

Woodland Park Public Schools

Mathematics Curriculum Map

Kindergarten

Curriculum Authors

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Course Philosophy and Description

In mathematics, students are engaged through multiple modalities that ensures learning a high quality curriculum and instruction which enables every student to reach their potential understanding. Student will be empowered to succeed with personalized resources that fits each student's interests and growth in the field of mathematics.

Woodland Park's philosophy in mathematics consists of providing hands on activities, differentiated instruction for conceptual mathematical understanding that supports the New Jersey State Learning Standards for grades k-8, and bridging the properties of mathematics to the make real world extensions. Students will learn to address a range of tasks focusing on the application of concepts, skills and understandings. Students will be asked to solve problems involving the key knowledge and skills for their grade level as identified by the NJSLS; express mathematical reasoning and construct a mathematical argument and apply concepts to solve model real world problems. The balanced mathematics instructional model will be used as the basis for all mathematics instruction.

NJSLS Mathematical Practices

Each grade level consists of mathematical standards that were created to balance the procedure and understanding of math topics. The Standards for Mathematical Content are a balanced combination of **procedure and understanding**. Expectations that begin with the word “understand” are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. These practices rest on important “proficiencies and processes” that are in alignment to the longstanding mathematical standards in education.

- **Mathematical Practice #1: Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to the solution.
- **Mathematical Practice # 2: Reason abstractly and quantitatively.** Mathematically proficient students make sense of quantities and their relationships in problem situations.
- **Mathematical Practice #3: Construct viable arguments and critique the reason for others.** Mathematically proficient students understand and use state assumptions, definitions, and previously established results in constructing arguments.
- **Mathematical Practice #4: Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.
- **Mathematical Practice #5: Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem.
- **Mathematical Practice # 6: Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others.
- **Mathematical Practice # 7: Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure.
- **Mathematical Practice #8: Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts.

Woodland Park Grade Level Overview (as per NJSL Framework)

In Kindergarten, instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

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.

In Grade 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

In Grade 3, instructional time should focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

In Grade 4, instructional time should focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

In Grade 5, instructional time should focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.

In Grade 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

In Grade 8, instructional time should focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.

Kindergarten Overview:

In Kindergarten, instructional time should focus on two critical areas:

1. Representing and comparing whole numbers, initially with sets of objects;

- a. Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as $5 + 2 = 7$ and $7 - 2 = 5$. (Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

2. Describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

- a. Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Overview of K-8 Mathematics Curriculum Pacing Guide

Titles of Units

	September	October	November	December	January	February	March	April	May	June
Grade K	Counting and Cardinality		Counting and Cardinality/ Operations and Algebraic Thinking			Measurement & Data			Geometry	
Grade 1	Addition and Subtraction within 10				Place Value/ Addition & Subtraction through 20		Place Value, Measurement, & Shapes		Reason with Shape and their Attributes	
Grade 2	Add and Subtract within 100 and Understand Place Value to 1000			Place Value Strategies for Addition and Subtraction		Measurement			Reason with Shapes and Represent Data	
Grade 3	Multiplication, Division and Concepts of Area			Modeling Multiplication, Division and Fractions			Fractions as Numbers and Measurement		Representing Data	
Grade 4	Place Value and Operations with Whole Numbers		Multi-digit Arithmetic and Fraction Equivalence			Building Fractions and Decimal Notation			Geometry and Measurement	
Grade 5	Understanding the Place Value System		Understanding Volume and Operations on Fractions			More Operations on Fractions			Coordinate Geometry and Classifying Figures	
Grade 6	Operations and Reasoning about Ratios		Equations, The Rational Number System and 2D Geometry			Equations, The Rational Number System and 2D Geometry			Variability, Distributions, and Relationships between Quantities	
Grade 7	Operations on Rational Numbers and Expressions			Equations, Ratios and Proportions			Drawing Inferences about Populations and Probability Models		Problem Solving with Geometry	
Grade 8	Exponents, Expressions, and Equations		Functions, Equations, and Solutions			Geometry: Pythagorean Theorem, Congruence and Similarity Transformations			Statistics and Probability: Scatterplots and Association	
Algebra	Solving Equations and Inequalities		Introduction to Functions	Linear Functions/ Inequalities and Systems/Exponential Functions			Polynomials/ Quadratic Functions and Equations		Quadratic Functions and Equations	

Kindergarten Table of Contents

Mathematics Unit Titles:

Unit 1: Connecting Counting to Cardinality

September – November

**Unit 2: Counting Addition and Subtraction
(Operations and Algebraic Thinking)**

November – January

Unit 3: Place Value and Measurement

February – April

Unit 4: Place Value and Geometric Shapes

April - June

Content Area: Counting and Cardinality	Grade Level : Kindergarten
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Unit 1: Connecting Counting to Cardinality	Time Frame: September – November
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Interdisciplinary Connections

NGSS Connection:

Weather and Climate

- K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.
 - **Cross cutting concepts to NJSL math standard(s):** K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count.
 - **Cross cutting concepts to NJSL math standard(s):** K.CC.A Know number names and the count sequence.
 - **Cross cutting concepts to NJSL math standard(s):** MP.2 Reason abstractly and quantitatively.
 - **Cross cutting concepts to NJSL math standard(s):** MP.4 Model with mathematics.

Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
 - **Cross cutting concepts to NJSL math standard(s):**
- K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
 - **Cross cutting concepts to NJSL math standard(s):** K.CC Counting and Cardinality

ELA Connection:

Range of Reading and Level of Text Complexity

- RL.K.1. With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how).
- RL.K.10. Actively engage in group reading activities with purpose and understanding.

Key Ideas and Details

- RI.K.1. With prompting and support, ask and answer questions about key details in a text.
- RI.K.2. With prompting and support, identify the main topic and retell key details of a text.
- RI.K.3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

Comprehension and Collaboration

- SL.K.3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

Presentation of Knowledge and Ideas

- SL.K.5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
- SL.K.6. Speak audibly and express thoughts, feelings, and ideas clearly.

Text Types and Purposes

- W.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

Social Studies Connection:

6.1 U.S. History: America in the World: All students will acquire the knowledge and skills to think analytically about how past and present interactions of people, cultures, and the environment shape the American heritage. Such knowledge and skills enable students to make informed decisions that reflect fundamental rights and core democratic values as productive citizens in local, national, and global communities.

- **6.1.4.A.1:** Explain how rules and laws created by community, state, and national governments protect the rights of people, help resolve conflicts, and promote the common good.

6.3 Active Citizenship in the 21st Century: All students will acquire the skills needed to be active, informed citizens who value diversity and promote cultural understanding by working collaboratively to address the challenges that are inherent in living in an interconnected world.

- **6.3.4.A.1:** Determine what makes a good rule or law and apply this understanding to rules and laws in your school or community.

Career Ready Practices

CRP1. Act as a responsible and contributing citizen and employee

Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.

CRP2. Apply appropriate academic and technical skills.

Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.

CRP4. Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP6. Demonstrate creativity and innovation.

Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

9.1 Personal Financial Literacy: By the end of grade 4, students should be able to...

STRAND B: MONEY MANAGEMENT

- 9.1.4.B.1 Differentiate between financial wants and needs.
- 9.1.4.B.5 Identify ways to earn and save

STRAND D: PLANNING, SAVING, AND INVESTING

- 9.1.4.D.1 Determine various ways to save.

9.2 Career Awareness, Exploration, and Preparation: By the end of grade 4, students will be able to...

STRAND A: CAREER AWARENESS

- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Technology Standards (8.1 and 8.2)

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A. A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.*

Select and use applications effectively and productively.

Understand and use technology systems.

8.1.2.A.1: Identify the basic features of a digital device and explain its purpose.

Select and use applications effectively and productively.

8.1.2.A.2: Create a document using a word processing application.

8.1.2.A.5: Enter information into a spreadsheet and sort the information.

8.1.2.A.7: Enter information into a database or spreadsheet and filter the information.

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

E: Research and Information Fluency: *Students apply digital tools to gather, evaluate, and use information.*

Plan strategies to guide inquiry

Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.

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

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

C. Design: *The design process is a systematic approach to solving problems.*

The attributes of design.

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

Unit 1: Counting & Cardinality

Standards:

K.CC.A: Know number names and the count sequence

- K.CC.A.1: Count to 100 by ones and by tens
- K.CC.A.3: Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects)

K.CC.B: Count to tell the number of objects

- K.CC.B.4: Understand the relationship between numbers and quantities; connect counting to cardinality.
 - K.CC.B.4(a): When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
 - K.CC.B.4(b): Understand that the last number names tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
 - K.CC.B.4(c): Understand that each successive number name refers to a quantity that is one larger.
- K.CC.B.5: Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. ***(benchmarked)**

K.OA.A: Understanding addition as an operation of putting together and adding to, and understanding that subtraction as taking apart and taking from.

- K.OA.A.1. Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ***(benchmarked)**

K.MB.B: Classify objects and count the number of objects in each category.

- K.MB.B.3: Classify objects into given categories; count the numbers of objects in each category and sort the categories by count ***(benchmarked)**

