Grade 1

Mathematics - Grade 1: Critical Areas

In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

1. Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., "making tens") to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction. **(1.OA.1, 1.OA.2, 1.OA.3, 1.OA.4, 1.OA.5, 1.OA.6, 1.OA.7, 1.OA.8)**

2. Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes. **(1.NBT.1, 1.NBT.2, 1.NBT.3, 1.NBT.4, 1.NBT.5, 1.NBT.6)**

3. Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement.[1] **(1. MD.1, 1. MD.2)**

4. Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

 Key:

- Major Clusters |
- Supporting |
- Additional Clusters |
- * Benchmarked Standard

[1] Students should apply the principle of transitivity of measurement to make indirect comparisons, but they need not use this technical term.

Vocabulary: Building the Language of Mathematics for Students

First Grade

Operations and Algebraic Thinking	Number and Operations in Base Ten	Measurement and Data	Geometry
Represent and solve problems involving addition and subtraction. add, adding to, taking from, putting together, comparing, unknown, sum, less than, equal to, minus, subtract, the same amount as, counting on, making ten, doubles, equation **Understand and apply properties of operations and the relationship between addition and subtraction.** add, subtract, unknown addend, order, first, second, **Add and subtract within 20.** addition, putting together, adding to, counting on, making ten, subtraction, taking apart, taking from, equivalent, sum, unknown, equal, equation, counting all, counting on, counting back **Work with addition and subtraction equations.** equation, equal, the same amount/quantity as, true, false, addition, putting together, adding to, counting on,	**Extend the counting sequence.** number, zero, one, two…thirteen, fourteen…nineteen...one hundred twenty **Understand place value.** ones, tens, bundle, left-overs, singles, groups, compare, greater than, less than, equal to, ‹, ›, = **Use place value understanding and properties of operations to add and subtract.** ones, tens, add, subtract, reason, more, less	**Measure lengths indirectly and by iterating length units.** compare, measure, order, length, height, more, less, longer than, shorter, than, first, second, third, gap, overlap, about, a little less than, a little more than **Tell and write time.** time, hour, half-hour, about, o'clock, past, analog clock, digital clock **Represent and interpret data.** Data, how many more, how many less, least, same, different, category, question, collect	**Reason with shapes and their attributes.** shape, closed, open, side, attribute, feature, two-dimensional, rectangle, square, trapezoid, triangle, half-circle, and quarter-circle, three-dimensional, rectangular prism cube, cone, prism, cylinder, partition, equal shares, halves, fourths, quarters, half of, fourth of, quarter of From previous grades: circle, rectangle, hexagon, sphere From previous grade: circle, hexagon, cube, cone, cylinder, sphere

● Major Clusters | ● Supporting | ● Additional Clusters | * Benchmarked Standard

making ten, subtract, taking apart, taking from, sum, unknown			

The Common Core State Standards for Mathematical Practice are practices expected to be integrated into every mathematics lesson for all students Grades K-12. Below are a few examples of how these Practices may be integrated into tasks that Grade 1 students complete.

Practice Explanation and Example

MP1) Make sense of problems and persevere in solving them. Mathematically proficient students in Grade 1 examine problems (tasks), can make sense of the meaning of the task and find an entry point or a way to start the task. Grade 1 students also develop a foundation for problem solving strategies and become independently proficient on using those strategies to solve new tasks. In Grade 1, students' work still relies on concrete manipulatives and pictorial representations as students solve tasks unless the CCSS refers to the word fluently, which denotes mental mathematics. Grade 1 students also are expected to persevere while solving tasks; that is, if students reach a point in which they are stuck, they can reexamine the task in a different way and continue to solve the task. For example, to solve a problem involving multi-digit numbers, they might first consider similar problems that involve multiples of ten. Once they have a solution, they look back at the problem to determine if the solution is reasonable and accurate. They often check their answers to problems using a different method or approach and lastly, mathematically proficient students complete a task by asking themselves the question, "Does my answer make sense?"

MP2) Reason abstractly and quantitatively. Mathematically proficient students in Grade 1 make sense of quantities and the relationships while solving tasks. This involves two processes decontextualizing and contextualizing. In Grade 1, students represent situations by decontextualizing tasks into numbers and symbols and contextualizing numbers and symbols. For contextualizing example, when a student sees the expression 40 – 26, she might visualize this problem by thinking, if I have 26 marbles and Melissa has 40, how many more do I need to have as many as Melissa? Then, in that context, she thinks, 4 more will get me to a total of 30, and then 10 more will get me to 40, so the answer is 14. In this example, the student uses a context to think through a strategy for solving the problem, using the relationship between addition and subtraction and decomposing and recomposing the quantities. She then uses what she did in the context to identify the solution of the original abstract problem. A decontextualizing example: to find the area of the floor of a rectangular room that measures 10m by 12m, a student might represent the problem as an equation, solve it mentally, and record the problem and solution as $10 \times 12 = 120$.

MP3) Construct viable arguments and critique the reasoning of others. Mathematically proficient students in Grade 1 accurately use definitions and previously established solutions to construct viable arguments about mathematics. In Grade 1 during discussions about problem solving strategies, students constructively critique the strategies and

reasoning of their classmates. Examples: 1) while solving 74 + 18 – 37, students may use a variety of strategies, and after working on the task, can discuss and critique each other's reasoning and strategies, citing similarities and differences between strategies, 2) a student might argue that 2 different shapes have equal area because it has already been demonstrated that both shapes are half of the same rectangle. Students at this level present their arguments in the form of representations, actions on those representations, and explanations in words (oral or written).

MP4) Model with mathematics. Mathematically proficient students in Grade 1 model real–life mathematical situations with a number sentence or an equation, and check to make sure that their equation accurately matches the problem context. At this level, it might be as simple as writing an addition equation to describe a situation. Grade 1 students still rely on concrete manipulatives and pictorial representations while solving problems, but the expectation is that they will also write an equation to model problem situations. Likewise, Grade 1 students are expected to create an appropriate problem situation from an equation. For example, students are expected to create a story problem for the equation 24 + 17 – 13 =? See Table 1 in Appendix for Addition/Subtraction "Situations".

MP**5)** Use appropriate tools strategically. Mathematically proficient students in Grade 1 have access to and use tools appropriately. These tools might include physical objects (cubes, geometric shapes, place value manipulatives, fractions bars, etc.) drawings or diagrams (number lines, tally marks, tape diagrams, arrays, tables, graphs, etc.), paper & pencil, rulers, and other measuring tools, scissors, tracing paper, grid paper, virtual manipulatives or other available technologies that support conceptual understanding and higher-order thinking skills. Example: while solving 28 + 17, students can explain why place value blocks are more appropriate than counters.

MP**6)** Attend to precision. Mathematically proficient students in Grade 1 are precise in their communication, calculations, and measurements. They start by using everyday language to express their mathematical ideas, realizing that they need to select words with clarity and specificity rather than saying "it works" without explaining what "it" means. Once Grade 1 students become familiar with a mathematical idea or object, they are ready to learn more precise mathematical terms to describe it. In all mathematical tasks, it is expected that Grade 1 students communicate clearly, using grade-level appropriate vocabulary accurately as well as giving precise explanations and reasoning regarding their process of finding solutions. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. Example: the equivalence of 8 & 5 can be written both as 5 + 3 = 8 and 8 + 5 + 3.

MP7) Look for and make use of structure. Mathematically proficient students in Grade 1 carefully look for patterns and structures in the number system and other areas of mathematics. At this level, students USE structure such as place value, the properties of operations, other generalizations about the behavior of the operations (for example, the less you subtract, the greater the difference). Or, while solving addition and subtraction problems students can apply the patterns of the number system to skip count by 10s off the decade. For example, Grade 1

students are expected to mentally reason that 33 + 21 is 33 plus 2 tens, which equals 53 and then an addition one which equals 54. While working in the Numbers in Base Ten domain, students work with the idea that 10 ones equal a ten, and 10 tens equals 1 hundred. Further, Grade 1 students also make use of structure when they work with subtraction as missing addend problems, such as 50 − 33 =? can be written as 33+? = 50 and can be thought of as how much more do I need to add to 33 to get to 50?

MP8) Look for and express regularity in repeated reasoning. Mathematically proficient students in Grade 1 begin to look for regularity in problem structures when solving mathematical tasks. For example, first graders might notice that when tossing 2-color counters to find combinations of a given number, they always get what they call “opposites” ----when tossing 6 counters, they get 2 red, 4 yellow and 4 red, 2 yellow and when tossing 10 counters, they get 1 red, 9 yellow and 1 yellow and 9 reds and are able to formulate conjectures about what they noticed. Also, students begin to look for strategies to be more efficient in computations, including doubles strategies and making a ten. Lastly, while solving all tasks, Grade 1 students accurately check for the reasonableness of their solutions during, and after completing the task.

- Major Clusters |
- Supporting |
- Additional Clusters |
- * Benchmarked Standard

 Key:

Pacing Guide - Year-at-a-Glance - Timing based upon 4 Marking Periods at 9 weeks each

Pacing Guide	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
Unit 1 - 9 weeks **Add and Subtract within 10**	● 1.OA.A.1* ● 1.OA.B.3* ● 1.OA.B.4 ● 1.OA.C.5 ● 1.OA.D.7* ● 1.OA.D.8* ● 1.NBT.A.1*	● Represent and solve problems involving addition and subtraction ● Understand and apply properties of operations and the relationship between addition and subtraction ● Add and subtract within 10 ● Work with addition and subtraction equations ● Extend the counting sequence	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively.

