3rd Grade Mathematics

Unit 1 Curriculum Map:

September 8th – November 12th



ORANGE PUBLIC SCHOOLS OFFICE OF CURRICULUM AND INSTRUCTION OFFICE OF MATHEMATICS

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Unit Overview

Unit 1: Chapters 1-4

In this Unit Students will

- Round whole numbers to the nearest 10 or 100.
- Fluently add and subtract (with regrouping) two 2-digit whole numbers within 1000.
- Deconstruct word problems to determine the appropriate operation.
- Find the value of an unknown (expressed as a letter in an equation that is a representation of a two-step word problem and assess the reasonableness of the value.
- Estimate the amount of liquid/solid, using appropriate unit of measurement, based on real life applications.
- Measure the amount of liquid/solid, using appropriate unit of measurement, based on real life applications.
- Solve one step mass or volume word problems using the appropriate operation.

Essential Questions

- How is place value used to round numbers?
- How is place value used to add and subtract?
- > Why does "what" we measure influence "how" we measure?
- What units and tools are used to measure?
- How does the position of a digit in a number affect its value?
- In what ways can numbers be composed and decomposed?
- What are efficient methods for finding sums and differences?
- In what ways can items be grouped?
- > What strategies can be used to make a reasonable estimate?
- How do units within a system relate to each other?

Enduring Understandings

- Numbers can be classified by attributes
- Numbers can represent quantity, position, location, and relationships
- Counting finds out the answer to "how many" in objects/sets
- Scouping (unitizing) is a way to count, measure, and estimate
- Standard units provide common language for communication measurements
- Understanding that place value is based on groups of ten (units of ten)
- > Computation involves taking apart and combining numbers using a variety of approaches
- > Flexible methods of computation involve grouping numbers in strategic ways
- > Proficiency with basic facts aids estimation and computation of larger and smaller numbers
- > Number patterns and relationships can be represented using variables
- > Patterns can be generalized. Pattern can be found in many forms, grow, and repeat
- > Mathematical expressions represent relationships

Common Core State Standards

3.NBT.1

Unit 1:

Use place value understanding to round whole numbers to the nearest 10 or 100.

Students learn when and why to round numbers. They identify possible answers and halfway points. Then they narrow where the given number falls between the possible answers and halfway points. They also understand that by convention if a number is exactly at the halfway point of the two possible answers, the number is rounded.

Example: Mrs. Rutherford drives 158 miles on Saturday and 171 miles on Sunday. When she told her husband she estimated how many miles to the nearest 10 before adding the total. When she told her sister she estimated to the nearest 100 before adding the total. Which method provided a closer estimate?

	Fluently add and subtract within 1000 using strategies and algorithms based on
3.NBT.2	place value, properties of operations, and/or the relationship between addition and
	subtraction.

Problems should include both vertical horizontal forms, including opportunities for students to apply the commutative and associative properties. Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently. Students explain their thinking and show their work by using strategies and algorithms, and verify that their answer is reasonable.

Example: There are 178 fourth graders and 225 fifth graders on the playground. What is the total number of students on the Playground?

Student 1	Student 2	Student 3	Student 4		
100 + 200 =	I added 2 to 178	I know the 75 plus 25	178 + 225 = ?		
300	added 220 to get	equals 100. I then added 1 hundred from 178 and 2	178 + 200 = 378		
70 + 20 = 90	400. I added the	hundreds from 275. I had	378 + 20 = 398		
8 + 5 = 13	3 left over to get 403 students.	a total of 4 hundreds and I had 3 more left to add. So	398 + 3 = 403 students		
300 + 90 + 13 = 403 students		I have 4 hundreds plus 3 more which is 403			
		students.			
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.					
Students should be exposed to multiple problem-solving strategies (using any combination of words, numbers, diagrams, physical objects or symbols) and be able to choose which ones to use. When students solve word problems, they use various estimation skills which include identifying when estimation is appropriate, determining the level of accuracy needed, selecting the appropriate method of estimation, and verifying solutions or determining the reasonableness of solutions.					

Example: On a vacation, your family travels 267 miles on the first day, 194 miles on the second day and 34 miles on the third day. How many total miles did they travel?

Student 1		Student 2	Student 3		
I first thought about 267 and 34. I noticed that their sum is about 300. Then I knew that 194 is close to 200. When I put 300 and 200 together, I get 500.		I first thought about 194. It is really close to 200. I also have 2 hundreds in 267. That gives me a total of 4 hundreds. Then I have 67 in 267 and the 34. When I put 67 and 34 together that is really close to 100. When I add that hundred to the 4 hundred that I already had, I end up with 500.	I rounded 267 to 300. I rounded 194 to 200. I rounded 34 to 30. When I added 300, 200, and 30. I know my answer be about 500.		
3.MD.2 B.		nd estimate liquid volumes and m), kilograms (kg), and liters. Add a nvolving masses or volumes that ings (such as a beaker with measu	nasses of objects using standard units and subtract to solve one-step word are given in the same units, e.g. by urement scale)to represent problem.		
This standard asks for students to reason about the units of mass and volume using units g, kg, and L. Students need multiple opportunities weighing classroom objects and filling containers to help them develop a basic understanding of the size and weight of a liter, a gram, and a kilogram. Milliliters may also be used to show amounts that are less than a liter emphasizing the relationship between smaller units to larger units in the same system. Word problems should only be one-step and include the same units. Students are not expected to do conversions between units, but reason as they estimate, using benchmarks to measure weight and capacity.					
M: Major Content S: Supporting Content A: Additional Content					