K.GA. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

- K.G.A.1: Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, and next to

<p>Essential Questions:</p> <ul style="list-style-type: none"> • How do we show how many? • How can I show numbers beyond 10? • How many groups can be made with objects arranged in a circle up to 10? • How many groups can be made with objects arranged in a rectangle up to 10? • Why do we need to count? • How do we count? • How can we compare two numbers? 	<p>Enduring Understanding:</p> <p><u>Learning Goal 1:</u> Count by ones up to 10</p> <p><u>Learning Goal 2:</u> Represent the number of objects with a written numeral up to 10.</p> <p><u>Learning Goal 3:</u> Assign an ascending number name for each object in a group.</p> <p><u>Learning Goal 4:</u> State the last number named as the number of counted objects in the set.</p> <p><u>Learning Goal 5:</u> Identify the next number name in counting as one greater than the previous number.</p> <p><u>Learning Goal 6:</u> Answer how many? questions about groups of up to 10 objects when arranged in a line, rectangular array or circle.</p> <p><u>Learning Goal 7:</u> Answer how many? questions about groups of up to 5 when arranged in a scattered configuration</p> <p><u>Learning Goal 8:</u> Create addition events with objects, fingers, drawings, sounds (e.g., claps), acting out situations and verbal explanations for sums up to 10</p> <p><u>Learning Goal 9:</u> Classify objects into given categories and count the objects in each category (up to 10 objects).</p> <p><u>Learning Goal 10:</u> Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.</p>
<p>Knowledge and Skills: Students will...</p> <p><u>Concept 1:</u> Number names and the count sequence up to 10</p> <p><u>Concept 2:</u> Represent the number of objects with a numeral</p>	<p>Demonstration of Learning:</p> <p><u>Objective 1:</u> Count orally by ones up to 10.</p> <p><u>Objective 2:</u> Write numbers from 0 to 10.</p>

Concept 3: Objects can be counted in any order. Each object is counted once (one-to-one correspondence).

Concept 4: The next number name in counting is always one greater than the previous number.

Concept 5: The last number name said tells the number of objects counted.

Concept 6: Understand addition as putting together and adding to.

Concept 7: Understand subtraction as taking apart and taking from.

Concept 8: Objects can be sorted based on their properties.

Concept 9: Shapes have names.

Concept 10: Positional words (above, below, besides, in front of, behind, next to)

Objective 3: Say number names in the standard order.

Objective 4: Pair each object with one number name (one-to-one correspondence).

Objective 5: Count to tell the number of objects.

Objective 6: Count objects arranged in any order.

Objective 7: Identify the last number named as the number of objects counted.

Objective 8: Count to tell the number of objects arranged in a line, rectangular array, circle, or scattered configuration.

Objective 19: Count to tell the number of objects when asked how many? questions.

Objective 10: Given a number from 1-10, count out that many object

Objective 11: Create addition events with objects (up to 10).

Objective 12: Create addition events with drawings and sounds (up to 10).

Objective 13: Create addition events by acting out situations and with verbal explanations.

Objective 14: Sort objects into categories

Objective 15: Name shapes in order to describe objects in the environment.

Objective 16: Use terms such as above, below, beside, in front of, behind, and next to in order to describe relative positions of objects.

<p>Core Instructional and Supplemental Materials:</p> <p>Carter, John A., Ph.D., Cuevas, Gilbert Ph.D., Day, Roger Ph.D., Malloy, Carol Ph.D.. <i>McGraw-Hill Education: My Math grades k-8</i>. McGraw-Hill Education, 2016. www.connectED.mcgraw-hill.com</p> <ul style="list-style-type: none"> • “Model the Math” activities in Teacher Edition for each lesson • “Literature Connection” found in Teacher Edition for each lesson • “Real-World Problem Solving Reader” • RTI Differentiated Instruction / ELL Support for each chapter • Laptops • Math centers/stations • Video tutorials for anticipatory set/guided visuals • Anchor charts created by teachers • Reference sheets created by teachers • Vocabulary Activities/Math Word Wall • Problem of the day(s)/Weeks 	<p>Technology Integration:</p> <ul style="list-style-type: none"> • www.ixl.com • www.softschools.com • www.mathisfun.com • www.jmathpage.com • www.illuminations.nctm.org • www.k-5mathteachingresources.com • https://gradecommoncoremath.wikispaces.org/kindergarten+home • www.connectED.mcgraw-hill.com • https://xtramath.org • https://www.khanacademy.org 	<p>Illustrative Mathematics:</p> <ul style="list-style-type: none"> • Counting Circles • Choral Counting • Number Tic Tac Toe • Counting Mat • Finding Equal Groups • Ten Frame Edition • Sort and Count 1
<p>Suggested Activities:</p> <p>Counting the number of pages in reading and writing stories.</p>	<p>Manipulatives: connecting cubes, tens frames, two color chips, counters, number lines, dominos, dice</p>	<p>Flash cards</p> <p>Play dough activity</p>
<p>Formative/Summative/Benchmark Assessments:</p> <p>Diagnostic Assessment (as Pre-Assessment): Assesses a student’s strengths, weaknesses, knowledge, and skills prior to instruction.</p> <ul style="list-style-type: none"> • STAR 360, iXL, Pre-assessments per grade level • Summer packet review • Daily Problem of the Day • Diagnostic Pre-Chapter Assessment “Am I Ready” for each chapter 		

Formative Assessments: Assesses a student's performance during instruction, and usually occurs regularly throughout the instruction process.