Unit 1: Suggested Open Educational Resources	1.OA.A.1 Sharing Markers 1.OA.B.3 Domino Addition 1.OA.B.4 Cave Game Subtraction 1.OA.D.7 Equality Number Sentences 1.OA.D.8 Kiri's Mathematics Match Game 1.NBT.A.1 Hundred Chart Digit Game		MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.
Unit 2 - 9 weeks **Add and Subtract within 20**	● 1.OA.A.1* ● 1.OA.D.7 ● 1.OA.D.8 ● 1.OA.B.3* ● 1.OA.C.6* ● 1.OA.A.2 ● 1.MD.C.4 ● 1.NBT. B.2a-b ● 1.NBT.B.3 ● 1.NBT.A.1*	● Represent and solve problems involving addition and subtraction ● Work with addition and subtraction equations ● Understand and apply properties of operations and the relationship between addition and subtraction ● Add and subtract within 20 ● Represent and interpret data ● Understand place value ● Extend the counting sequence	
Unit 2: Suggested Open Educational Resources	1.OA.A.1 School Supplies 1. OA.D.7 Valid Equalities? 1.OA.D.8 Find the Missing Number 1. OA.B.3 Doubles? 1.OA.C.6 $20 Dot Map 1.OA.A.2 Daisies in vases		

	1.NBT.B.2 Roll & Build 1.NBT.B.3 Ordering Numbers 1.NBT.A.1 Start/Stop Counting 2	

Unit 3 - 9 weeks **Place Value, Measurement & Shapes**	• 1.NBT. B.2c • 1.NBT.C.4* • 1.NBT.C.5 • 1.NBT.C.6 • 1.MD.A.1 • 1.MD.A.2 • 1.MD.B.3 • 1.OA.C.6*	• Understand place value • Use place value understanding and properties of operations to add and subtract • Measure lengths indirectly by iterating length units • Tell and write time • Add and subtract within 20	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.
Unit 3: Suggested Open Educational Resources	1.NBT.C.4 Ford and Logan Add 45+36 1.NBT.C.5 Number Square 1. MD.A.2 Measure Me! 1.MD.A.2 Measuring Blocks 1.MD.A.2 Growing Bean Plants 1.MD.B Making a clock 1.OA.C.6 Making a ten		
Unit 4 - 9 weeks **Reason with Shapes and their Attributes**	• 1.G.A.1 • 1.G.A.2 • 1.G.A.3 • 1.OA.A.1* • 1.OA.C.6* • 1.NBT.A.1* • 1.NBT.C.4*	• Reason with shapes and their attributes • Represent and solve problems involving addition and subtraction. • Add and subtract within 20 • Extend the counting sequence • Use place value understanding and properties of operations to add and subtract	
Unit 4: Suggested Open Educational Resources	1.G.A.1 All vs. Only some 1.G.A.1 3-D Shape Sort 1.G.A.2 Make Your Own Puzzle 1.G.A.2 Overlapping Rectangles 1.G.A.3 Equal Shares 1.OA.A.1 Twenty Tickets 1. NBT.A.1 Where Do I Go?		

Grade 1: Interdisciplinary Connections

____ Language Arts ____ Science ____ Social Studies ____ World Languages ____ Arts

21st Century Themes

___ Global Awareness ___ Financial, Economic, Business and Entrepreneurial Literacy ___ Civic Literacy ___ Health Literacy ___ Environmental Literacy

21st Century Life and Careers Standards

Career Ready Practices:

☒ 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2)

☒ 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)

☐ 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2)

☒ 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3

☒ 9.4.2.DC.3: Explain how to be safe online and follow safe practices when using the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).

☐ 9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments

☒ 9.4.2.TL.2: Create a document using a word processing application

☐ 9.4.2.TL.5: Describe the difference between real and virtual experiences

☐ 9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job..

☐ 9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community

☐ 9.1.2.CR.2: List ways to give back, including making donations, volunteering, and starting a business.

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Unit 1 Grade 1- Add and Subtract Within 10

Content Standards	Suggested Mathematical Practices and P21 Skills	Critical Knowledge & Skills
● 1. OA.A.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, *e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.* *(benchmarked)	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning. Critical Problem Solving Creativity and Innovation ICT Literacy	Concept(s): ● Symbol (unknowns) can be in any position. Students are able to: ● add, using objects and drawings, to solve word problems involving situations of adding to and putting together. ● subtract, using objects and drawings, to solve world problems involving situations of taking from and taking apart. Learning Goal 1: Use addition and subtraction within 10 to solve problems, including word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions.
● 1. OA.B.3. Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)* *(Students need not use formal terms for these properties)* *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Problem Solving Creativity and Innovation ICT Literacy	Concept(s): ● Knowing 4 + 3 means that 3 + 4 is also known (commutative property/fact families). ● When adding, the numbers need not be added in any particular order. Students are able to: ● add and subtract, within 10, using properties of operations as strategies (commutative property). Learning Goal 2: Apply properties of operations (commutative property) as strategies to add or subtract within 10.

● 1. OA.B.4. Understand subtraction as an unknown-addend problem. *For example, subtract 10 - 8 by finding the number that makes 10 when added to 8*	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Problem Solving Creativity and Innovation ICT Literacy	Concept(s): ● Subtraction can be represented as an unknown-addend problem. ● Finding 9 minus 3 means solving ? + 3 = 9 or 3 + ? = 9 (fact families). Students are able to: ● represent subtraction as an unknown addend problem. ● solve subtraction problems, within 10, using unknown addends. Learning Goal 3: Solve subtraction problems, within 10, by representing subtraction as an unknown added problem and finding the unknown addend

● 1. OA.C.5. Relate counting to addition and subtraction (e.g., by counting 2 to add 2).	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. Critical Problem Solving Creativity and Innovation	Concept(s): ● Counting can be used to add and subtract. Students are able to: ● count on to add. ● count back to subtract. Learning Goal 4: Count on to add and count backwards to subtract to solve addition and subtraction problems within 10.
● 1. OA.D.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 - 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.6 Attend to precision. MP.7 Look for and make use of structure. Critical Problem Solving Creativity and Innovation ICT Literacy	Concept(s): ● The meaning of the equal sign ● True and false statements ● The expression can be on the right side of the equal sign (*e.g. 7 = 8 – 1*). ● Both the left and right side of the equal sign may contain expressions (e.g. 5 + 2 = 1 + 4). Students are able to: ● determine if addition equations are true or false. ● determine if subtraction equations are true or false. Learning Goal 5: Determine if addition and subtraction equations, within 10, are true or false.

● 1. OA.D.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ - 3, 6 + 6 = _.* *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. Critical Problem Solving Communication and Collaboration Creativity and Innovation ICT Literacy	Concept(s): No new concept(s) introduced Students are able to: ● determine the unknown number that makes an equation true. ● solve addition or subtraction equations by finding the missing whole number. Learning Goal 6: Solve addition and subtraction equations, within 10, by finding the missing whole number in any position.
● 1. NBT. A.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Problem Solving Creativity and Innovation Information Literacy	Concept(s): ● Number names and the count sequence up to 100 Students are able to: ● count orally by ones up to 100. ● count up to 100 beginning at any number less than 100. ● read numerals up to 100. ● write numerals up to 100. ● represent a number of objects up to 100 with a written number.

		Learning Goal 7: Count to 100 orally, read and write numerals, and write numerals to represent the number of objects (up to 100).

Unit 1 Grade 1 -Add and Subtract Within 10

School/District Formative Assessment Plan School/District Summative Assessment Plan

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf

Classwork

Exit tickets

White boards

Four Corners

Individual and group work

Math journals

Smart Exchange activities
Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf

Benchmarks

Chapter tests

Performance tasks

Extended projects

Mad Minute Assessment

Renaissance Assessment

Rocket Math

Ten Marks

Benchmark Assessment Alternative Assessment

 Key:

Renaissance/STAR

MAP Testing

DRA Assessment

Benchmark Assessment within Envision/Go

Math/Eurek/iReady State Testing Results

Teacher Created Assessments

Performance Based Assessments

Extension Projects

Focus Mathematical Concepts

Prerequisite skills: This builds on the work in Kindergarten by having students use a variety of mathematical representations (e.g., objects, drawings, and equations) during their work. The unknown symbols should include boxes or pictures, and not letters.
K.OA.A.2
K.OA.A.2
K.CC.A.1
K.CC.B.4
K.CC.A.2
K.CC.C.6

Common Misconceptions:
Many children misunderstand the meaning of the equal sign. The equal sign means "is the same as" or the left side of the equation balances or is the same as right side of the equal sign. However, most primary students believe the equal sign tells you that the "answer is coming up" to the right of the equal sign. This misconception is over-generalized by only seeing examples of number sentences with an operation to the left of the equal sign and the answer on the right. First graders need to see equations written multiple ways, for example 5 + 7 = 12 and 12 = 5 + 7.

A second misconception that many students have is that it is valid to assume that a key word or phrase in a problem suggests the same operation will be used every time. For example, they might assume that the word left always means that subtraction must be used to find a solution. Providing problems in which key words like this are used to represent different operations is essential. For example, the use of the word left in this problem does not indicate subtraction as a solution method: Jose took the 8 stickers he no longer wanted

and gave them to Anna. Now Jose has 11 stickers left. How many stickers did Jose have to begin with? Students need to analyze word problems and make sense of them, rather than look for "tricks" to help them decide which operation to use. Avoid teaching key words to solve problems, instead emphasize understanding the situation.

Number Fluency: 1...OA.C.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.

District/School Tasks District/School Primary and Supplementary Resources

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.p df
Framework for 21st Century Learning

formative assessment material- Engageny.org under their New York State Mathematics Curriculum Materials:
https://www.engageny.org/sites/default/files/resource/attachments/g1-m1-full-module .pdf

http://www.p21.org/our-work/p21-framework

NJDOE-21st Century Life and Careers

Georgia Department of Education

http://www.state.nj.us/education/aps/cccs/career/

Arizona flip book

http://www.katm.org/flipbooks/1%20FlipBook%20Final%20CCSS%202014.pdf

North Carolina wikispaces

http://maccss.ncdpi.wikispaces.net/Elementary

Georgia Department of Education Grade

https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx
MobyMax.com
TECHNOLOGY CONNECTION •
https://play.dreambox.com/student/dbl/TeacherLessonQuickImagesMathrack41to100?
Students will count to 100

Happy Numbers.com

Waterford.com

 Key:

Essential Questions

How can we represent a set of objects using numerals?

What happens when we join two quantities or take one from another?

How can we find the total when we join two quantities?

How can we find what is left when we take one quantity from another?

How can we find the difference when we compare one quantity to another?

How can we represent problem situations?

What happens when we change the order of numbers when we add (or subtract)? Why?

How can we show that addition and subtraction are related through fact families?

How can we use different combinations of numbers and operations to represent the same quantity?

How can we represent a number in a variety of ways?