MIF Lesson Structure

	LESSON STRUCTURE	RESOURCES	COMMENTS
	Chapter Opener	Teacher Materials	Recall Prior Knowledge (RPK) can take place just
	Assessing Prior Knowledge	Quick Check	before the pre-tests are given and can take 1-2
		Pretest (Assessm't Bk)	days to front load prerequisite understanding
		Recall Prior Knowledge	
	The Pre Test serves as a		Quick Check can be done in concert with the
	diagnostic test of readiness of	Student Materials	RPK and used to repair student
L.	the upcoming chapter	Student Book (Quick	misunderstandings and vocabulary prior to the
Ë		Check); Copy of the Pre	pre-test ; Students write Quick Check answers
8		Test; Recall prior	on a separate sheet of paper
-		Knowledge	
			Quick Check and the Pre Test can be done in
			the same block (See Anecdotal Checklist; Transition
			Guide)
	<u> </u>	The second second	Recall Prior Knowledge – Quick Check – Pre Test
	Direct	Teacher Edition	 The Warm Up activates prior knowledge for and any logical sectors.
	Involvement/Engagement	5-minute warm up	each new lesson
E	reachyLearn	reach; Anchor Task	 Student Books are CLOSED; Big Book is used
E I	Students are directly involved	Technology	In Gr. K
2 U	in making sense themselves	Digi	Ieacner led; Whole group
AG	of the concents – by	DIEI	 Students use concrete manipulatives to evolute concrete
SN:	interacting the tools	Other	 A few select parts of the task are explicitly.
Б	manipulatives, each other,	Fluency Practice	shown but the majority is addressed
BE	and the questions	·	through the hands-on constructivist
8	-		approach and questioning
			Teacher facilitates: Students find the
1			solution
	Guided Learning and Practice	Teacher Edition	Students-already in pairs /small, homogenous
2 P	Guided Learning	Learn	ability groups; Teacher circulates between
	-		groups; Teacher, anecdotally, captures student
G		Technology	thinking
Ž.		Digi	
Sa Sa		Student Book	
8		Guided Learning Pages	Small Group w/Teacher circulating among
8		Hands-on Activity	groups
8			Revisit Concrete and Model Drawing; Reteach
6			Teacher spends majority of time with struggling
			learners; some time with on level, and less time
			with advanced groups
			Games and Activities can be done at this time

termines readiness for
mall group work and is used as
sment: Students not ready for
ill use Reteach. The Workbook
ndependent Practice.
AN be used as a
tool as needed.
pendent
e learners should finish all
tra Practice Homework is only
tudents fully understand the
litional practice)
ork (issued to struggling
be checked the next day
iew/Test as "review" for the
est Prep. Put on your Thinking
idents for novel questions on
est Prep is graded/scored.
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TRANSITION LESSON STRUCTURE

(No more than 2 days)

- Driven by Pre-test results, Transition Guide
- Looks different from the typical daily lesson

Transition Lesson – Day 1	
Objective:	
CPA Strategy/Materials	Ability Groupings/Pairs (by Name)
Task(s)/Text Resources	Activity/Description

Unit 1:

MIF Pacing Guide

Activity	Common Core Standards	Estimated Time	Lesson Notes
	Standards	(# of block)	
Pre-Test 1	3.NBT.1 and 3.NBT. 2	1 block	
1.1 Counting	3. NBT 1	2 blocks	Students misinterpret the value of digits in multi-digit numbers. Frequently refer to a place value chart and connect the digits to conceptual models, i.e. Place value blocks and pictorial representations.
Lesson 1.2 Place Value	3.NBT 1and 3.NBT.2	2 blocks	
Lesson 1.3 Comparing and Ordering Numbers		2 blocks	When students are comparing and ordering numbers have them to think about whether or not the pattern is increasing or decreasing. Also have students to observe whether a number pattern is increasing or decreasing by a particular place value
Problem Solving	3.NBT. 2 and 3.OA.8	1 block	
Review	3.NBT.1, <mark>3NBT.2</mark> and <mark>3.OA.8</mark>	1 block	
Chapter Test/Review 1 + Test Prep Open Ended	3.NBT.1, <mark>3NBT.2</mark> , and <mark>3.OA.8</mark>	1 block	Click <u>here</u> for Chapter Test/Review with included Test Prep Questions
Pre-test 2	3.NBT.2 and 3.OA. 8	1 block	
Lesson 2.1 - 2.3 Mental Addition and Subtraction	3.NBT.1, <mark>3.NBT.2</mark> , and <mark>3.OA.8</mark>	3 blocks	Teach mental math strategies that will encompass number bonds, number line, bar models, and deconstructing. After these lessons, the strategies above should be included daily in some form (do now, math workstations, homework, and centers). See mental math strategies resources.
Lesson 2.4 Rounding Numbers to Estimate	3.NBT.1, <mark>3.NBT.2</mark> , and <mark>3.OA.8</mark>	2 blocks	Students should use a number line or base ten blocks to round numbers from 1 to 1,000.
Problem Solving	3.NBT.1, <mark>3.NBT.2</mark> , and <mark>3.OA.8</mark>	2 blocks	
Review	3.NBT.1, <mark>3.NBT.2,</mark> and <mark>3.OA.8</mark>	1 block	
Chapter Test/Review 2 + Test Prep Open Ended	3.NBT.1, <mark>3.NBT.2,</mark> and <mark>3.OA.8</mark>	1 block	Click <u>here</u> for Chapter Test/Review with included Test Prep Questions
Pre- Test 3	3.NBT.2 and 3.OA. 8	1 block	
Lesson 3.1 Addition without regrouping with Problem Solving bar modeling	3.NBT.2 and 3.OA. 8	1 block	Students may have a difficult time understanding how 10 ones or 10 of any unit becomes a new and greater unit.