- Writing Prompts, Journals, and Portfolios, Do-Now(s), Exit Tickets, iXL (performance assessments), Hands on Labs, Projects, Menu Choice boards, Anticipatory Sets, Problem of the Week

Summative Assessments: Measures a student's achievement at the end of instruction.

- Diagnostic Quizzes, Activities, Tasks, Challenge Problems, Unit Tests, Chapter Tests, End of Unit Writing Submissions, End of Unit Projects, Benchmark Assessments, midterms and finals (if applicable per grade level)
- Assessment Masters – Diagnostic Test for each unit Chapter Test – on level (2A)
- STAR 360 benchmark assessments

Criterion-Referenced Assessment: Measures a student's performance against a goal, specific objective, or standard.

Norm-Referenced Assessment: Compares a student's performance against other students (a national group or other "norm")

- Alternate Assessments

Interim/Benchmark Assessment

- Evaluates student performance at periodic intervals, frequently at the end of a grading period. Can predict student performance on end-of-the-year summative assessments.

Unit 1: Differentiation/Accommodations/Modifications

	Content Curriculum, standards	Process How students make sense or understand information being taught	Product Evidence of Learning
G&T	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Independent study/set own learning goals ❖ Interest/station groups ❖ Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Use of technology ❖ Journals/Logs 	<ul style="list-style-type: none"> ❖ Choice boards ❖ Podcast/blog ❖ Debate ❖ Design and conduct experiments ❖ Formulate & defend theory ❖ Design a game ❖ Rubrics
ELL	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Vocabulary lists ❖ Visuals/Modeling ❖ Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Chunking ❖ E-Dictionaries, bilingual dictionaries ❖ Extended time ❖ Differentiated instructional outcomes ❖ Use of technology ❖ Frequent checks for understanding 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests with various types of questions ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play
At Risk	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Vocabulary lists ❖ Visuals/Modeling Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Chunking ❖ Extended time ❖ Differentiated instructional outcomes ❖ Use of technology ❖ Partner work ❖ Frequent checks for understanding 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests ❖ Oral Assessments ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play
IEP/504	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Visuals/Modeling Varying levels of resources and materials 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Extended time ❖ Differentiated instructional outcomes ❖ Preferential Seating 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests ❖ Oral Assessments ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play

	<ul style="list-style-type: none"> ❖ Use of technology ❖ Provide word boxes ❖ Use of a calculator ❖ Present fewer multiple choice answers ❖ Acknowledge alternate responses such as pictures and/or verbal instead of written ❖ Teacher may scribe for student ❖ Oral assessment instead of written 	<ul style="list-style-type: none"> ❖ Use of technology ❖ Small group/one-to-one instruction ❖ Teach information processing strategies ❖ Chunking ❖ Frequent checks for understanding ❖ Access to teacher created notes ❖ Use of visual and multisensory formats ❖ Use of assistive technology ❖ Use of prompts ❖ Vocabulary walls and anchor charts available ❖ Provide a Study Guide ❖ Graphic organizers ❖ Teacher modeling or anchor charts on board ❖ Provide multi-level reading material ❖ Chunk learning into smaller segments ❖ Small group instruction 	
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Instructional Routines for Core Instructional Delivery

<p>Collaborative Problem Solving</p> <p>Connect Previous Knowledge to New Learning</p> <p>Making Thinking Visible</p> <p>Develop and Demonstrate Mathematical Practices</p> <p>Inquiry-Oriented and Exploratory Approach</p> <p>Multiple Solution Paths and Strategies</p>	<p>Use of Multiple Representations</p> <p>Explain the Rationale of your Math Work</p> <p>Quick Writes</p> <p>Pair/Trio Sharing</p> <p>Turn and Talk Charting Gallery</p> <p>Walks</p> <p>Small Group and Whole Class Discussions</p> <p>Student Modeling</p>	<p>Analyze Student Work</p> <p>Identify Student’s Mathematical Understanding</p> <p>Identify Student’s Mathematical Misunderstandings</p> <p>Interviews</p> <p>Role Playing</p> <p>Diagrams, Charts, Tables, and Graphs</p> <p>Anticipate Likely and Possible Student Responses</p> <p>Collect Different Student Approaches</p>	<p>Multiple Response Strategies</p> <p>Asking Assessing and Advancing Questions</p> <p>Revoicing</p> <p>Marking</p> <p>Recapping</p> <p>Challenging Pressing for Accuracy and Reasoning</p> <p>Maintain the Cognitive Demand</p>
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Content Area: Operations and Algebraic Thinking	Grade Level : Kindergarten
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Unit 2: Counting Addition and Subtraction (Algebraic Thinking)	Time Frame: November - January
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Interdisciplinary Connections

NGSS Connection:

K. Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
 - **Cross cutting concepts to NJSL math standard(s):** K.CC Counting and Cardinality
 - **Cross cutting concepts to NJSL math standard(s):** MP.2 Reason abstractly and quantitatively.
 - **Cross cutting concepts to NJSL math standard(s):** MP.4 Model with mathematics.