Special Education Students English Language Learners Students at Risk for School Failure Gifted and Talented Students Students with 504 Plans

● Provide a checklist for long, detailed tasks	● Use concrete examples of concepts before teaching the abstract	● Highlight important concepts to be learned in text of material ● Provide concrete examples for homework/class work assignments	● Use enVision Spanish Resources ● Provide text to speech for math problems	

- Use of translation dictionary or software
- Confer frequently
- Adapt a Strategy-Adjusting strategies for ESL students: http://www.teachersfirst.com/co n tent/esl/adaptstrat.cfm

- Tiered interventions following RTI framework
- RTI Intervention Bank
- NJDOE resources
- Utilize online resources such as www.tenmarks.com
- EnVision K-5 intervention

supports
- Modify activities/assignments/projects/a ssessments
- Provide an option for alternative activities/assignments/projects/a ssessments

- Provide higher-order questioning and discussion opportunities
- Utilize exploratory connections to higher grade concepts
- Provide a checklist for long, detailed tasks
- Use concrete examples of

concepts before teaching the abstract
- Highlight important concepts to be learned in text of material
- Provide concrete examples for homework/class work assignments

Key:

●Giveadditionalpresentationsby varyingthemethodsusing repetition,simplerexplanations andmodeling
●Givewrittendirectionsto supplementverbaldirections
●Familiarizestudentwithnew vocabularybeforebeginning lesson
●Utilizevisualaidsandgraphic organizers
●Utilizemanipulative,hands-on activities
●Providegraphpaperfor computation
●Additionaltimetocomplete activities/assignments/projects/a ssessments
●Modifyorprovideanoptionfor alternative activities/assignments/projects/a ssessments
●SmallGroup Instruction/Intervention/Remedi ation
●Individual Intervention/Remediation
●AdditionalSupportMaterials/ Onlineresources
●GuidedNotesorcopyofteacher notes
●Reviewprerequisiteskills

●AfterSchoolTutoring
●Familiarizestudentwithn ew vocabularybeforebeginni ng lesson
●Utilizevisualaidsandgrap hic organizers
●Utilizemanipulative,hand s-on activities

●GuidedNotesorcopyofteach er notes

●Additio nalSuppo rtMateria ls/ Onlineres ources

●Review prerequis iteskills
●http://w

ww.wida. us/standa rds/el p.aspx

●ModifyContent
●AdjustPacingofContent
●SmallGroupEnrichment
●IndividualEnrichment
●Higher-LevelText
●Providewholegroupenrich ment explorations
●Teachcognitiveand methodologicalskills
●Usecenter,stations,orcontra cts ●Organizeintegrated problem-solvingsimulations
●Proposeinterest-basedextension activities
●Createanenhancedsetof introductoryactivities(e. g. advance organizers, concept maps,conceptpuzzles
●Provideoptions,alternatives and choicestodifferentiateand broadenthecurriculum
●Proposeindependentproject

s basedonindividualinterests
●AdditionalSupportMaterial s/ Onlineresources
●Afterschoolclubs
●Tieredcenters
●Tieredassignments
●Giveadditionalpresentationsby varyingthemethodsusing repetition,simplerexplanations andmodeling
●Givewrittendirectionsto supplementverbaldirections
●Familiarizestudentwithnew vocabularybeforebeginning lesson
●Utilizevisualaidsandgraphic organizers
●Utilizemanipulative,hands-on activities
●Providegraphpaperfor computation
●Additionaltimetocomplete activities/assignments/projects/a ssessments
●Modifyorprovideanoptionfor alternative activities/assignments/projects/a ssessments
●SmallGroup Instruction/Intervention/Remedi ation

●Individual Intervention/Remediation

●AdditionalSupportMaterials/ Onlineresources

●GuidedNotesorcopyofteacher notes
●Reviewprerequisiteskills

●AfterSchoolTutoring

● Chunk activities/assignments/projects/assessments into manageable units
● Allow student to receive reading text in various forms (written, verbal, audio) r on a lower reading level
● Allow student to make test corrections or retake assessment
● Adjust Pacing of Content

● See IEPs of students for specific modifications

Vocabulary Ongoing Modifications

● Chunk activities/assignments/projects/assessments into manageable units
● Allow student to receive reading text in various forms (written, verbal, audio) r on a lower reading level
● Allow student to make test corrections or retake assessment ● Adjust Pacing of Content ● See 504 plan for specific accommodations

Building the language of mathematics

http://maccss.ncdpi.wikispaces.net/file/view/2014+Building+Vocabulary.pdf

Georgia Department of Education Grade 1 Intervention Table

https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx NC

Resources for k-2 Advanced Math Learners

http://ncaigirp.ncdpi.wikispaces.net/Mathematics+K-2

Differentiated centers

Extra time on task

Limited # of items

ELL:

http://www.wida.us/standards/elp.aspx

NJ Model Curriculum:

https://www.state.nj.us/education/bilingual/curriculum/

Achieve the Core:

https://achievethecore.org/aligned/ccss-aligned-materials-for-ell-students/

Instructional Best Practices and Exemplars

Learning to mathematize (the process of seeing and focusing on the mathematical aspects and ignoring the nonmathematical aspects. Mathematizing in first grade: Solving problems, reasoning, and Communicating, Connecting, and Representing Ideas. Modeling addition and subtraction situations with objects, fingers, and drawings is the foundation for algebraic problem solving. More difficult types of problems situations (change and collection situations) should be given from grade 1 on.

Provide opportunities for students to participate in shared problem-solving activities to solve word problems. Collaborate in small groups to develop problem-solving strategies using a variety of models such as drawings, words, and equations with symbols for the unknown numbers to find the solutions.

Additionally, students need the opportunity to explain, write and reflect on their problem-solving strategies. Children need many opportunities to use a variety of models, including discrete objects, length-based models (e.g., lengths of connecting cubes), and number paths, to model "part-whole", "adding to," "taking away from", and "comparing situations to develop an understanding of the meanings of addition and subtraction and strategies to solve such arithmetic problems.

Children need to understand the connections between counting and the operations of addition and subtraction (e.g., adding two is the same as "counting on" two). "Number paths" were used in the examples rather than "number lines". A great deal of confusion arises about what the term number line means. It is recommended that number lines not be used until grade 2 because they are conceptually too difficult for younger children.

In early childhood materials, including Kindergarten, the term number line or mental number line often really means a number path, such as in the common early childhood games where numbers are put on squares and children move along such a numbered path. Such number paths are counting models in which things are counted. Each square is a thing that can be counted, so these are appropriate for children age two through grade 1. A number path and a number line should be shown along with the meanings that children must understand and relate when using these models. A number line is a length model such as a ruler or a bar graph in which numbers are represented by the length from zero along a line segmented into equal lengths. Children need to count the length units on a number line, not the numbers.

Young children have difficulties with such a number line representation because they have difficulty seeing the units— they need to see things, so they focus on the numbers or the segmenting marks instead of on the lengths. Thus, they may count the starting point 0 and then be off by one, or they may focus on the spaces and be confused by the location of the numbers at the ends of the spaces.

Interdisciplinary Connections Technology Integration

- Language Arts - Vocabulary: students will connect everyday vocabulary to strengthen their understanding of mathematical terms
- Language Arts - Reading Strategies: students will utilize reading comprehension skills by acting out or drawing the order of important events in a story problem. Reading and writing stories to represent addition and subtraction
- Language Arts - Writing Strategies: students will create mathematical stories using numbers, pictures and words. ● Language Arts - Interactive Student Notebook
- Language Arts - Read Alouds
  - Science: work with data/make calculations involving measurements and other data across all modules
- Social Studies - Economics- connecting money as a means for helping people buy things they need or want; complete independent/partner projects to plan and market a good or service
  - **8.1.2.A.1** Identify the basic features of a digital device and explain its purpose.

- **8.1.2.E.1** Use digital tools and online resources to explore a problem or issue.

- **8.2.2.C.1** Brainstorm ideas on how to solve a problem or build a product.

Grade 1: Interdisciplinary Connections **____ Language Arts ____ Science ____ Social Studies ____ World Languages ____ Arts**
21st Century Themes

 Key:

___ Global Awareness ___ Financial, Economic, Business and Entrepreneurial Literacy ___ Civic Literacy ___ Health Literacy ___ Environmental Literacy

21st Century Life and Careers Standards

Career Ready Practices:

☒ 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2)

☒ 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)

☐ 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2)

☒ 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3

☒ 9.4.2.DC.3: Explain how to be safe online and follow safe practices when using the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).

☐ 9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments

☒ 9.4.2.TL.2: Create a document using a word processing application

☐ 9.4.2.TL.5: Describe the difference between real and virtual experiences

☐ 9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job..

☐ 9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community

☐ 9.1.2.CR.2: List ways to give back, including making donations, volunteering, and starting a business.

Unit 2 Grade 1- Add and Subtract Within 20		
Content Standards	**Suggested Standards for Mathematical Practice and P21 Skills**	**Critical Knowledge & Skills**
● 1. OA.A.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively.	Concept(s): ● Symbols can be used to represent unknown numbers. ● The symbol (unknowns) can be in any position. Students are able to:

together, taking apart, and comparing, with unknowns in all positions, *e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem*. *(benchmarked)	MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation ICT Literacy Communication and Collaboration	● add, using drawings and equations, to solve word problems involving situations of adding to and putting together. ● subtract, using drawings and equations, to solve world problems involving situations of taking from and taking apart. Learning Goal 1: Use addition and subtraction within 20 to solve problems, including word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions.
● 1. OA.D.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 - 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.* *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.6 Attend to precision. MP.7 Look for and make use of structure. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration	Concept(s): No new concept(s) introduced Students are able to: ● determine if addition equations are true or false ● determine if subtraction equations are true or false Learning Goal 2: Determine if addition and subtraction equations, within 20, are true or false.

● 1. OA.D.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ - 3, 6 + 6 = _.* *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration	Concept(s): No new concept(s) introduced Students are able to: ● determine the unknown number that makes an equation true. ● solve addition or subtraction equations by finding the missing whole number. Learning Goal 3: Solve addition and subtraction equations, within 20, by finding the missing whole number in any position.
● 1. OA.B.3. Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 =*	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation	Concept(s): ● When adding, the numbers need not be added in order. ● To add 2 + 6 + 4, the second two numbers can be added first to make a ten. [e.g., 2 + 6 + 4 = 2 + 10 = 12 (Associative Property)] Students are able to: ● add and subtract, within 20, using properties of operations as strategies. (Associative Property)

12. (Associative property of addition.) (Students need not use formal terms for these properties) *(benchmarked)	ICT Literacy Communication and Collaboration	Learning Goal 4: Apply properties of operations as strategies (Associative Property) to add or subtract within 20.