Lesson 3.2 Addition with regrouping with PS bar modeling	3.NBT.2 and <mark>3.OA. 8</mark>	1 block	
Lesson 3.3 Addition with regrouping with PS bar modeling	3.NBT.2 and <mark>3.OA. 8</mark>	1 block	
Problem Solving with Measurement	3.NBT.2 , <mark>3.MD.2</mark> , and <mark>3.OA. 8</mark>	2 blocks	
Chapter Test/Review 3 + Test Prep Open Ended	3.NBT.2, <mark>3.MD.2</mark> and <mark>3.OA. 8</mark>	1 block	Click <u>here</u> for Chapter Test/Review with included Test Prep Questions
Pre-Test 4	3.NBT.2 and 3.OA. 8	1 block	
Lesson 4.1 Subtraction without regrouping with Problem Solving bar modeling	3.NBT.2 and 3.OA. 8	1 block	Students do not demonstrate place value understanding.
Lesson 4.2 Subtraction with regrouping with Problem Solving bar modeling	3.NBT.2 and 3.OA. 8	1 block	Students tend to subtract the small number from the larger number rather than regrouping. Ex 46-28= 22. Instead of regrouping a ten as ten ones because it's not enough ones in the ones place in the number 46 to deduct 8 ones in the number 28, the student saw that the number on the 8 in 28 and took away 6, which is absolutely incorrect.
Lesson 4.3 Subtraction with regrouping with Problem Solving bar modeling	3.NBT.2 and 3.OA. 8	1 block	They may struggle with breaking two- digit numbers into tens and ones.
Lesson 4.4 Subtraction across Zeros with Problem Solving bar modeling	3.NBT.2 and 3.OA. 8	1 block	Students do not think about decomposing numbers into Tens and ones for easier adding and subtracting.
Problem Solving with measurement	<mark>3.NBT.2</mark> , <mark>3.MD.2</mark> , and <mark>3.OA. 8</mark>	1 block	
Review	3.NBT.2, <mark>3.MD.2</mark> , and <mark>3.OA. 8</mark>	1 block	
Chapter Test/Review 4 + Test Prep Open Ended	3.NBT.2 <mark>, 3.MD.2</mark> , and 3.OA. 8	1 block	Click here for Chapter Test/Review with included Test Prep Questions
Mini-Assessment #1	3.NBT.1-3	1/2 block	Click <u>here</u> for Mini Assessment 1
Mini Assessment #2	3.OA.8	1/2 block	Click <u>here</u> for Mini Assessment 2

Pacing Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7 Labor Day	8	9	10 Pre-Test Chapter 1	11	12
13	14	15	16	17	18	19
20	21	22	23 Chapter 1 Test/Review + TP	24	25 Pre-Test Chapter 2	26
27	28	29	30			

OCTOBER						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7 Performance Task #1	8 Chapter 2 Test/Review + TP	9 Performance Task #2	10
11	12 No School	13 Pre-Test 3	14	15	16	17
18	19	20	21	22.	23 Chapter 3 Test/Review + TP	24
25	26 Performance Task #3	27 Chapter 4 Pre-test	28	29	30	31

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NOVEMBER								
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
1	2	3	4	5 No School	6 No School	7		
8	9	10 <i>Chapter 4</i> Test/Review + TP	11 Performance Task #4	12	13 Mini Assessment 1 & Mini Assessment 2	14		
15	16	17	18	19	20	21		
22	23	24	25	26	27	28		
29	30							

Unit 1 Math Background

During their elementary mathematics education, students were exposed to counting, reading and writing numbers up to 100 in Grade 2. Students have had countless exposure and practice with using Base-10 blocks to develop the association between the physical representation of the number, the symbol and number-word. Furthermore, students learned to add using vertical form where 10 ones or 10 tens were regrouped as a new unit of 1 ten or 1 hundred. Students were shown and given opportunities to demonstrate concrete representations with place-value charts and strips showing hundreds, tens and ones for numbers up 100. Given 3-digit number, students were expected to identify the place value of each digit in the whole number and express the number in standard, word and expanded form. Students frequently came up with their own algorithms to added, subtracted, ordered, compared numbers and identify missing numbers in a pattern on and off a number line by applying place-value concepts. Students were held accountable for verbally communicating to each other and teacher by describing the differences between whole numbers using terms such as, least, fewest, less than, greater than, greatest, and equal to or have the same value as.

Transition Guide References:

Chapter : 1 Numbers	to 1,000			
Transition Topic: Wh	ole Numbers and Place	e Value		
Chapter 1 Grade 3 Pre Test Items	Grade 3 Chapter 1 Pre-Test Item Objective	Additional Reteach Support Grade 2 Reteach	Additional Extra Practice Support Grade 2 Extra Practice	Teacher Edition Support Grade 2 TE
Items 1-2, 14-15	Compare numbers using terms greater than and less than.	2A pp. 15; 20	Lesson 1.3	2A Chapter 1 Lesson 3
Items 14-15: 17	Order three-digit numbers	2A pp. 21-24	Lesson 1.4	2A Chapter 1 Lesson 4
Item 16	Identify the greatest number and least number	2A pp. 21-22	Lesson 1.4	2A Chapter 1 Lesson 4
Items 10-13	Identify number patterns.	2A pp. 8;24	Lesson 1.4	2A Chapter 1 Lesson 4

Chapter : 3 Addition to 1,000 and Chapter 4; Subtraction to 1,000							
Transition Topic: Addition and Subtraction of Whole Numbers							
Chapter 3-4 Pre Test Items	Grade 3 Chapters 3-4 Pre-Test Item Objective	Additional Reteach Support Grade 2 Reteach	Additional Extra Practice Support Grade 2 Extra Practice	Teacher Edition Support Grade 2 TE			
Chapter 3 Item1	Add up to three-digit numbers without regrouping	2A pp. 27-38	Lesson 2.2	2A Chapter 2 Lesson 2			
Chapter 3 Items 2,5	Add up to three-digit numbers without regrouping in ones.	2A pp. 39-44	Lesson 2.3	2A Chapter 2 Lesson 3			
Chapter 3 Item 3	Add up to three-digit numbers without regrouping in tens.	2A pp. 45-48	Lesson 2.4	2A Chapter 2 Lesson 4			

Chapter 3 Items 4,6, 7-8	Add up to three-digit numbers without regrouping ones and tens.	2A pp. 49-52	Lesson 2.5	2A Chapter 2 Lesson 5
Chapter 3 Items 7-8	Solve real-world addition problems	2A pp. 38;43-44; 48; 52	Lesson 2.2 p. 22; Lesson 2.3 p 24; Lesson 2.4 p 26; Lesson 2.5 p.28;	2A Chapter 2 Lesson 4
Chapter 4 Item1-3	Subtract from three- digit numbers without regrouping.	2A pp. 53-64	Lesson 3.1	2A Chapter 3 Lesson 1
Chapter 4 Item 5	Subtract from three- digit numbers with regrouping tens and ones	2A pp. 65-70	Lesson 3.2	2A Chapter 3 Lesson 2
Chapter 4 Item 4	Subtract from three- digit numbers with regrouping hundreds and tens	2A pp. 71-74	Lesson 3.3	2A Chapter 3 Lesson 3
Chapter 4 Item 6, 8	Subtract from three- digit numbers with regrouping hundreds, tens and ones	2A pp. 75-78	Lesson 3.4	2A Chapter 3 Lesson 4
Chapter 4 Item 7	Subtract from three- digit numbers with zeros	2A pp. 79-82	Lesson 3.5	2A Chapter 3 Lesson 5
Chapter 4 Item 7-8	Solve real-world subtraction problems.	2A pp. 64; 69- 70; 74; 78; 82	Lesson 3. 1-3.5 pp.32;34; 36; 38; 40	2A Chapter 3 Lesson 5