ELA Connection:

Range of Reading and Level of Text Complexity

- RL.K.1. With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how).
- RL.K.10. Actively engage in group reading activities with purpose and understanding.

Key Ideas and Details

- RI.K.1. With prompting and support, ask and answer questions about key details in a text.
- RI.K.2. With prompting and support, identify the main topic and retell key details of a text.
- RI.K.3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

Comprehension and Collaboration

- SL.K.3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

Presentation of Knowledge and Ideas

- SL.K.5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
- SL.K.6. Speak audibly and express thoughts, feelings, and ideas clearly.

Text Types and Purposes

- W.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

Career Ready Practices

CRP4. Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

9.1 Personal Financial Literacy: By the end of grade 4, students should be able to...

STRAND B: MONEY MANAGEMENT

- 9.1.4.B.1 Differentiate between financial wants and needs.
- 9.1.4.B.5 Identify ways to earn and save

9.2 Career Awareness, Exploration, and Preparation: By the end of grade 4, students will be able to...

STRAND A: CAREER AWARENESS

- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Technology Standards (8.1 and 8.2)

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.*

Select and use applications effectively and productively.

Understand and use technology systems.

8.1.2.A.1: Identify the basic features of a digital device and explain its purpose.

Select and use applications effectively and productively.

8.1.2.A.7: Enter information into a database or spreadsheet and filter the information.

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

E: Research and Information Fluency: *Students apply digital tools to gather, evaluate, and use information.*

Plan strategies to guide inquiry

Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.

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

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

B. Design: *The design process is a systematic approach to solving problems.*

The attributes of design.

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

Unit 2: Counting, Addition and Subtraction (Operations and Algebraic Thinking)

Standards:

K.CC.A. Know number names and the count sequence.

- K.CC.A.1. Count to 100 by ones and by tens. ***(benchmarked)**
- K.CC.A.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
- K.CC.A.3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). ***(benchmarked)**

K.OA.A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

- K.OA.A.1. Represent addition and subtraction **up to 10** with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ***(benchmarked)**
- K.OA.A.2. Solve addition and subtraction word problems, and add and subtract within 10, *e.g., by using objects or drawings to represent the problem.*
- K.OA.A.5. **Demonstrate fluency for addition and subtraction within 5-** (by the end of Kindergarten). ***(benchmarked)**

K.CC.B. Count to tell the number of objects

- K.CC.B.5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. ***(benchmarked)**

K.CC.C. Compare numbers.

- K.CC.C.6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group *e.g. by using matching and counting strategies.*
- K.CC.C.7. Compare two numbers between 1 and 10 presented as written numerals.

<p>Essential Questions:</p> <ul style="list-style-type: none"> • How can we show a number in other ways? • How can I use objects to add? • How can I use objects to subtract? • Why do we need to add and subtract? • What happens when we put groups together or add to a group? • What happens when we take apart groups or take away from a group? • Why do we compose and decompose numbers? 	<p>Enduring Understanding:</p> <p><u>Learning Goal 1:</u> Count <u>to 50</u> by ones and by tens.</p> <p><u>Learning Goal 2:</u> Count forward <u>up to 50</u> starting from numbers other than one</p> <p><u>Learning Goal 3:</u> Represent a number of objects with a written numeral <u>0 to 20</u>.</p> <p><u>Learning Goal 4:</u> Create addition and subtraction events with objects, fingers, drawings, sounds (e.g., claps), acting out situations and verbal explanations (<u>up to 10</u>).</p> <p><u>Learning Goal 5:</u> Use objects or drawings to represent and solve addition and subtraction word problems (within 10).</p> <p><u>Learning Goal 6:</u> Answer <i>how many?</i> questions about groups of <u>up to 20</u> objects when arranged in a line, rectangular array or circle</p> <p><u>Learning Goal 7:</u> Answer <i>how many?</i> questions about groups of <u>up to 10</u> when arranged in a scattered configuration</p> <p><u>Learning Goal 8:</u> Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (groups of up to 10 objects).</p> <p><u>Learning Goal 9:</u> Compare numbers (up to 10) written as numerals.</p> <p><u>Learning Goal 10:</u> Use mental math strategies to solve addition facts within 5.</p>
<p>Knowledge and Skills:</p> <p><u>Concept 1:</u> Recognize number names and the count sequence up to 50</p> <p><u>Concept 2:</u> Count the number of objects represented by a numeral.</p> <p><u>Concept 3:</u> Understand addition as putting together and adding to.</p>	<p>Demonstration of Learning: <i>Students will:</i></p> <p><u>Objective 1:</u> count orally by ones <u>up to 50</u>.</p> <p><u>Objective 2:</u> count orally by tens <u>up to 50</u>.</p> <p><u>Objective 3:</u> count orally by ones <u>up to 50</u>, beginning at any number.</p>

Concept 4: Understand subtraction as taking apart and taking from.