● 1. OA.C.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation ICT Literacy Communication and Collaboration	Concept(s): ● Different strategies can be used to add and subtract. Students will be able to: ● add and subtract within 20, using the following strategies: - counting on; - making ten; - composing numbers; - decomposing numbers leading to a ten; - relationship between addition and subtraction, and - creating equivalent but easier or known sums. ● fluently add or subtract whole numbers within 20. Learning Goal 5: Add and subtract whole numbers within 20 using various strategies: counting on, making ten, composing, decomposing, relationship between addition and subtraction, creating equivalent but easier or known sums, etc.
● 1. OA.A.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, *e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration Information Literacy ICT Literacy	Concept(s): ● Symbols can be used to represent unknown numbers. ● The symbol (unknowns) can be in any position. Students are able to: ● use *objects and drawings* to represent word problems that call for less than or equal to 20. Learning Goal 6: Solve addition word problems with three whole numbers with sums less than or equal to 20.

● 1. MD.C.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration Information Literacy ICT Literacy	Concept(s): ● Numbers can be organized to represent data. Students are able to: ● organize objects, representing data, in up to three categories. ● represent data with objects, drawings, or numerals, in up to three categories. ● ask and answer questions about: - the total number of data points; - the number of data points in each category, and - how many more or less are in one category than in another. Learning Goal 7: Organize, represent, and interpret data with up to three categories, compare the number of data points among the categories, and find the total number of data points.
● 1. NBT. B.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: 1. NBT. B.2. a. 10 can be thought of as a bundle of ten ones — called a "ten." 1. NBT. B.2. b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation ICT Literacy	Concept(s): ● Two digits represent amounts of tens and ones. ● 10 can be thought of as a bundle of ten ones — called a *ten.* Students are able to: ● compose numbers to 20. ● decompose numbers to 20. ● identify the value of the number in the tens or ones place. Learning Goal 8: Compose and decompose numbers to 20 to identify the value of the number in the tens and ones place.
● 1. NBT. B.3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	MP.2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation ICT Literacy	Concept(s): ● Use place value understanding to compare two digit numbers. ● Comparing numbers using symbols. Students are able to: ● use the meaning of tens and ones digits to compare 2 two-digit numbers using >, =, and < symbols. Learning Goal 9: Use the meaning of tens and ones digits to record comparisons of 2 two digit numbers using >, =, and < symbols.

● 1. NBT. A.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	Concept(s): ● Number names and the count sequence up to 120. Students are able to:

represent a number of objects with a written numeral *(benchmarked)	MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation ICT Literacy	● count orally by ones up to 120. ● count up to 120 beginning at any number less than 120. ● read numerals up to 120. ● write numerals up to 120. ● represent a number of objects up to 120 with a written number. Learning Goal 10: Count to 120 orally, read and write numerals, and write numerals to represent the number of objects (up to 120).

Unit 2 Grade 1- Add and Subtract within 20

School/District Formative Assessment Plan School/District Summative Assessment Plan

Delaware comparison documents

http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_Grade_1.pdf

formative assessment material- Engageny.org under their New York State Mathematics Curriculum Materials:
https://www.engageny.org/sites/default/files/resource/attachments/g1-m1-full-module. pdf

Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pd f

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-2.pd f

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-5.pd f

Classwork
Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-2.pdf

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-5.pdf

Benchmarks

Chapter tests

Performance tasks

Extended projects

Mad Minute Assessment

Renaissance Assessment

Rocket Math

Ten Marks

 Key:

Exit tickets

White boards

Individual and group work

Math journals

Four Corners

Benchmark Assessment Alternative Assessment

Renaissance/STAR

MAP Testing

DRA Assessment

Benchmark Assessment within Envision/Go Math/Eurek/iReady

State Testing Results

Teacher Created Assessments Performance Based Assessments

Extension Projects

Focus Mathematical Concepts: Add and Subtract within 20

.

Prerequisite skills: This builds on the work in Kindergarten by having students use a variety of mathematical representations (e.g., objects, drawings, and equations) during their work.
The unknown symbols should include boxes or pictures, and not letters.
K.OA.1
K.OA.2
K.OA.3
K.OA.4
K.OA.5
K.NBT.1

Common Misconceptions:
Students may include the starting number when they count back to subtract or count on to add.

Students may only add the first two addends, or compute the sum for the first two addends incorrectly and end up with an incorrect sum for three addends.

Students may think is that it is valid to assume that a key word or phrase in a problem suggests the same operation will be used every time. For example, they might assume that the word left always means that subtraction must be used to find a solution. Providing problems in which key words like this are used to represent different operations is essential.

Some students might struggle with "seeing" the repeated pattern in our "system" as they count. AND, the names of our teen numbers do not follow the names of all other 2 digit numbers, since the names of the later decades, such as twenty, thirty, and fifth do not necessarily connect to two, three, and five. Recording the numbers can draw students' attention to the 0-9 pattern in each place, not just the ones.

Often when students learn to use an aide (Pac Man, bird, alligator, etc.) for knowing which comparison sign (, =) to use, the students don't associate the real meaning and name with the sign. The use of the learning aids must be accompanied by the connection to the names: Less Than, > Greater Than, and = Equal To. More importantly, students need to begin to develop the understanding of what it means for one number to be greater than another. In Grade 1, it means that this number has more tens, or the same number of tens, but with more ones, making it greater. Additionally, the symbols are shortcuts for writing down this relationship. Finally, students need to begin to understand that both inequality symbols, < >, can create true statements about any two numbers where one is greater/smaller than the other, (15 < 28 and 28 >15).

Number Fluency: 1. OA.C.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.

District/School Tasks District/School Primary and Supplementary Resources

Delaware comparison documents

http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_Grade_1.pdf

Released item sets
https://sites.google.com/site/releaseditemsets/

Formative assessment material- Engageny.org under their New York State Mathematics Curriculum Materials:
https://www.engageny.org/sites/default/files/resource/attachments/g1-m1-full-module.pdf

Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.p df
https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-2.p df

Framework for 21st Century Learning

http://www.p21.org/our-work/p21-framework

NJDOE-21st Century Life and Careers

http://www.state.nj.us/education/aps/cccs/career/
Arizona flip book
http://www.katm.org/flipbooks/1%20FlipBook%20Final%20CCSS%202014.pdf

North Carolina wikispaces

http://maccss.ncdpi.wikispaces.net/Elementary

Georgia Department of Education Kindergarten

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-5.p df

Essential Questions

How can patterns help us understand numbers?
https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx

TECHNOLOGY CONNECTION:
https://play.dreambox.com/student/dbl/TeacherLessonQuickImagesMathrack41to100?
Students will count to 100

https://play.dreambox.com/student/dbl/TeacherLessonQuickImagesTenframe21to40
Students will use double ten frames to add/subtract

MobyMax.com

Happy Numbers.com

Waterford.com

How can we organize and display the data we collected into three categories to create a graph?

How can we use counting to compare objects in a set?

How can we use tally marks to help represent data in a table or chart?

How do we know if a set has more or less?

How do we know where a number lies on a number line?

How does a graph help us better understand the data collected?

What do the numerals represent in a two or three digit number?

What patterns can be found on the 0-99 chart?

What strategies can be used to find a missing number?

What strategy can we use to efficiently count a large quantity of objects?

What is estimating and when can you use it?

What do a 0-99 chart and number line have in common?

What is the value of a dime? A penny?

What is the largest digit we can use when representing amounts?

How do represent a collection larger than 9?

How does using 10 as a benchmark help us compose numbers?

How do we represent a collection of objects using tens and ones?

How can making equal groups of ten objects deepen my understanding of the base 10 number system?

How can large quantities be counted efficiently?

Special Education Students English Language Learners Students at Risk for School Failure Gifted and Talented Students Students with 504 Plans

● Provide a checklist for long, detailed tasks ● Use concrete examples of concepts before teaching the abstract ● Highlight important concepts to be learned in text of material ● Provide concrete examples for homework/class work assignments	● Give additional presentations by varying the methods using ● Use enVision Spanish Resources ● Provide text to speech for math problems ● Use of translation dictionary or software ● Confer frequently ● Adapt a Strategy-Adjusting strategies for ESL students: http://www.teachersfirst.com/co n tent/esl/adaptstrat.cfm	● Tiered interventions following RTI framework ● RTI Intervention Bank ● NJDOE resources ● Utilize online resources such as www.tenmarks.com ● EnVision K-5 intervention supports ● Modify activities/assignments/projects/a ssessments	● Provide an option for alternative activities/assignments/projects/a ssessments ● Provide higher-order questioning and discussion opportunities ● Utilize exploratory connections to higher grade concepts ● Modify Content ● Adjust Pacing of Content ● Provide a checklist for long, detailed tasks	● Use concrete examples of concepts before teaching the abstract ● Highlight important concepts to be learned in text of material ● Provide concrete examples for homework/class work assignments ● Give additional presentations by varying the methods using
27 | Page Key: repetition,simplerexplanations andmodeling ●Givewrittendirectionsto supplementverbaldirections ●Familiarizestudentwithnew vocabularybeforebeginning lesson ●Utilizevisualaidsandgraphic organizers ●Utilizemanipulative,hands-on activities ●Providegraphpaperfor computation ●Additionaltimetocomplete activities/assignments/projects/a	ssessments ●Modifyorprovideanoptionfor alternative activities/assignments/projects/a ssessments ●SmallGroup Instruction/Intervention/Remedi ation ●Individual Intervention/Remediation ●AdditionalSupportMaterials/ Onlineresources ●GuidedNotesorcopyofteacher notes ●Reviewprerequisiteskills	●AfterSchoolTutoring ●Chunk activities/assignments/projects/a ●Familiarizestudentwithn ew vocabularybeforebeginni ng lesson ●Utilizevisualaidsandgrap hic organizers ●Utilizemanipulative,hand s-on activities	●Additio nalSuppo rtMateria ●GuidedNotesorcopyofteach er notes	ls/ Onlineres ources