For Additional Support: See the Grade 3 Chapters 3 and 4 Math in Focus Background Videos on Think Central<www-k6.thinkcentral.com

PARCC Assessment Evidence/Clarification Statements

CCSS	Evidence Statement	Clarification	Math
			Practices
3.OA.8-1	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	 i) Only the answer is required (methods, representations, etc. are not assessed here). iii) Addition, subtraction, multiplication, and division situations in these problems man involve any of the basic situations types with unknowns in various positions. iii) If scaffolded, one of the 2 parts must require 2-steps. The other part may consist of 1-step. iv) Conversions should be part of the 2-steps and should not be a step on its own. v) If the item is 2 points, the item should be a 2 point, un-scaffolded item but the rubric should allow for 2-1-0 points. 	1, 4
3.MD.2-1	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (I).		
3.MD.2-2	Add, subtract, multiply, or divide (this unit just add/subtract) to solve one step word problems involving masses or volumes that are given in same units, e.g. by using drawings (such as beakers with a measurement scale) to represent the problem.	i) Only the answer is required (methods, representations, etc. are not assessed here).	1,2,4,5
3.NBT.2	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	 i) Tasks have no context. ii) Tasks are not timed 	

Connections to the Mathematical Practices

	Make sense of problems and persevere in solving them
1	In third grade, students know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Third graders may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They listen to the strategies of others and will try approaches. They often will use another method to check their answers.
	Reason abstractly and quantitatively
2	In third grade, students should recognize that number represents a specific quantity. They connect quantity to written symbols and create logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities.
	Construct viable arguments and critique the reasoning of others
3	In third grade, mathematically proficient students may construct viable arguments using concrete referents, such as objects, pictures, and drawings. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like, "How did you get that?" and "Why is it true?" They explain their thinking to others and respond to others' thinking.
	Model with mathematics
4	Mathematically proficient students experiment with representing problem situations in multiple ways including numbers, words (mathematical language) drawing pictures, using objects, acting out, making chart, list, or graph, creating equations etcStudents need opportunities to connect different representations and explain the connections. They should be able to use all of the representations as needed. Third graders should evaluate their results in the context of the situation and reflect whether the results make any sense.
	Use appropriate tools strategically
5	Third graders should consider all the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For example, they might use graph paper to find all possible rectangles with the given perimeter. They compile all possibilities into an organized list or a table, and determine whether they all have the possible rectangles.
	Attend to precision
6	Mathematical proficient third graders develop their mathematical communication skills; they try to use clear and precise language in their discussions with others and in their own reasoning. They are careful about specifying their units of measure and state the meaning of the symbols they choose. For instance, when figuring out the area of a rectangle the record their answer in square units.
	Look for and make use of structure
7	In third grade, students should look closely to discover a pattern of structure. For example, students properties of operations as strategies to multiply and divide. (Commutative and distributive properties.
	Look for and express regularity in repeated reasoning
8	Mathematically proficient students in third grade should notice repetitive actions in computation and look for more shortcut methods. For example, students may use the distributive property.

Visual Vocabulary

Visual Definition

The terms below are for teacher reference only and are not to be memorized by students. Teachers should first present these concepts to students with models and real life examples. Students should understand the concepts involved and be able to recognize and/or use them with words, models, pictures, or numbers.















whole numbers



Whole numbers are 0 and the counting numbers 1, 2, 3, 4, 5, 6, and so on.

word form

The word form of 345 is three hundred forty-five.

A way of using words to write a number. (also known as number names)

Potential Student Misconceptions

- Students misinterpret the value of digits in multi-digit numbers. Students need to understand that when you have ten of one unit, you also have one unit of the next higher value. Frequently refer to a place value chart and connect the digits to conceptual models, ie. place value blocks and pictorial representations. Have students create multiple ways to represent numbers such as 132 can be made of 1 hundred, 3 tens, 2 ones or 1 hundred, 1 ten, and 22 ones, or 12 tens and 12 ones. When explaining strategies used, students must identify the unit value; e.g when adding 492 and 265, they state that they are adding "two hundred" to "four hundred", ie. the 2 in 265 is named "two hundred", rather than "two.
- Students believe that subtraction is commutative. After students have discovered and applied the commutative property for addition, ask them to investigate whether this property works for subtraction. Have students share and discuss their reasoning and guide them to conclude that the commutative property does not apply to subtraction.
- Students misunderstand the meaning of the equal sign. The equal sign means "is the same quantity as" but many students believe the equal sign tells you that the "answer is coming up" to the right of the equal sign. Students need to see equations written multiply ways. It is important to model equations in various ways 28 = 20 + 8 or 19 + 8 = 20 + 7.
- Students often get confused with naming value before understanding the amount of units represented.
- Students misunderstand the characteristics structure of our base-10 number system.

(Place value and the position of a digit represent its value, base ten elements, which is based on the powers of ten that increases and decreases when shifted to the left or right, and is collections of ten which determine a new collection, the use of zero to show an absence value or to regroup numbers. Lastly additive structure which can be written in expanded notation.

- Students not being to apply place value to partitioning, comparing, ordering, rearranging, arithmetic patterns, and regrouping numbers up to 100 (Multi-unit counting)
- Students always subtract the small number from the larger number rather than regrouping. Ex 46-28= 22. Instead of regrouping a ten as ten ones because it's not enough ones in the ones place in the number 46 to deduct 8 ones in the number 28, the student saw that the number on the 8 in 28 and took away 6, which is absolutely incorrect.