Concept 5: Different groups can have different numbers of objects.

Concept 6: Recognize that numbers of objects can be compared using phrases such as *greater than*, *less than* and *equal to*.

Concept 7: Identify number names and the count sequence

Concept 8: The next number name in counting is always one greater than the previous number.

Concept 9: Count to tell the number of objects.

Objective 4: write numbers from 0 to 20.

Objective 5: create subtraction and addition events with objects (up to 10).

Objective 6: create subtraction and addition events with drawings and sounds (up to 10).

Objective 7: create subtraction and addition events by acting out situations and with verbal explanations

Objective 8: use objects and drawings to represent addition and subtraction.

Objective 9: add and subtract within 10

Objective 10: count to tell the number of objects arranged in a line, rectangular array, circle, or scattered configuration.

Objective 11: count to tell the number of objects when asked “how many?” questions.

Objective 12: given a number from 1-20, count out that many object.

Objective 13: compare the number of objects (up to 10) in two groups.

Objective 14: identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group.

Objective 15: compare numbers (up to 10) written as numerals.

Objective 16: add within 5 with accuracy and efficiency

<p>Core Instructional and Supplemental Materials:</p> <p>Carter, John A., Ph.D., Cuevas, Gilbert Ph.D., Day, Roger Ph.D., Malloy, Carol Ph.D.. <i>McGraw-Hill Education: My Math grades k-8</i>. McGraw-Hill Education, 2016. www.connectED.mcgraw-hill.com</p> <ul style="list-style-type: none"> • “Model the Math” activities in Teacher Edition for each lesson • “Literature Connection” found in Teacher Edition for each lesson • “Real-World Problem Solving Reader” • RTI Differentiated Instruction / ELL Support for each chapter • Laptops • Math centers/stations • Video tutorials for anticipatory set/guided visuals • Anchor charts created by teachers • Reference sheets created by teachers • Vocabulary Activities/Math Word Wall • Problem of the day(s)/Weeks 	<p>Technology Integration:</p> <ul style="list-style-type: none"> • www.ixl.com • www.softschools.com • www.mathisfun.com • www.jmathpage.com • www.illuminations.nctm.org • www.k-5mathteachingresources.com • https://gradecommoncoremath.wikispaces.hcps.org/kindergarten+home • www.connectED.mcgraw-hill.com • https://xtramath.org • https://www.khanacademy.org 	<p>Illustrative Mathematics:</p> <ul style="list-style-type: none"> • Counting Circles • Choral Counting • Number Tic Tac Toe • Counting Mat • Finding Equal Groups • Ten Frame Edition • Sort and Count 1
<p>Suggested Activities:</p> <p>Play Doh numbers, shaving cream Websites Find numbers around the room</p>	<p>Songs Children’s literature Manipulatives-build numbers Rainbow write</p>	<p>Roll dice- write numbers Matching numbers, trace numbers, read numbers</p>
<p>Formative/Summative/Benchmark Assessments:</p> <p>Diagnostic Assessment (as Pre-Assessment): Assesses a student’s strengths, weaknesses, knowledge, and skills prior to instruction.</p> <ul style="list-style-type: none"> • STAR 360, iXL, Pre-assessments per grade level • Summer packet review • Daily Problem of the Day • Diagnostic Pre-Chapter Assessment “Am I Ready” for each chapter <p>Formative Assessments: Assesses a student’s performance during instruction, and usually occurs regularly throughout the instruction process.</p> <ul style="list-style-type: none"> • Writing Prompts, Journals, and Portfolios, Do-Now(s), Exit Tickets, iXL (performance assessments), Hands on Labs, Projects, Menu Choice boards, Anticipatory Sets, Problem of the Week 		

Summative Assessments: Measures a student's achievement at the end of instruction.

- Diagnostic Quizzes, Activities, Tasks, Challenge Problems, Unit Tests, Chapter Tests, End of Unit Writing Submissions, End of Unit Projects, Benchmark Assessments, midterms and finals (if applicable per grade level)
- Assessment Masters – Diagnostic Test for each unit Chapter Test – on level (2A)
- STAR 360 benchmark assessments

Criterion-Referenced Assessment: Measures a student's performance against a goal, specific objective, or standard.

Norm-Referenced Assessment: Compares a student's performance against other students (a national group or other "norm")

- Alternate Assessments

Interim/Benchmark Assessment

- Evaluates student performance at periodic intervals, frequently at the end of a grading period. Can predict student performance on end-of-the-year summative assessments.