●Review prerequisiteskills
●http://www.wida.us/standards/elp.aspx
●SmallGroupEnrichment
●IndividualEnrichment
●Higher-LevelText
●Providewholegroupenrichment explorations
●Teachcognitiveand methodologicalskills
●Usecenter,stations,orcontracts ●Organizeintegrated problem-solvingsimulations
●Proposeinterest-basedextension activities
●Createanenhancedsetof introductoryactivities(e.g. advance organizers, concept maps,conceptpuzzles
●Provideoptions,alternatives and choicestodifferentiateand broadenthecurriculum
●Proposeindependentprojects basedonindividualinterests
●AdditionalSupportMaterials/ Onlineresources
●Afterschoolclubs
●Tieredcenters
●Tieredassignments repetition,simplerexplanations andmodeling
●Givewrittendirectionsto supplementverbaldirections
●Familiarizestudentwithnew vocabularybeforebeginning lesson
●Utilizevisualaidsandgraphic organizers
●Utilizemanipulative,hands-on activities
●Providegraphpaperfor computation
●Additionaltimetocomplete activities/assignments/projects/assessments
●Modifyorprovideanoptionfor alternative activities/assignments/projects/assessments
●SmallGroup Instruction/Intervention/Remediation
●Individual Intervention/Remediation
●AdditionalSupportMaterials/ Onlineresources
●GuidedNotesorcopyofteacher notes
●Reviewprerequisiteskills
●AfterSchoolTutoring
●Chunk activities/assignments/projects/assessments into manageable units
● Allow student to receive reading text in various forms (written, verbal, audio) r on a lower reading level
● Allow student to make test corrections or retake assessment
● Adjust Pacing of Content
● See IEPs of students for specific modifications

 Key:

Vocabulary Ongoing Modifications

ssessments into manageable units
● Allow student to receive reading text in various forms (written, verbal, audio) r on a lower reading level
● Allow student to make test corrections or retake assessment ● Adjust Pacing of Content ● See 504 plan for specific accommodations

https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx NC

Resources for k-2 Advanced Math Learners

http://ncaigirp.ncdpi.wikispaces.net/Mathematics+K-2

Differentiated centers

Extra time on task

Building the language of mathematics

http://maccss.ncdpi.wikispaces.net/file/view/2014+Building+Vocabulary.pdf

Georgia Department of Education Grade 1 Intervention Table

Limited # of items

ELL:

http://www.wida.us/standards/elp.aspx

NJ Model Curriculum:

https://www.state.nj.us/education/bilingual/curriculum/

Achieve the Core:

https://achievethecore.org/aligned/ccss-aligned-materials-for-ell-students/

Instructional Best Practices and Exemplars

In first grade, the students will sort a collection of items up to three categories. They will pose questions about the number of items in each category, the total number of items, and compare the number of items in categories. The total number of items to be sorted should be less than or equal to 100 to allow for sums and differences less than or equal to 100. This standard lends itself to the integration of the first-grade geometry concepts.

The beginning concepts of place value are developed in Grade 1 with the understanding of ones and tens. The major concept is that putting ten ones together makes a ten and that there is a way to write that down so the same number is always understood.

Students move from counting by ones, to creating groups and ones, to tens and ones. It is essential at this grade for students to see and use multiple representations of making tens using base-ten blocks, bundles of tens and ones, and ten-frames. Making the connections among the representations, the numerals and the words are very important. Students need to connect these different representations for the numbers 0 to 99.

Students need to move through a progression of representations to learn a concept. They start with a concrete model, move to a pictorial or representational model, then an abstract model. For example, ask students to place a handful of small objects in one region and a handful in another region. Next, have them draw a picture of the objects in each region. They can draw a likeness of the objects or use a symbol for the objects in their drawing. Then they count the physical objects or the objects in their drawings in each region and use numerals to represent the two counts. They also say and write the number word. Now students can compare the two numbers using an inequality symbol or an equal sign.

Students can create real or cluster graphs after they have had multiple experiences with sorting objects according to given categories. The teacher should model a cluster graph several times before students make their own. A cluster graph in Grade 1 has two or three labeled loops or regions (categories).

Students are building the foundation for Venn diagram understandings in later grades. Students place items inside the regions that represent a category that they chose. Items that do not fit in a category are placed outside of the loops or regions. Students can place items in a region that overlaps the categories if they see a connection between categories. Ask questions that compare the number of items in each category and the total number of items inside and outside of the regions. Ask students to sort a collection of items in up to three categories. Then ask questions about the number of items in each category and the total number of items. Also ask students to compare the number of items in each category. The total number of items to be sorted should be less than or equal to 100 to allow for sums and differences less than or equal to 100 using the numbers 0 to 100.

Connect to the geometry content studied in Grade 1. Provide categories and have students sort identical collections of different geometric shapes. After the shapes have been sorted, ask these questions: How many triangles are in the collection? How many rectangles are there? How many triangles and rectangles are there? Which category has the most items? How many more? Which category has the least? How many less?

Interdisciplinary Connections Technology Integration

● Language Arts - Vocabulary: students will connect everyday vocabulary to strengthen their understanding of mathematical terms ● Language Arts - Reading Strategies: students will utilize reading comprehension skills by acting out or drawing the order of important events in a story problem. Reading and writing stories to represent addition and subtraction
● Language Arts - Writing Strategies: students will create mathematical stories using numbers, pictures and words. ● Language Arts - Interactive Student Notebook
● Language Arts - Read Alouds
● Science: work with data/make calculations involving measurements and other data across all modules
● Social Studies - Economics- connecting money as a means for helping people buy things they need or want; complete independent/partner projects to plan and market a good or service
  ● **8.1.2.A.1** Identify the basic features of a digital device and explain its purpose.
  ● **8.1.2.E.1** Use digital tools and online resources to explore a problem or issue.
  ● **8.2.2.C.1** Brainstorm ideas on how to solve a problem or build a product.

Grade 1: Interdisciplinary Connections
____ Language Arts ____ Science ____ Social Studies ____ World Languages ____ Arts
21st Century Themes
___ Global Awareness ___ Financial, Economic, Business and Entrepreneurial Literacy ___ Civic Literacy ___ Health Literacy ___ Environmental Literacy

21st Century Life and Careers **Standards**

Career Ready Practices:

☒ 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2)

☒ 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)

☐ 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2)

☒ 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3

☒ 9.4.2.DC.3: Explain how to be safe online and follow safe practices when using the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).

☐ 9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments

☒ 9.4.2.TL.2: Create a document using a word processing application

☐ 9.4.2.TL.5: Describe the difference between real and virtual experiences

☐ 9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job..

☐ 9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community

☐ 9.1.2.CR.2: List ways to give back, including making donations, volunteering, and starting a business.

9.2.4.A.1 Identify various life roles and civic work-related activities in the school, home, and community.

Unit 3 Grade 1- Place Value, Measurement and Shapes		
Content Standards	**Suggested Standards for Mathematical Practice and P21 Skills**	**Critical Knowledge & Skills**
● 1. NBT. B.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: 1. NBT.B.2.c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving	Concept(s): ● Two digits represent amounts of tens and ones. ● The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). Students are able to: ● compose tens to make numbers up to 90. ● decompose numbers up to 90, into tens. ● identify the value of the number in the tens or ones place.

 Key:

	Creativity and Innovation ICT Literacy	Learning Goal 1: Compose and decompose numbers to 90 into tens, identifying the value of the number in the tens and ones place.

● 1. NBT. C.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g. base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration Information Literacy ICT Literacy	Concept(s): ● In adding two-digit numbers, add tens with tens and ones with ones. ● In adding two-digit numbers, sometimes it is necessary to compose a ten. Students are able to: ● use concrete models and drawings with a strategy based on place value to add a two-digit number and a one-digit number. ● use concrete models and drawings with properties of operations to add a two-digit number and a one-digit number. ● use concrete models and drawings with a strategy based on place value to add a two-digit number and a multiple of 10. ● use concrete models and drawings with properties of operations to add a two-digit number and a multiple of 10. ● explain or show how the model relates to the strategy. Learning Goal 2: Add a 2-digit and a 1-digit number using concrete models and drawings with a place value strategy or properties of operations; explain or show how the model relates to the strategy (sums within 100). Learning Goal 3: Add a 2-digit number and a multiple of 10, using concrete models and drawings with a place value strategy or properties of operations. Explain or show how the model relates to the strategy (sums within 100).
● 1. NBT. C.5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.7 Look for and make use of structure. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration Information Literacy ICT Literacy	Concept(s): No new concept(s) introduced Students are able to: ● given a two-digit number, find 10 more than the number without counting. ● given a two-digit number, find 10 less than the number without counting. ● explain, given a two-digit number, how to find 10 more or ten less than the number without counting. Learning Goal 4: Explain, given a two-digit number, how to find 10 more or ten less than the number without having to count.
● 1. NBT. C.6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in	MP.2 Reason abstractly and quantitatively.	Concept(s): No new concept(s) introduced Students are able to:

the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically MP.7 Look for and make use of structure. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration Information Literacy ICT Literacy	● use concrete models and drawings with a strategy based on place value to subtract a multiple of 10 from a multiple of 10 (both within the range 10-90). ● use concrete models and drawings with properties of operations to subtract a multiple of 10 from a multiple of 10 (both within the range 10-90). ● explain or show how the model relates to the strategy. Learning Goal 5: Subtract a multiple of 10 from a multiple of 10 (both within the range 10-90) using concrete models and drawings with a place value strategy or properties of operations. Explain or show how the model relates to the strategy (sums within 100).
● 1. MD.A.1. Order three objects by length; compare the lengths of two objects indirectly by using a third object	MP.6 Attend to precision. MP.7 Look for and make use of structure. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration	Concept(s): ● Objects can be compared and ordered based on length. Students will be able to: ● compare the length of two objects. ● compare the length of two objects by using a third object as a measuring tool. ● order three objects by length. Learning Goal 6: Order three objects by length and compare the lengths of two objects by using the third object (e.g., if the crayon is shorter than the marker and the marker is shorter than the pencil then the crayon is shorter than the pencil).
● 1. MD.A.2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*	MP.6 Attend to precision. MP.7 Look for and make use of structure. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration	Concept(s): ● The length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Students will be able to: ● lay multiple copies of a shorter object (the length unit) end to end. ● use a shorter object to express the length of a longer object. Learning Goal 7: Order three objects by length and compare the lengths of two objects by using the third object (e.g., if the crayon is shorter than the marker and the marker is shorter than the pencil then the crayon is shorter than the pencil).