Teaching Multiple Representations



These strategies should be discovered, explored, and modeled by the students

Unit 1:

Unit 1 Assessment / Authentic Assessment Framework							
Assessment	CCSS	CCSS Estimated Time		Graded ?			
Chapter 1							
Pre Test1	3.NBT.1	½ block	Individual	No			
Chapter 1 Test/Review + TP	3.NBT.1	1 block	Individual	Yes			
Authentic Assessment #1	3.NBT.1	½ block	Individual	Yes			
Chapter 2							
Pre Test 2	3.NBT.2	½ block	Individual	No			
Chapter 2 Test/Review + TP	3.NBT.2	1 block	Individual	Yes			
Authentic Assessment #2	2.OA.2	½ block	Individual	Yes			
Chapter 3							
Pre-Test 3	3.NBT.2	½ block	Individual	No			
Chapter 3 Test/Review + TP	3.NBT.2	1 block	Individual	Yes			
Authentic Assessment #3	3.NBT.2	1 block	Pairs	Yes			
Chapter 4							
Pre-Test 4	3.NBT.2	½ block	Individual	No			
Chapter 4 Test/Review + TP	3.NBT.2	1 block	Individual	Yes			
Authentic Assessment #4	3.MD.2	½ block	Individual	Yes			
Mini Assessment #1	3.NBT.1-3	½ block	Individual	Yes			
Mini Assessment #2	3.OA.8	½ block	Individual	Yes			

Assessment Framework

	PLD	Genesis Conversion
Rubric Scoring	PLD 5	100
	PLD 4	89
	PLD 3	79
	PLD 2	69
	PLD 1	59

Authentic Assessment# 1

Name:

Comparing Heights

Neil and Jerome were comparing their heights.



Neil measured his height and said,

"I am 59 inches. 59 rounds to 100 so I am about 100 inches tall."

Jerome measured his height and said,

"I am 65 inches. 65 rounds to 70 so I am about 70 inches tall. You're taller, Neil."

1. Is there something wrong with the boys' reasoning?

2. How could the boys correctly use rounding to compare their heights?

3. What are two examples of ways you could use rounding in your life?

Comparing Heights - 3.NBT.1									
Materials	Comparing Heights handou	ts, paper, pencils, calcul	ators (optional)						
Task	 Pristribute copies of the Comparing Heights handout. ead: Neil and Jerome were comparing their heights to see who is taller. Neil measured his height and said "I am 59 inches. 59 rounds to 100 so I am about 100 inches tall." Jerome measured his height and said, "I am 65 inches. 65 rounds to 70 so I am about 70 inches tall. You're taller, Neil." ask: 1. What is wrong with the boys' reasoning? 2. How could the boys correctly use rounding to compare their heights? 3. What are two examples of ways you could use rounding in your life? 								
evel 5: Distinguished	Level 4: Strong	Level 3: Moderate	Level 2: Partial	Level 1: No					
Command Student gives all correct answers.	Student gives all 3 correct answers.	Student gives 2 correct answers.	Student gives 1 correct answers.	Student gives less than 1					
Clearly constructs and communicates a complete response based on explanations/reasoning using the: properties of operations relationship between addition and subtraction relationship Response includes an efficient and logical progression of steps.	Clearly constructs and communicates a complete response based on explanations/reasoning using the: properties of operations relationship between addition and subtraction relationship between multiplication and division Response includes a logical progression of steps	Constructs and communicates a complete response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division Response includes a logical but incomplete progression of steps. Minor calculation errors.	Constructs and communicates an incomplete response based on explanations/reasonin g using the: • properties of operations • relationship between addition and subtraction • relationship between multiplication and division Response includes an incomplete or illogical progression of steps.	correct answers. The student shows no work or justification					

Authentic Assessment #1 Scoring Rubric

Authentic Assessment #2

Name:_____

Pencil and a Sticker

A pencil costs 59 cents, and a sticker costs 20 cents less. How much do a pencil and a sticker cost together?

Unit 1:

Authentic Assessment #2 Scoring Rubric:

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

Mathematical Practice:

Type: Individual, Individual w/Interview

Materials:

- Paper
- Pencil
- Hundreds board/chart
- Base Ten Blocks
- Student made number line

The purpose of the task is to allow children an opportunity to add with regrouping and subtract numbers. The solutions show how students can solve this problem before they have learned the traditional algorithm. Children need to be familiar with the 100s board, base ten blocks, counting on, and counting backwards. The solutions given make sense to children and are often easier for them to explain and justify than using the traditional algorithm.

Students who insist on using the standard algorithm should be able to clearly express each step they are making and why they are making it.

Possible Solutions:

The Hundreds chart below represents the subtraction of 59-20.

1	2	3	4	5	6	7	8	9	10
Ш	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The Hundred Chart below represents 59 + 30 + 9

Unit 1:

1	2	3	- 4	5	6	7	8	9	10
Ш	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

SOLUTION:	59 – 20 = 39			
39+ 59 = 98				
Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command	Level 1: No Command
Student gives both correct answers.	Student gives both answers.	Student gives one correct answer.	Student gives one correct answer.	Student gives less than 1 answer.
Clearly constructs and communicates a complete response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction	Clearly constructs and communicates a complete response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction	Constructs and communicates a complete response based on explanations/reasoning using the: • properties of operations • relationship between addition and subtraction	Constructs and communicates an incomplete response based on explanations/reasonin g using the: • properties of operations • relationship between addition and subtraction	The student shows no work or justification.
Response includes an efficient and logical progression of steps.	Response includes a logical progression of steps	Response includes a logical but incomplete progression of steps. Minor calculation errors.	Response includes an incomplete or Illogical progression of steps.	

Authentic Assessment #3

Compatible Numbers

Name:_____

Look at Ms. Snyders Game Board

500	236	376
463	145	537
743	856	124

- A. Ms. Snyder is playing a game with her class. In order to win round 1 of the game, the class must find <u>two</u> numbers on Ms. Snyder's game board whose sum is exactly 1,000.
 Which two numbers will win the game? Show all work.
- B. In order to win round 2 of the game, the class must find <u>three</u> numbers on Ms. Snyder's game board whose sum is exactly 1,000.
 Which three numbers will win the game? Show all work.
- C. With a partner assigned to you by your teacher, create your own game board that has a set of
 - two numbers whose sum is exactly 1,000 and a set of three numbers whose sum is 1,000.

