and write numbers up to one billion.				
Use addition, subtraction, multiplication, and division facts efficiently and accurately.				
Explore powers of ten as another way of naming numbers.				
Identify differences between prime and composite numbers.				
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.				
Explore adding and subtracting integers using the number line (positive and negative numbers).				
Understand the concept of proper and improper fractions.				

ARITHMETIC AND NUMBER CONCEPTS (continued)	#1	#2	#3	#4
Develop skill of changing improper fractions to equivalent mixed numbers.				
Find the greatest common factor and least common multiple of a set of numbers.				
Add and subtract fractions with unlike denominators.				
Multiply decimals to the hundredths place.				
Explore dividing decimals without remainders (to hundredths).				
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).				
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).				
Compare decimals and fractions using the terms less than greater than, between, and equivalent				
STATISTICS AND PROBABILITY CONCEPTS				
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.				
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.			**282**	
Read and interpret double bar graphs and circle graphs.				
Use circle graphs to explore the concept of percent.				
Select, compare, and use appropriate. Graphs to represent data.				
Understand and identify differences among mean, median, mode, and range.				
Predict, represent, and explain probability using fractions, ratio, and percents.				
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).				
Examine random and unbiased samples such as market surveys.				
GEOMETRY AND MEASUREMENT CONCEPTS				
Represent and create models of two- and three- dimensional shapes including cubes and prisms.				**382-385 388,390**
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.				
Develop formulas for the area and perimeter of rectangles and squares.				
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.				
Explore the relationships among diameter, radius, and circumference of circles.				
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.	**309-312**	**309-312**	**309-312**	**309-312**
Estimate and measure length,, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.				
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).			**294**	
Use centimeter graph paper to explore scale drawings and relate scale to ratio.				
FUNCTION AND ALGEBRA CONCEPTS				
Use patterns and functions to represent and solve problems.				
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)				
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.				
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).				

GRADE 5 – Unit 9

Correlation to *Math at Hand: A Mathematics Handbook* **INVESTIGATION SEQUENCE: Data: Kids, Cats, and Ads**	**#1**	**#2**	**#3**	**#4**	**#5**
MATHEMATICAL PROCESS					
Understand word problems, identifying pertinent, extraneous, and missing information.	393-418	393-418	393-418	393-418	393-418
Use a variety of strategies to solve and represent problems/solutions (e.g., logical thinking, estimation, number sense, pictures, diagrams, and charts).					
Work individually and collaboratively to discuss, justify, and write about solutions to problems using content specific mathematical language.	438	438	438	438	438
Solve problems systematically and logically, and develop an awareness of when estimating is more appropriate than finding an exact answer.					
Recognize the use of mathematics in other subject areas such as science, social studies, and music.					
Explore the use of appropriate mathematical tools and technology (e.g., computers, basic four-function or fraction calculators, measuring cups, scales, and rulers-metric and U.S. Standard, thermometers, tape measures, and protractors).					
ARITHMETIC AND NUMBER CONCEPTS					
Use knowledge of place value to read and write numbers up to one billion.					
Use addition, subtraction, multiplication, and division facts efficiently and accurately.					
Explore powers of ten as another way of naming numbers.					
Identify differences between prime and composite numbers.					
Estimate whole numbers by rounding to the nearest ten thousand and decimals to the nearest hundredth.					
Explore adding and subtracting integers using the number line (positive and negative numbers).					
Understand the concept of proper and improper fractions.				028,029	
Develop skill of changing improper fractions to equivalent mixed numbers.					
Find the greatest common factor and least common multiple of a set of numbers.					
Add and subtract fractions with unlike denominators.					
Multiply decimals to the hundredths place.					
Explore dividing decimals without remainders (to hundredths).					
Relate dividing decimals to the monetary system (e.g., $4.50 divided by three).					
Compare relationships among fractions, decimals, and percents (e.g., 1/4=25/100=0.25=25%).			019,020 043,044 115,189		
Compare decimals and fractions using the terms less than greater than, between, and equivalent				038-041	
STATISTICS AND PROBABILITY CONCEPTS					
Use different ways of collecting, organizing, and displaying data, such as tally tables, graphs, and Venn diagrams.		248-254	248-254	248-254	248-254
Construct, read, and interpret line graphs, bar graphs, pictographs, and line plots.	269-273	269-273			282
Read and interpret double bar graphs and circle graphs.					276
Use circle graphs to explore the concept of percent.					
Select, compare, and use appropriate. Graphs to represent data.					
Understand and identify differences among mean, median, mode, and range.	258,261	258,261	258,261	258,261	258,261
Predict, represent, and explain probability using fractions, ratio, and percents.					
Identify events that are impossible (that have a chance or probability of happening equal to zero), events that are certain (that have a chance or probability of happening equal to one), and events that occur sometimes (expressed as a proper fraction).					
Examine random and unbiased samples such as market surveys.					

GEOMETRY AND MEASUREMENT CONCEPTS	**#1**	**#2**	**#3**	**#4**	**#5**
Represent and create models of two- and three- dimensional shapes including cubes and prisms.					
Use concrete and artistic activities to explore the concepts of similarity, symmetry, and congruence in plane geometric figures.					
Develop formulas for the area and perimeter of rectangles and squares.					
Measure area and perimeter of triangles, regular and irregular polygons by using graph paper and square tiles.					
Explore the relationships among diameter, radius, and circumference of circles.					
Investigate three-dimensional shapes to begin to develop a method for finding the volume of rectangular prisms.					
Estimate and measure length,, distance, mass, volume, and capacity in real-world situations using appropriate measuring tools, and be familiar with abbreviations such as cm, in, g, L.					
Identify equivalent units of measure (e.g., 3 meters equals 300 centimeters, 36 inches equals 1 yard, 60 seconds equals 1 minute, and 2 cups equals 1 pint).					
Use centimeter graph paper to explore scale drawings and relate scale to ratio.					
FUNCTION AND ALGEBRA CONCEPTS					
Use patterns and functions to represent and solve problems.					
Show how one quantity determines another in a functional relationship (e.g., how square numbers grow – 1,4,9,16, etc.)					
Understand that the relationship between two quantities remains the same as long as the same change is made to both quantities.					
Write and solve open sentences using letters as placeholders (e.g., 4+a=14).					

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