● 1. MD.B.3. Tell and write time in hours and half-hours using analog and digital clocks	MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): ● Time is represented on analog and on digital clocks. ● Analog clocks have *hands* that indicate the time in hours and minutes. Students are able to:

	Critical Thinking and Problem Solving Creativity and Innovation	● tell and write time in hours using analog and digital clocks. ● tell and write time in half-hours using analog and digital clocks. ● use the term *o'clock* in reporting time to the hour. Learning Goal 8: Tell and write time to the half-hour using the term *o'clock* and using digital notation (include both analog and digital clocks).
● 1. OA.C.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation Information Literacy ICT Literacy	Concept(s): ● Different strategies can be used to add and subtract. Students will be able to: ● add and subtract within 20, using the following strategies: - counting on; - making ten; - composing numbers; - decomposing numbers; - relationship between addition and subtraction, and - creating equivalent but easier or known sums. ● fluently add or subtract whole numbers within 20. Learning Goal 9: Add and subtract whole numbers within 20 using various strategies: counting on, making ten, composing, decomposing, relationship between addition and subtraction, creating equivalent but easier or known sums, etc.

Unit 3 Grade 1 Place Value, Measurement and Shapes

School/District Formative Assessment Plan School/District Summative Assessment Plan

Released item sets https://sites.google.com/site/releaseditemsets/

formative assessment material- Engageny.org under their New York State Mathematics Curriculum Materials:
https://www.engageny.org/sites/default/files/resource/attachments/g1-m1-full-module .pdf

Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-4.p df

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-5.p df

Classwork

Exit tickets

White boards

Individual and group work

Math journals

Smart Exchange activities
Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-4.pdf
https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-5.pdf

Benchmarks

Chapter tests

Performance tasks

Extended projects

Benchmark Assessment Alternative Assessment

Renaissance/STAR MAP Testing

Performance Based Assessments

Teacher Created Assessments

DRA Assessment

Benchmark Assessment within Envision/Go Math/Eurek/iReady Extension Projects

State Testing Results

Focus Mathematical Conc

epts- Place Value, Measurement and Shapes

Prerequisite skills:
K.CC.A.2
K.CC.A.1
K.CC.B.4
K.NBT.1
K.MD.1
K.MD.2
K.NS.2
K.OA.A.2
K.OA.A.3
K.OA.A.4

K.OA.A.5

Common Misconceptions:
Students lack the concept that 10 in any position (place) makes one (group) and in the next position and vise-versa.

Students may not align the measuring tool with the end of the object.

Students may confuse the hour hand and the minute hand.

Some students may view the measurement process as a procedural counting task. They might count the markings on a ruler rather than the spaces between (the units of measure). Students

need numerous experiences measuring lengths with student-made tapes or rulers with numbers in the center of the spaces.

 Key:
Number Fluency: 1. OA.C.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.

District/School Tasks District/School Primary and Supplementary Resources Delaware comparison documents

Framework for 21st Century Learning

http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_Grade_1.pdf

Released item sets
https://sites.google.com/site/releaseditemsets/

Formative assessment material- Engageny.org under their New York State
Mathematics Curriculum Materials:
https://www.engageny.org/sites/default/files/resource/attachments/g1-m1-full-module .pdf

Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-4.p df
https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-5.p df

Essential Questions
http://www.p21.org/our-work/p21-framework

NJDOE-21st Century Life and Careers

http://www.state.nj.us/education/aps/cccs/career/
Arizona flip book
http://www.katm.org/flipbooks/1%20FlipBook%20Final%20CCSS%202014.pdf

North Carolina wikispaces

http://maccss.ncdpi.wikispaces.net/Elementary

Georgia Department of Education Kindergarten

https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx

TECHNOLOGY CONNECTION :
https://play.dreambox.com/student/dbl/TeacherLessonQuickImagesTenframe21to40?

Students will use double ten frames to add/subtract

Smart Exchange

Super Teachers

Renaissance data

Math and Learning Videos 4 Kids

 Key:

What is the largest digit we can use when representing amounts?

How do represent a collection larger than 9?

How does using 10 as a benchmark help us compose numbers?

How do we represent a collection of objects using tens and ones?

How can making equal groups of ten objects deepen my understanding of the base 10 number system? How can large quantities be counted efficiently?

How can words be used to illustrate the comparison of numbers?

How can benchmark numbers build our understanding of numbers?

How can we measure the length of an object?

What can we use to measure objects?

How can we tell which of two objects is longer than the other?

How can we order a group of objects by their length?

How does using an object help us when measuring another object?

Why are the measurements of classmates different?

Why would an estimate be helpful when measuring?

When is an estimate good enough?

When should I measure instead of using an estimate?

How can we compare the length of a set of objects?

How are objects used to measure other objects?

 Key:

How are measuring units selected?

How do measurements help compare objects?

Why is telling time important?

How do you use time in your daily life?

How can we measure time?

What does the hour hand on a clock tell us?

Why is it important to know the difference between the two hands?

Why do we need to be able to tell time?

How do we show our thinking with pictures and words?

How does time impact my day?

What does the minute hand on a clock tell us?

What do I know about time? Why is telling time important?

How do you use time in your daily life?

Special Education Students English Language Learners Students at Risk for School Failure Gifted and Talented Students Students with 504 Plans

● Provide a checklist for long, detailed tasks
● Use concrete examples of concepts before teaching the abstract
● Highlight important concepts to be learned in text of material
● Use enVision Spanish Resources ● Provide text to speech for math problems
● Use of translation dictionary or software
● Confer frequently

● Tiered interventions following RTI framework
● RTI Intervention Bank ● NJDOE resources
● Utilize online resources such as www.tenmarks.com
● Modify activities/assignments/projects/assessments
● Provide an option for alternative activities/assignments/projects/assessments
● Provide a checklist for long, detailed tasks
● Use concrete examples of concepts before teaching the abstract
● Highlight important concepts to be learned in text of material

Key:

● Provide concrete examples for homework/class work assignments
● Give additional presentations by varying the methods using repetition, simpler explanations and modeling
● Give written directions to supplement verbal directions ● Familiarize student with new vocabulary before beginning lesson
● Utilize visual aids and graphic organizers
● Utilize manipulative, hands-on activities
● Provide graph paper for computation
● Additional time to complete activities/assignments/projects/assessments
● Modify or provide an option for alternative activities/assignments/projects/assessments
● Small Group Instruction/Intervention/Remediation
● Individual Intervention/Remediation
● Additional Support Materials/ Online resources
● Adapt a Strategy-Adjusting strategies for ESL students: http://www.teachersfirst.com/content/esl/adaptstrat.cfm
● Familiarize student with new vocabulary before beginning lesson
● Utilize visual aids and graphic organizers
● Utilize manipulative, hands-on activities
● Additional Support Materials/ Online resources
● Guided Notes or copy of teacher notes
● Review prerequisite skills ● http://www.wida.us/standards/elp .aspx
● EnVision K-5 intervention supports
● Provide higher-order questioning and discussion opportunities ● Utilize exploratory connections to higher grade concepts
● Modify Content
● Adjust Pacing of Content ● Small Group Enrichment ● Individual Enrichment
● Higher-Level Text
● Provide whole group enrichment explorations
● Teach cognitive and methodological skills
● Use center, stations, or contracts ● Organize integrated problem-solving simulations ● Propose interest-based extension activities
● Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles
● Provide options, alternatives and choices to differentiate and broaden the curriculum
● Propose independent projects based on individual interests ● Additional Support Materials/ Online resources
● After school clubs
● Tiered centers
● Tiered assignments
● Provide concrete examples for homework/class work assignments
● Give additional presentations by varying the methods using repetition, simpler explanations and modeling
● Give written directions to supplement verbal directions ● Familiarize student with new vocabulary before beginning lesson
● Utilize visual aids and graphic organizers
● Utilize manipulative, hands-on activities
● Provide graph paper for computation
● Additional time to complete activities/assignments/projects/assessments
● Modify or provide an option for alternative activities/assignments/projects/assessments
● Small Group Instruction/Intervention/Remediation
● Individual Intervention/Remediation
● Additional Support Materials/ Online resources

Key:

● Guided Notes or copy of teacher notes
● Review prerequisite skills
● After School Tutoring
● Chunk activities/assignments/projects/assessments into manageable units
● Allow student to receive reading

text in various forms (written, verbal, audio) r on a lower reading level
● Allow student to make test corrections or retake assessment
● Adjust Pacing of Content
● See IEPs students for specific modifications

Vocabulary Ongoing Modifications
● Guided Notes or copy of teacher notes
● Review prerequisite skills ● After School Tutoring
● Chunk activities/assignments/projects/as sessments into manageable units ● Allow student to receive reading text in various forms (written, verbal, audio) r on a lower reading level
● Allow student to make test corrections or retake assessment ● Adjust Pacing of Content ● See 504 plan for specific accommodations

https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx NC

Resources for k-2 Advanced Math Learners

http://ncaigirp.ncdpi.wikispaces.net/Mathematics+K-2

Differentiated centers

Extra time on task

Building the language of mathematics

http://maccss.ncdpi.wikispaces.net/file/view/2014+Building+Vocabulary.pdf

Limited # of items

ELL:

http://www.wida.us/standards/elp.aspx

NJ Model Curriculum:

https://www.state.nj.us/education/bilingual/curriculum/

Achieve the Core:

https://achievethecore.org/aligned/ccss-aligned-materials-for-ell-students/

Instructional Best Practices and Exemplars

Provide multiple and varied experiences that will help students develop a strong sense of numbers based on comprehension – not rules and procedures. Number sense is a blend of comprehension of numbers and operations and fluency with numbers and operations. Students gain computational fluency (using efficient and accurate methods for computing) as they come to understand the role and meaning of arithmetic operations in number systems.

Students should solve problems using concrete models and drawings to support and record their solutions. It is important for them to share the reasoning that supports their solution strategies with their classmates.

Students will usually move to using base-ten concepts, properties of operations, and the relationship between addition and subtraction to invent mental and written strategies for addition and subtraction. Help students share, explore, and record their invented strategies. Recording the expressions and equations in the strategies horizontally encourages students to think about the numbers and the quantities they represent. Encourage students to try the mental and written strategies created by their classmates.

Students are asked to use multiple copies of one object to measure a larger object. This concept is referred to as iteration. Through numerous experiences and careful questioning by the teacher, students will recognize the importance of making sure that there are not any gaps or overlaps in order to get an accurate measurement. This concept is a foundational building block for the concept of area in 3rd Grade.

Students are asked to work with categorical data by organizing, representing and interpreting data. Students should have experiences posing a question with 3 possible responses and then work with the data that they collect.