Authentic Assessment 3 Scoring Rubric:

3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Type: Individual (Part A or B), individual with interview (Part A or B), and pairs (Part C)

The purpose of the task is to allow children an opportunity to add with regrouping and subtract numbers. The solutions show how students can solve this problem before they have learned the traditional algorithm. Children need to be familiar with the 100s board, base ten blocks, counting on, and counting backwards. The solutions given make sense to children and are often easier for them to explain and justify than using the traditional algorithm.

Students who insist on using the standard algorithm should be able to clearly express each step they are making and why they are making it.

SOLUTION:

- Student identifies that the sum of **463** and **537** is **1,000**.
- Student identifies that the sum of **124**, **376**, and **500** is **1,000**.
- Student clearly explains strategies for finding sums.
- Students generates a game board with a set of two numbers whose sum is 1,000 and a set of three numbers whose sum is 1,000.

Level 5:	Level 4: Strong	Level 3: Moderate	Level 2: Partial	Level 1: No
Distinguished	Command	Command	Command	Command
Command	••••••			
Student gives all correct answers. Clearly constructs and communicates a complete response based on explanations/reasoning using the: • properties of operations • relationship between	Student gives all correct answers. Clearly constructs and communicates a complete response based on explanations/reasoning using the: • properties of operations • relationship between	Student does 3 parts of the correct solution. Constructs and communicates a complete response based on explanations/reasoning using the: • properties of operations • relationship between	Student does 1-2 parts of the correct solution. Constructs and communicates an incomplete response based on explanations/reasonin g using the: • properties of operations • relationship between	Student does not complete any part correct. The student shows no work or justification.
addition and subtraction	addition and subtraction	addition and subtraction	addition and subtraction	
Response includes an efficient and logical progression of steps.	Response includes a logical progression of steps	Response includes a logical but incomplete progression of steps. Minor calculation errors.	Response includes an incomplete or Illogical progression of steps.	

Unit 1:

Authentic Assessment #4

Name:___

Measuring Water

Nadine had a container of water. She poured some of the water into each of her beakers.



About how many milliliters of water were in Nadine's original container?

About how many milliliters of water did Nadine pour into each of her beakers? Explain how you found the amount of water in each beaker.

Performance Task 4 Scoring

	Measuring Water 3.MD.2
Materials	Measuring Water handouts, paper, pencil, examples of measurement containers (optional)
Task	Distribute Measuring Water handouts to students. Draw students' attention to the images on the handout. $1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$
	About how many milliliters of water did Nadine pour into each of her beakers? Explain how you found the amount of water in each beaker.

Level 5: Distinguished	Level 4: Strong	Level 3: Moderate	Level 2: Partial	Level 1: No
Command	Command	Command	Command	Command
Student gives all correct	Student gives all 2	Student gives all 2	Student gives 1 correct	Student gives
answers.	correct answers.	correct answers.	answers.	less than 1
				correct
Clearly constructs and	Clearly constructs and	Constructs and	Constructs and	answers.
communicates a complete	communicates a	communicates a	communicates an	
response based on	complete response	complete response	incomplete response	The student
explanations/reasoning	based on	based on	based on	shows no
using the:	explanations/reasoning	explanations/reasoning	explanations/reasoning	work or
 properties of 	using the:	using the:	using the:	justification.
operations	 properties of 	 properties of 	 properties of 	
 relationship 	operations	operations	operations	
between addition	 relationship 	 relationship 	 relationship 	
and subtraction	between	between	between	
relationship	addition and	addition and	addition and	
	subtraction	subtraction	subtraction	
Response includes an	 relationship 	 relationship 	 relationship 	
efficient and logical	between	between	between	
progression of steps.	multiplication	multiplication	multiplication	
	and division	and division	and division	
	Response includes a	Response includes a	Response includes an	
	logical progression of	logical but incomplete	incomplete or illogical	
	steps	progression of steps.	progression of steps.	
		Minor calculation errors.		

Unit 1:

Additional Resources

Mental Math Strategies

Thinking Strategies for Addition	
Counting On: Students start with a number and count	Using Doubles: The first fact combinations students
on 1, 2, 3. For example, if the question	often learn are doubles. Examples:
is 5 + 2, students count 5, 6, 7. Note: This strategy is	2 + 2 =
only useful for adding 1,	3 + 3 =
2, or 3.	8 + 8 =
Making Ten: Students make combinations that equal	
10. Then they extend to make combinations that are	
multiples of 10. Examples: 6 + 4 = 10 extends to 76 +	
4	
= 80. This can then be extended to $10 + 4 = 14$ or $50 + 4$	
8 = 58.	
Thinking Strategies for Subtraction	
<i>Counting Back:</i> Students start with a number and	Counting Up: Students start with a number being
count backwards. If the question is $5 - 2$, students	subtracted and count up to the number from which it
count 5, 4, 3. Note: This strategy is only useful for	is being subtracted. For example, for the question 9 –
subtracting 1, 2, or 3.	7, students can count 8, 9.
Lising Part Part Whole:	h Partitioning:
Given: Part + Part - Whole	a = 7 - 2
Therefore: Whole - Dart - Dart	S = 7 = 1
	Students make all possible combinations for Part +
Evamples	Dart - Whole
a Thinking Addition:	$7 \pm 2 = 0$
15 - 8 - 2	2 + 7 - 9
13 - 6 - 1 Whole - Part - Part (?)	$x_{1} = 0$
Students think $8 \pm 7 = 15$ (Part \pm Part $=$ Whole)	30 9 - 2 - 7 01 9 - 7 - 2
Therefore: $15 - 8 = 7$	c Missing Part
	8 + 7 = 11
	Students use part part whole to answer such
	questions
	questions.
When students have an easier time adding than subtra	cting the following strategies can be helpful.
Make Ten and Then Some:	Using Doubles: For the question 13 – 6 = ?, students
Given a subtraction question such as $14 - 8 = ?$,	think addition using doubles. For example, 6 + 6 = 12,
students start with the part (8), add-on to make 10	then add-on 1 to make 13, so 6 + 1 = 7.
(i.e., 8 + 2), then add-on from 10 to make 14 (10 + 4).	
Then the students add the numbers they added-on to	
make 14 (4 + 2 = 6).	