This standard asks students to use multiple copies of one object to measure a larger object. This concept is referred to as iteration. Through numerous experiences and careful questioning by the teacher, students will recognize the importance of making sure that there are not any gaps or overlaps in order to get an accurate measurement. This concept is a foundational building block for the concept of area in 3rd Grade. Example: How long is the paper in terms of 1 inch paper clips? Measurement units share the attribute being measured. Students need to use as many copies of the length unit as necessary to match the length being measured. For instance, use large footprints with the same size as length units. Place the footprints end to end, without gaps or overlaps, to measure the length of a room to the nearest whole footprint. Use language that reflects the approximate nature of measurement, such as the length of the room is about 19 footprints. Students need to also measure the lengths of curves and other distances that are not straight lines.

The beginning concepts of place value are developed in Grade 1 with the understanding of ones and tens. The major concept is that putting ten ones together makes a ten and that there is a way to write that down so the same number is always understood. Students move from counting by ones, to creating groups and ones, to tens and ones. It is essential at this grade for students to see and use multiple representations of making tens using base-ten blocks, bundles of tens and ones, and ten-frames.

Making the connections among the representations, the numerals and the words are very important. Students need to connect these different representations for the numbers 0 to 99. Students need to move through a progression of representations to learn a concept. They start with a concrete model, move to a pictorial or representational model, then an abstract model. For example, ask students to place a handful of small objects in one region and a handful in another region. Next, have them draw a picture of the objects in each region. They can draw a likeness of the objects or use a symbol for the objects in their drawing. Then they count the physical objects or the objects in their drawings in each region and use numerals to represent the two counts. They also say and write the number word. Now students can compare the two numbers using an inequality symbol or an equal sign.

Students are likely to experience some difficulties learning about time. On an analog clock, the little hand indicates approximate time to the nearest hour and the focus is on where it is pointing. The big hand shows minutes before and after an hour and the focus is on distance that it has gone around the clock or the distance yet to go for the hand to get back to the top. It is easier for students to read times on digital clocks, but these do not relate times very well.

Students need to experience a progression of activities for learning how to tell time. Begin by using a one-handed clock to tell times in hour and half-hour intervals, then discuss what is happening to the unseen big hand. Next use two real clocks, one with the minute hand removed, and compare the hands on the clocks. Students can predict the position of the missing big hand to the nearest hour or half-hour and check their prediction using the two-handed clock. They can also predict the display on a digital clock given a time on a one- or two-handed analog clock and vice-versa. Have students tell the time for events in their everyday lives to the nearest hour or half hour. Make a variety of models for analog clocks. One model uses a strip of paper marked in half hours. Connect the ends with tape to form the strip into a circle.

Interdisciplinary Connections Technology Integration

 Key:

- Language Arts - Vocabulary: students will connect everyday vocabulary to strengthen their understanding of mathematical terms
- Language Arts - Reading Strategies: students will utilize reading comprehension skills by acting out or drawing the order of important events in a story problem. Reading and writing stories to represent addition and subtraction
- Language Arts - Writing Strategies: students will create mathematical stories using numbers, pictures and words.
- Language Arts - Interactive Student Notebook
- Language Arts - Read Alouds
- Science: work with data/make calculations involving measurements and other data across all modules
- Social Studies - Economics- connecting money as a means for helping people buy things they need or want; complete independent/partner projects to plan and market a good or service
- **8.1.2.A.1** Identify the basic features of a digital device and explain its purpose.
- **8.1.2.E.1** Use digital tools and online resources to explore a problem or issue.
- **8.2.2.C.1** Brainstorm ideas on how to solve a problem or build a product.

Grade 1: Interdisciplinary Connections
____ Language Arts ____ Science ____ Social Studies ____ World Languages ____ Arts
21st Century Themes
___ Global Awareness ___ Financial, Economic, Business and Entrepreneurial Literacy ___ Civic Literacy ___ Health Literacy ___ Environmental Literacy

21st Century Life and Careers Standards

Career Ready Practices:

☒ 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2)

☒ 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)

☐ 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2)

☒ 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3

☒ 9.4.2.DC.3: Explain how to be safe online and follow safe practices when using ommunity.

the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).

☐ 9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments

☒ 9.4.2.TL.2: Create a document using a word processing application

☐ 9.4.2.TL.5: Describe the difference between real and virtual experiences

☐ 9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job..

☐ 9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community

☐ 9.1.2.CR.2: List ways to give back, including making donations, volunteering, and starting a business.

Unit 4 Grade 1- Reason with Shapes and Their Attributes		
Content Standards	**Suggested Standards for Mathematical Practice and P21 Skills**	**Critical Knowledge & Skills**
● 1. G.A.1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes	MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.7 Look for and make use of structure.	Concept(s): ● Defining attributes versus non-defining attributes. Students are able to:

(e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration	● name attributes that define two-dimensional shapes (square, triangle, rectangle, regular hexagon). ● name attributes that do not two-dimensional shapes. ● build and draw shapes when given defining attributes. Learning Goal 1: Name the attributes of a given two-dimensional shape (square, triangle, rectangle, regular hexagon), distinguishing between defining and non-defining attributes. Learning Goal 2: Build and draw shapes when given defining attributes.
● 1. G.A.2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.	MP.4 Model with mathematics. MP.7 Look for and make use of structure. Communication and Collaboration Critical Thinking and Problem Solving	Concept(s): ● Shapes can be composed from other shapes (e.g. trapezoids can be composed from triangles). ● New shapes can be composed from composite shapes. Students are able to: ● create a composite shape using two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles). ● create a composite shape using three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders). ● compose *new* shapes from the *composite* shapes. Learning Goal 3: Create a composite shape by composing two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles and quarter circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders), and compose new shapes from the composite shape.

● 1. G.A.3. Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.6 Attend to precision. MP.4 Model with mathematics. MP.7 Look for and make use of structure. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration Information Literacy	Concept(s): ● Shapes can be partitioned into equal parts or shares. ● Equal shares are named based on the number of shares that make the whole (e.g. halves, fourths, quarters). ● Shares can be described based on their relation to the whole (e.g. *half of*, *fourth of*, *quarter of*). ● The whole can be described based on the number of shares. ● Decomposing a whole into more equal shares creates smaller shares. Students are able to: ● partition circles and rectangles into two or four equal shares. ● distinguish equal shares from those that are not equal. ● describe shares using the words halves, fourths, and quarters.

		● describe the relationship between the whole and the share using the phrases *half of*, *fourth of*, and *quarter of*. ● describe the whole as *two of*, or *four of* the shares. ● decompose a whole into a greater number of equal shares and identify the new shares as smaller. Learning Goal 4: Partition circles and rectangles into two or four equal shares, describing the shares using halves, fourths, and quarters and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole circle (or rectangle) partitioned into two or four equal shares as *two of*, or *four of* the shares.

● 1. OA.A.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, *e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem*. *(benchmarked)	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration Information Literacy ICT Literacy	Concept(s): ● Symbols can be used to represent unknown numbers. ● The symbol (unknowns) can be in any position. Students are able to: ● add, using objects and drawings, to solve word problems involving situations of adding to and putting together. ● subtract, using objects and drawings, to solve world problems involving situations of taking from and taking apart. Learning Goal 5: Use addition and subtraction within 20 to solve problems, including word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions.
● 1. OA.C.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 –	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation ICT Literacy	Concept(s): ● Different strategies can be used to add and subtract. Students will be able to: ● add and subtract within 20, using the following strategies: - counting on; - making ten; - composing numbers; - decomposing numbers; - relationship between addition and subtraction, and - creating equivalent but easier or known sums. ● fluently add or subtract whole numbers within 20.

8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13) *(benchmarked)		Learning Goal 6: Add and subtract whole numbers within 20 using various strategies: counting on, making ten, composing, decomposing, relationship between addition and subtraction, creating equivalent but easier or known sums, etc.
● 1. NBT. A.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation ICT Literacy	Concept(s): ● Number names and the count sequence up to 120. Students are able to: ● count orally by ones up to 120. ● count up to 120 beginning at any number less than 120. ● read numerals up to 120. ● write numerals up to 120. ● represent a number of objects up to 120 with a written number. Learning Goal 7: Count to 120 orally, read and write numerals, and write numerals to represent the number of objects (up to 120).
● 1. NBT. C.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g. base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning. Critical Thinking and Problem Solving Creativity and Innovation Communication and Collaboration Information Literacy	Concept(s): ● In adding two-digit numbers, add tens with tens and ones with ones. ● In adding two-digit numbers, sometimes it is necessary to compose a ten. Students are able to: ● use concrete models and drawings with a strategy based on place value to add a two-digit number and a one-digit number. ● use concrete models and drawings with properties of operations to add a two-digit number and a one-digit number. ● use concrete models and drawings with a strategy based on place value to add a two-digit number and a multiple of 10. ● use concrete models and drawings with properties of operations to add a two-digit number and a multiple of 10. ● explain or show how the model relates to the strategy. Learning Goal 8: Add a 2-digit and a 1-digit number using concrete models and drawings with a place value strategy or properties of operations; explain or show how the model relates to the strategy (sums within 100). Learning Goal 9: Add a 2-digit number and a multiple of 10, using concrete models and drawings with a place value strategy or properties of operations. Explain or show how the model relates to the strategy (sums within 100).

Unit 4 Grade 1 Reason with Shapes and Their Attributes

School/District Formative Assessment Plan School/District Summative Assessment Plan .

Released item sets
https://sites.google.com/site/releaseditemsets/

formative assessment material- Engageny.org under their New York State Mathematics Curriculum Materials:
https://www.engageny.org/sites/default/files/resource/attachments/g1-m1-full-module.pdf

Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-6.pdf

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf

Classwork

Exit tickets

White boards

Individual and group work

Math journals

Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-6.pdf

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-3.pdf

Benchmarks

Chapter tests

Performance tasks

Extended projects

Benchmark Assessment *Alternative Assessment*

Renaissance/STAR

MAP Testing

DRA Assessment

Benchmark Assessment within Envision/Go Math
Teacher Created Assessments Performance Based Assessments

Extension Projects

State Testing Results

Focus Mathematical Concepts- Reason with Shapes and Their Attributes

Prerequisites:
K.G.2
K.G.3
K.G.4
K.G.5
K.G.6
K.NBT.1
K.OA.1
K.OA.2
K.OA.5

Common Misconceptions:
Students may think that a square that has been rotated so that the sides form 45-degree angles with the vertical diagonal is no longer a square. They need to have experiences with shapes in different orientations. For example, in the building-shapes strategy above, ask students to orient the smaller shapes in different ways. Some students may think that the size of the equal shares is directly related to the number of equal shares. For example, they think that fourths are larger than halves because there are four fourths in one whole and only two halves in one whole.

Students need to focus on the change in the size of the fractional parts as recommended in the folding shapes strategy. The first activity in the unit Introduction to Fractions for Primary Students, includes a link, Parts of a Whole, to an interactive manipulative. It allows students to divide a circle into the number of equal parts that they choose.
http://mathforum.org/varnelle/knum.html

Number Fluency:
1. OA.C.6. Add/Subtract within 20- By the end of the year, know from memory all sums of two one-digit numbers.
Add/Subtract within 100 (pencil and paper)

District/School Tasks District/School Primary and Supplementary Resources Delaware comparison documents

Key:
http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/111/Math_Grade_1.pdf

Released item sets
https://sites.google.com/site/releaseditemsets/

Formative assessment material- Engageny.org under their New York State Mathematics Curriculum Materials:
https://www.engageny.org/sites/default/files/resource/attachments/g1-m1-full-module.p df

Georgia Department of Education

https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-6.pdf

Essential Questions

What are attributes?

Framework for 21st Century Learning

How can shapes be sorted?

How are shapes used in our world?
http://www.p21.org/our-work/p21-framework

NJDOE-21st Century Life and Careers

http://www.state.nj.us/education/aps/cccs/career/

Arizona flip book
http://www.katm.org/flipbooks/1%20FlipBook%20Final%20CCSS%202014.pdf

North Carolina wikispaces

http://maccss.ncdpi.wikispaces.net/Elementary

Georgia Department of Education Kindergarten

https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx

Technology Link:
http://illuminations.nctm.org/activitydetail.
Illuminations pattern blocks website

Smart Exchange

Super Teachers

Math and Learning Videos 4 Kids

 Key:

What makes shapes different from each other?

How can I create a shape?

How do shapes fit together and come apart?

Here can we find shapes in the real world?

What is a 2-dimensional shape?

What is a 3-dimensional shape?

How are shapes alike and different?

How can we divide shapes into equal parts?

How do we know when parts are equal?

How can we divide shapes into equal parts?

Special Education Students English Language Learners Students at Risk for School Failure Gifted and Talented Students Students with 504 Plans

- Provide a checklist for long, detailed tasks
- Use concrete examples of concepts before teaching the abstract
- Highlight important concepts to be learned in text of material
- Provide concrete examples for homework/class work assignments
- Give additional presentations by varying the methods using
- Use enVision Spanish Resources
- Provide text to speech for math problems
- Use of translation dictionary or software
- Confer frequently
- Adapt a Strategy-Adjusting strategies for ESL students: http://www.teachersfirst.com/content/esl/adaptstrat.cfm
- Familiarize student with new vocabulary before beginning lesson
- Tiered interventions following RTI framework
- RTI Intervention Bank
- NJDOE resources
- Utilize online resources such as www.tenmarks.com
- EnVision K-5 intervention supports
- Modify

activities/assignments/projects/assessments
● Provide an option for alternative activities/assignments/projects/assessments

● Provide higher-order questioning and discussion opportunities ● Utilize exploratory connections to higher grade concepts
● Modify Content

● Adjust Pacing of Content ● Small Group Enrichment
● Provide a checklist for long, detailed tasks
● Use concrete examples of

concepts before teaching the abstract
● Highlight important concepts to be learned in text of material ● Provide concrete examples for

homework/class work assignments
● Give additional presentations by varying the methods using

 Key:
repetition, simpler explanations and modeling
● Give written directions to supplement verbal directions ● Familiarize student with new vocabulary before beginning lesson
● Utilize visual aids and graphic organizers
● Utilize manipulative, hands-on activities
● Provide graph paper for computation
● Additional time to complete activities/assignments/projects/assessments
● Modify or provide an option for alternative activities/assignments/projects/assessments
● Small Group Instruction/Intervention/Remediation
● Individual Intervention/Remediation
● Additional Support Materials/ Online resources
● Guided Notes or copy of teacher notes
● Review prerequisite skills ●

After School Tutoring
● Utilize visual aids and graphic organizers
● Utilize manipulative, hands-on activities

● Guided Notes or copy of teacher notes

● Additional Support Materials / Online resources

● Review prerequisite skills ● http://www.wida.us/standards/elp.aspx
● Individual Enrichment
● Higher-Level Text

● Provide whole group enrichment explorations
● Teach cognitive and methodological skills
● Use center, stations, or contracts ● Organize integrated problem-solving simulations ● Propose interest-based extension activities
● Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles
● Provide options, alternatives and choices to differentiate and broaden the curriculum
● Propose independent projects based on individual interests ● Additional Support Materials/ Online resources
● After school clubs
● Tiered centers
● Tiered assignments
repetition, simpler explanations and modeling
● Give written directions to supplement verbal directions ● Familiarize student with new vocabulary before beginning lesson
● Utilize visual aids and graphic organizers
● Utilize manipulative, hands-on activities
● Provide graph paper for computation
● Additional time to complete activities/assignments/projects/assessments
● Modify or provide an option for alternative activities/assignments/projects/assessments
● Small Group Instruction/Intervention/Remediation
● Individual Intervention/Remediation
● Additional Support Materials/ Online resources
● Guided Notes or copy of teacher notes
● Review prerequisite skills ● After School Tutoring

● Chunk activities/assignments/projects/as sessments into manageable units
● Allow student to receive reading text in various forms (written, verbal, audio) r on a lower reading level
● Allow student to make test corrections or retake assessment
● Adjust Pacing of Content
● See IEPs of students for specific modifications

Vocabulary Ongoing Modifications

● Chunk activities/assignments/projects/as sessments into manageable units ● Allow student to receive reading text in various forms (written, verbal, audio) r on a lower reading level
● Allow student to make test corrections or retake assessment ● Adjust Pacing of Content ● See 504 plan for specific accommodations

Building the language of mathematics

http://maccss.ncdpi.wikispaces.net/file/view/2014+Building+Vocabulary.pdf

Georgia Department of Education Grade 1 Intervention Table

https://www.georgiastandards.org/Georgia-Standards/Pages/Math-K-5.aspx NC

Resources for k-2 Advanced Math Learners

http://ncaigirp.ncdpi.wikispaces.net/Mathematics+K-2

Differentiated centers

Extra time on task

Limited # of items

ELL:

http://www.wida.us/standards/elp.aspx

NJ Model Curriculum:

https://www.state.nj.us/education/bilingual/curriculum/

Achieve the Core:

https://achievethecore.org/aligned/ccss-aligned-materials-for-ell-students/

Instructional Best Practices and Exemplars

Develop spatial sense by connecting geometric shapes to students' everyday lives. Initiate natural conversations about shapes in the environment. Have students identify and name two and three-dimensional shapes in and outside of the classroom and describe their relative position. Ask students to find rectangles in the classroom and describe the relative positions of the rectangles they see, e.g. This rectangle (a poster) is over the sphere (globe). Teachers can use a digital camera to record these relationships. Have students create drawings involving shapes and positional words: Draw a window ON the door or Draw an apple UNDER a tree. Some students may be able to follow two- or three-step instructions to create their drawings. Use a shape in different orientations and sizes along with non-examples of the shape so students can learn to focus on defining attributes of the shape. Manipulatives used for shape identification actually have three dimensions. However, First Graders need to think of these shapes as two-dimensional or "flat" and typical three-dimensional shapes as "solid." Students will identify two-dimensional shapes that form surfaces on three dimensional objects. Students need to focus on noticing two and three dimensions, not on the words two-dimensional and three-dimensional.

Students will begin partitioning regions into equal shares using a context such as cookies, pies, pizza, blocks of wood, brownies, construction paper, etc. This is a foundational building block of fractions, which will be extended in future grades. Students should have ample experiences using the words, halves, fourths, and quarters, and the phrases half of, fourth of, and quarter of. Students should also work with the idea of the whole, which is composed of two halves, or four fourths or four quarters.

Students can easily form shapes on geoboards using colored rubber bands to represent the sides of a shape. Ask students to create a shape with four sides on their geoboard, and then copy the shape on dot paper. Students can share and describe their shapes as a class while the teacher records the different defining attributes mentioned by the students. Pattern block pieces can be used to model defining attributes for shapes. Ask students to create their own rule for sorting pattern blocks. Students take turns sharing their sorting rules with their classmates and showing examples that support their rule. The classmates then draw a new shape that fits this same rule after it is shared. Students can use a variety of manipulatives and real-world objects to build larger shapes. The manipulatives can include paper shapes, pattern blocks, color tiles, triangles cut from squares (isosceles right triangles), tangrams, canned food (right circular cylinders) and gift boxes (cubes or right rectangular prisms). Folding shapes made from paper enables students to physically feel the shape and form the equal shares. Ask students to fold circles and rectangles first into halves and then into fourths. They should observe and then discuss the change in the size of the parts.

Students may use interactive whiteboards or computer environments to move shapes into different orientations and to enlarge or decrease the size of a shape still keeping the same shape. They can also move a point/vertex of a triangle and identify that the new shape is still a triangle. When they move one point/vertex of a rectangle they should recognize that the resulting shape is no longer a rectangle.

Interdisciplinary Connections Technology Integration

● Language Arts - Vocabulary: students will connect everyday vocabulary to strengthen their understanding of mathematical terms ● Language Arts - Reading Strategies: students will utilize reading comprehension skills by acting out or drawing the order of important events in a story problem. Reading and writing stories to represent addition and subtraction
● Language Arts - Writing Strategies: students will create mathematical stories using numbers, pictures and words. ● Language Arts - Interactive Student Notebook
● Language Arts - Read Alouds
● Science: work with data/make calculations involving measurements and other data across all modules
● Social Studies - Economics- connecting money as a means for helping people buy things they need or want; complete independent/partner projects to plan and market a good or service
  ● **8.1.2.A.1** Identify the basic features of a digital device and explain its purpose.
  ● **8.1.2.E.1** Use digital tools and online resources to explore a problem or issue.
  ● **8.2.2.C.1** Brainstorm ideas on how to solve a problem or build a

product.