Thinking in Patterns	
Skip Counting: Starting at any number, students skip count by 10s, 2s, 3s, 5s. For example, ask students to skip count by 10s starting at 46.	 100 Chart: Make sure a 100 chart is visible in your classroom and that students have access to desk-size charts. Refer to the chart and practice counting skills or the chart regularly. Arrow Moves: Indicate moves on the 100 chart by using arrows. For example, 23 + 11 = ?, would be indicated with one space across from 23 to 24 and then from 24 ten spaces down to 34. Note the pattern for all additions of +11 on the chart.
Chaining Operations: Example: 8 + 2 + 4 + 6 – 3 = ? (Note: choose combinations that end in multiples of 10 to encourage students' visualization of the 10 frame.)	
Strategies for Adding and Subtracting Large Numbers:	
<i>Multiples of Ten:</i> For addition: 30 + 50 = , 56 + 10 = , 56 + 30 = For subtraction: 50 – 30 = , 56 – 10 = , 56 – 30 =	Expanding the Second Addend or Subtrahend: For addition: 28 + 17 = , 28 + 10 + 7 = For subtraction: 28 - 17 = , 28 - 10 - 7 =
Front-end Adding: Example: 65 + 26 = ? Ask students to think 60 + 20 = 80 and 5 + 6 = 11, so 80 + 11 = 91.	Compensation for 8 and 9: Examples: $67 - 19 = 67 - 20 + 143 + 29 = 43 + 30 - 1$ 67 - 18 = 67 - 20 + 243 + 28 = 43 + 30 - 2
Compatible Numbers: Students bring together numbers that add up to 10 or multiples of 10. Example: $8 + 5 + 12 + 7 + 5 + 3 + 4 = ?$ Think $8 + 12 = 20, 5 + 5 = 10, 7 + 3 = 10$ Therefore, $20 + 10 + 10 + 4 = 44$	<i>Multiples of 25:</i> Students count by 25s and relate to money.
Common Zeros: For addition and subtraction operations, students remove the 0s, complete the operation, and then tack the 0 back on. Example: 120 – 70 = ? Think 12 – 7 = 5 Add the <i>common</i> zero, so the answer is 50.	

Problem Solving Questions Bank

1. We are in school 180 days. Imagine today is the 124th day of school. How many more days until we are out of school for summer vacation?

2. Roger needs a total of 23 box tops before he can win an awesome prize. So far he has collected 15 box tops. How many more does he need to reach his goal, and earn the prize?

3. Stephanie had bought a dozen eggs at the store. She now has 5 eggs left. How many eggs did she use?

4. This year Bob collect 134 pieces of candy when he went trick or treating. Two years ago he collected 87 pieces of candy. How many more did he collect this year?

5. Rosa read 57 pages of a book in the morning. She read 13 fewer pages in the afternoon. How many pages did Rosa read in the afternoon?

6. Mike has 57 action figures. Alex has 186 action figures. What would be the best estimate of the number of action figures Mike and Alex have altogether?

7. There are 500 sheets of paper in the pack Hannah bought. She has used 137 sheets already. How many sheets of paper does Hannah have left?

8. There were 378 visitors to the science museum on Friday. There were 409 visitors on Saturday. How many more people visited the museum on Saturday?

9. Jalen scores 247 points in a video game. How many more points does he need to score a total of 650?

10. Mia had 280 minutes to complete her chores. Mia spent 117 minutes washing the dishes. She spent 138 minutes cleaning her room. About how many minutes did she spend on the two task? Did Mia have enough time to watch a TV show that was 30 minutes?

11. Nathanael had 300 minutes to complete his book report before having to leave the house on Saturday. It took him 142 minutes to write the report. Then he spent 118 minutes correcting his report. About how much time did Nathanael spend on his report? Does Nathanael have enough time to read a book for 20 minutes?

12. After paying \$1,270 for a laptop. Mrs. Daniels has \$765 remaining. How much money did Mrs. Daniels have at first?Ray's rope is 1,452 centimeters long.

13. Hannah's rope is 379 centimeters longer than Ray's rope. A. How long is Hannah's rope? B. Ray uses 645 centimeters of his rope. How long is his remaining rope?

14. Chinaza has been collecting cards since she was 5 years old. She has not thrown away any of her cards. She collected 201 cards last year. She collects 125 cards this year. She has a total of 589 cards now. How many cards did she have in total at the end of last year? How many cards did she collect when she was 5 years old?

15. Na'Sean, Maurice, and Kygee hold a garage sale for their football team. Na'Sean raises \$350. Maurice raises \$20 more than Na'Sean. Kygee raises the same amount as the total amount raised by Na'Sean and Maurice. How much money do the three boys raise in all?

16. Savir has 120 baseball cards. After Savir bought 50 more cards, Savir had 35 more cards than Lucian. Write an equation you write to solve for Lucian's baseball cards.

17. Samir wants to ride the Ferris wheel, the roller coaster, and the log ride. The Ferris wheel costs 3 tickets, the roller coaster costs 8 tickets and the log ride costs 7 tickets. Samir has 5 tickets. How many more tickets should Samir buy?

18. In Jamileth's desk drawer there are 11 yellow highlighters. There are 11 more pink highlighters than yellow highlighters, and there are 2 more blue highlighters than pink highlighters. How many highlighters are in Jamileth's desk drawer in all?

19. China needs 84 paper plates for a birthday party. She already has 14 blue plates and 30 red plates. How many more plates should China buy?

20. Jamal needs 79 cupcakes for a birthday party. He already has 31 chocolate cupcakes and 20 vanilla cupcakes. How many more cupcakes should Jamal buy?

Additional Resources -- Suggested Activities

3.NBT.2

All About Rounding

Part I:

How many different numbers will round to 300 when rounding to the nearest hundred?

How many different numbers will round to 300 when rounding to the nearest ten?

How can you prove that you found all possible numbers?

Part II:

How does rounding help you solve addition and subtraction problems?

Give an example of a real world addition or subtraction problem that can be solved using rounding. Be sure to show how you would solve the problem.

3.MD.2

Think about what we might weigh with grams or kilograms. Put an X through the picture that does not belong.

Explain your reasoning:

Put a check in the box of the unit that is the best choice for measuring each.

	Cups	Gallons	Feet	Miles	Ounces	Pounds
coffee in a coffee pot						
the distance from Columbia to Baltimore						
amount of water in a pond						
the weight of a grasshopper						

Look at the pictures of the objects below. **Circle** the picture of the objects that could be weighed in grams. Then put an **X** over the objects that could be weighed in **kilograms**.



Jamie's snack had 4 grams of fat. The amount of protein was 8 times that amount. How many grams of protein did her snack have?

Circle the better unit to measure		
1. a glass of orange juice	milliliter	liter
2. a bath tub	milliliter	liter
3. a pitcher of fruit punch	milliliter	liter
4. a bottle of glue	milliliter	liter

Weighing Fruit

Julius put a lime on the scale and found that it weighed 60 grams.

He used the same scale to weigh an orange.



About how much does the orange weigh? Explain how you found the weight of the orange using precise vocabulary.

Julius put three oranges in a bag.



If each orange was the same size as the one he weighed, about how much does the bag of oranges weigh? Explain how you found the weight using precise vocabulary.

3.MD.2

Materials and Directions:

- 1. Give students a variety of real objects that could be weighed in grams or kilograms.
- 2. Have the students weigh a few of the objects sorting them either under the gram category or the kilogram category.
- 3. Once they have weighed a few items, have them estimate which category the rest of the items would go in. Then have the students weigh the items to check their predictions.
- 4. Now give each student a variety of pictures that would be weighed in grams or kilograms (some example pictures are attached).
- 5. Have students sort the pictures under the two categories on the T-chart: Grams or Kilograms (attached) and glue them on.
- 6. Circulate while the students are sorting to check for understanding before they begin to glue.

Extensions:

- Have students explain their estimations orally.
- Have students go on a scavenger hunt for real life items that would be weighed in either grams or kilograms.
- Have students explain orally or in written form why they sorted the pictures under each category.
- Have students draw a few of their own pictures that would fit under each category.

Considerations:

- Observe what strategies students use when making their estimations of the real objects.
- Observe what strategies students use when sorting the pictures under the gram and kilogram categories.





Grams	Kilograms

Extensions and Sources

Online Resources

Think Central

https://www-k6.thinkcentral.com/ePC/start.do

Common Core Tools

http://commoncoretools.me/ http://www.ccsstoolbox.com/ http://www.achievethecore.org/steal-these-tools

Achieve the Core

http://achievethecore.org/dashboard/300/search/6/1/0/1/2/3/4/5/6/7/8/9/10/11/12

Manipulatives

<u>http://nlvm.usu.edu/en/nav/vlibrary.html</u> <u>http://www.explorelearning.com/index.cfm?method=cResource.dspBrowseCorrelations&v=s&id=USA-000</u> <u>http://www.thinkingblocks.com/</u>

Website Resources

IllustrativeMath Project http://illustrativemathematics.org/standards/k8

The site contains sets of tasks that illustrate the expectations of various CCSS in grad

The site contains sets of tasks that illustrate the expectations of various CCSS in grades K–8 grade and high school. More tasks will be appearing over the coming weeks. Eventually the sets of tasks will include elaborated teaching tasks with detailed information about using them for instructional purposes, rubrics, and student work.

Inside Mathematics

http://www.insidemathematics.org/index.php/tools-for-teachers

Inside Mathematics showcases multiple ways for educators to begin to transform their teaching practices. On this site, educators can find materials and tasks developed by grade level and content area.

Engage NY

http://www.engageny.org/video-library?f[0]=im_field_subject%3A19

IXL http://www.ixl.com/

Sample Balance Math Tasks http://www.nottingham.ac.uk/~ttzedweb/MARS/tasks/

Georgia Department of Education

https://www.georgiastandards.org/Common-Core/Pages/Math-K-5.aspx

Georgia State Educator have created common core aligned units of study to support schools as they implement the Common Core State Standards.

3rdGrade:<u>http://ccgpsmathematicsk-5.wikispaces.com/3rd+Grade</u>

Formative Assessment :<u>http://ccgpsmathematicsk-5.wikispaces.com/K-5+Formative+Assessment+Lessons+%28FALs%29</u>

Number Talks and Multi-grade Resources: <u>http://ccgpsmathematicsk-</u> <u>5.wikispaces.com/Number+Talks+and+other+Multi+Grade+Resources</u>

NY SAMPLE QUESTIONS

Grade 3: <u>https://docs.google.com/file/d/0Byj6JhSTYWXwb1F4aFc4MGNpWGM/preview</u>

Howard County

3rdGrade :<u>https://grade3commoncoremath.wikispaces.hcpss.org/home</u>

Ohio

http://education.ohio.gov/getattachment/Topics/Ohio-s-New-Learning-Standards/Mathematics/Grade_3_Math_Model_Curriculum_March2015.pdf.aspx

Gates Foundations Tasks

http://www.gatesfoundation.org/college-ready-education/Documents/supporting-instruction-cards-math.pdf

Minnesota STEM Teachers' Center http://www.scimathmn.org/stemtc/frameworks/721-proportional-relationships

Singapore Math Tests K-12 http://www.misskoh.com

Math Score:

Math practices and assessments online developed by MIT graduates. <u>http://www.mathscore.com/</u>

Massachusetts Comprehensive Assessment System

www.doe.mass.edu/mcas/search

Performance Assessment Links in Math(PALM)

PALM is currently being developed as an on-line, standards-based, resource bank of mathematics performance assessment tasks indexed via the National Council of Teachers of Mathematics (NCTM). http://palm.sri.com/

Mathematics Vision Project

http://www.mathematicsvisionproject.org/

NCTM http://illuminations.nctm.org/

Assessment Resources

- *Illustrative Math: <u>http://illustrativemathematics.org/</u>
- *PARCC: <u>http://www.parcconline.org/samples/item-task-prototypes</u>

- NJDOE: <u>http://www.state.nj.us/education/modelcurriculum/math/</u> (username: model; password: curriculum)
- o DANA: <u>http://www.ccsstoolbox.com/parcc/PARCCPrototype_main.html</u>
- New York:<u>http://www.p12.nysed.gov/assessment/common-core-sample-questions/</u>
- *Delaware: http://www.doe.k12.de.us/assessment/CCSS-comparison-docs.shtml