Unit 2: Differentiation/Accommodations/Modifications

	Content Curriculum, standards	Process How students make sense or understand information being taught	Product Evidence of Learning
G&T	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Independent study/set own learning goals ❖ Interest/station groups ❖ Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Use of technology ❖ Journals/Logs 	<ul style="list-style-type: none"> ❖ Choice boards ❖ Podcast/blog ❖ Debate ❖ Design and conduct experiments ❖ Formulate & defend theory ❖ Design a game ❖ Rubrics
ELL	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Vocabulary lists ❖ Visuals/Modeling ❖ Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Chunking ❖ E-Dictionaries, bilingual dictionaries ❖ Extended time ❖ Differentiated instructional outcomes ❖ Use of technology ❖ Frequent checks for understanding 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests with various types of questions ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play
At Risk	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Vocabulary lists ❖ Visuals/Modeling Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Chunking ❖ Extended time ❖ Differentiated instructional outcomes ❖ Use of technology ❖ Partner work ❖ Frequent checks for understanding 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests ❖ Oral Assessments ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play
IEP/504	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Visuals/Modeling Varying levels of resources and materials 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Extended time ❖ Differentiated instructional outcomes ❖ Preferential Seating 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests ❖ Oral Assessments ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play

	<ul style="list-style-type: none"> ❖ Use of technology ❖ Provide word boxes ❖ Use of a calculator ❖ Present fewer multiple choice answers ❖ Acknowledge alternate responses such as pictures and/or verbal instead of written ❖ Teacher may scribe for student ❖ Oral assessment instead of written 	<ul style="list-style-type: none"> ❖ Use of technology ❖ Small group/one-to-one instruction ❖ Teach information processing strategies ❖ Chunking ❖ Frequent checks for understanding ❖ Access to teacher created notes ❖ Use of visual and multisensory formats ❖ Use of assistive technology ❖ Use of prompts ❖ Vocabulary walls and anchor charts available ❖ Provide a Study Guide ❖ Graphic organizers ❖ Teacher modeling or anchor charts on board ❖ Provide multi-level reading material ❖ Chunk learning into smaller segments ❖ Small group instruction 	
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Instructional Routines for Core Instructional Delivery

<p>Collaborative Problem Solving</p> <p>Connect Previous Knowledge to New Learning</p> <p>Making Thinking Visible</p> <p>Develop and Demonstrate Mathematical Practices</p> <p>Inquiry-Oriented and Exploratory Approach</p> <p>Multiple Solution Paths and Strategies</p>	<p>Use of Multiple Representations</p> <p>Explain the Rationale of your Math Work</p> <p>Quick Writes</p> <p>Pair/Trio Sharing</p> <p>Turn and Talk Charting Gallery</p> <p>Walks</p> <p>Small Group and Whole Class Discussions</p> <p>Student Modeling</p>	<p>Analyze Student Work</p> <p>Identify Student’s Mathematical Understanding</p> <p>Identify Student’s Mathematical Misunderstandings</p> <p>Interviews</p> <p>Role Playing</p> <p>Diagrams, Charts, Tables, and Graphs</p> <p>Anticipate Likely and Possible Student Responses</p> <p>Collect Different Student Approaches</p>	<p>Multiple Response Strategies</p> <p>Asking Assessing and Advancing Questions</p> <p>Revoicing</p> <p>Marking</p> <p>Recapping</p> <p>Challenging Pressing for Accuracy and Reasoning</p> <p>Maintain the Cognitive Demand</p>
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Content Area: Geometry	Grade Level : Kindergarten
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Unit 3: Place Value and Measurement	Time Frame: February - April
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Interdisciplinary Connections

ELA Connection: Telling or writing a story in order using words like first, next, and last to guide them.

Range of Reading and Level of Text Complexity

- RL.K.1. With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how).
- RL.K.10. Actively engage in group reading activities with purpose and understanding.

Key Ideas and Details

- RI.K.1. With prompting and support, ask and answer questions about key details in a text.
- RI.K.2. With prompting and support, identify the main topic and retell key details of a text.
- RI.K.3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

Comprehension and Collaboration

- SL.K.3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

Presentation of Knowledge and Ideas

- SL.K.5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
- SL.K.6. Speak audibly and express thoughts, feelings, and ideas clearly.

Text Types and Purposes

- W.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
- W.K.3. Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

Social Studies:

All About Me- identifying money and determining how to use money for needs and wants.

NGSS Connection

Weather and Climate

- K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
 - **Cross cutting concepts to NJSL math standard(s):** K.CC Counting and Cardinality
- K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.
 - **Cross cutting concepts to NJSL math standard(s):** K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
 - **Cross cutting concepts to NJSL math standard(s):** MP.2 Reason abstractly and quantitatively.
 - **Cross cutting concepts to NJSL math standard(s):** MP.4 Model with mathematics.
 - **Cross cutting concepts to NJSL math standard(s):** K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count.
- K-PS3-1. Make observations to determine the effect of sunlight on Earth’s surface.
 - **Cross cutting concepts to NJSL math standard(s):** K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
- K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
 - **Cross cutting concepts to NJSL math standard(s):** K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
 - **Cross cutting concepts to NJSL math standard(s):** MP.4 Model with mathematics.

Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
 - **Cross cutting concepts to NJSL math standard(s):** K.CC Counting and Cardinality
 - **Cross cutting concepts to NJSL math standard(s):** MP.2 Reason abstractly and quantitatively.
 - **Cross cutting concepts to NJSL math standard(s):** MP.4 Model with mathematics.

Forces and Interactions: Pushes and Pulls

- K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
 - **Cross cutting concepts to NJSL math standard(s):** K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
 - **Cross cutting concepts to NJSL math standard(s):** K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
 - **Cross cutting concepts to NJSL math standard(s):** MP.2 Reason abstractly and quantitatively
- K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
 - **Cross cutting concepts to NJSL math standard(s):** K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.

Career Ready Practices

CRP4. Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

CRP12. Work productively in teams while using cultural global competence.

Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.

9.1 Personal Financial Literacy: By the end of grade 4, students should be able to...

STRAND A: INCOME AND CAREERS

- 9.1.4. A.1 Explain the difference between a career and a job, and identify various jobs in the community and the related earnings.
- 9.1.4. A.2 Identify potential sources of income.

9.2 Career Awareness, Exploration, and Preparation: By the end of grade 4, students will be able to...

STRAND A: CAREER AWARENESS

- 9.2.4. A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Technology Standards (8.1 and 8.2)

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations.* **Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems and operations.*

Select and use applications effectively and productively.

Understand and use technology systems.

8.1.2.A.1: Identify the basic features of a digital device and explain its purpose.

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

E: Research and Information Fluency: *Students apply digital tools to gather, evaluate, and use information.*

Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.

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

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

C. Design: *The design process is a systematic approach to solving problems.*

The attributes of design.

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

Unit 3: Place Value and Measurement

Standards:

K.CC.A. Know number names and the count sequence.

- K.CC.A.1. Count to 100 by ones and by tens. **(benchmarked)*

K.OA.A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

- K.OA.A.3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g. *using objects or drawings*, and record each decomposition by a drawing or equation (e.g. $5 = 3 + 2$ and $5 = 4 + 1$).
- K.OA.A.4. For any number from 1 to 9, find the number that makes 10 when added to the given number e.g. *by using objects or drawings*, and record the answer with a drawing or equation.
- K.OA.A.5. Demonstrate fluency for addition and subtraction within 5 (by the end of Kindergarten). **(benchmarked)*

K.NBT. A. Work with numbers 11–19 to gain foundations for place value.

- K.NBT. A.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g. *by using objects or drawings*, and record each composition or decomposition by a drawing or equation (e.g. $18 = 10 + 8$); Understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. **(benchmarked)*

K.MD.B. Classify objects and count the number of objects in each category.

- K.MD.B.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. **(benchmarked)*

K.MD.A. Describe and compare measurable attributes.

- K.MD.A.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- K.MD.A.2. Directly compare two objects with a measurable attribute in common, to see which object has “more of” “less of” the attribute, and describe the differences. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

K.G.A. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

- K.G.A.2. Correctly name shapes regardless of their orientation or overall size.
- K.G.A.3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Essential Questions:

- How do we show how many?
- What do numbers tell me?
- How can I show numbers beyond 10?
- How many groups can be made with objects arranged in a circle up to 10?
- How many groups can be made with objects arranged in a rectangle up to 10?
- Why do we need money?
- How do we count money?
- Why do we need clocks?
- What are the different types of clocks?
- How do we tell time?

Enduring Understanding:

Learning Goal 1: Count to 70 by ones and by tens.

Learning Goal 2: Describe measurable attributes of multiple objects and describe several measurable attributes of a single object.

Learning Goal 3: Directly compare two objects with a measurable attribute in common; use *more of* or *less of* to compare the objects.

Learning Goal 4: Count the objects in given categories and sort the categories by count (up to 10 objects).

Learning Goal 5: Correctly names shapes regardless of their orientation or overall size.

Learning Goal 6: Identify shapes as two-dimensional (lying in a plane, *flat*) or three-dimensional (*not flat, solid*).

Learning Goal 7: Decompose numbers less than or equal to ten into pairs of numbers in more than one way and record with a drawing or equation.

Learning Goal 8: Given a number less than 10, find the number that makes 10.

Learning Goal 9: Compose and decompose numbers from 11 to 19 into a group of ten and one(s) with or without manipulatives; record each composition or decomposition through a drawing or equation.

Learning Goal 10: Use mental math strategies to solve addition and subtraction facts within 5.

Knowledge and Skills:

Students will...

Concept 1: Number names and the count sequence up to 70

Concept 2: Measurable attributes: length, weight, size (volume)

Concept 3: A single object can have more than one measurable attribute.

Concept 4: When comparing objects by measuring, each object must have the same starting point.

Concept 5: Moving an object does not change its measure.

Concept 6: Groups can be sorted by the number of objects in each group

Concept 7: Shapes have names.

Concept 8: Shapes can have the same names but appear different.

Concept 9: Shapes may be *flat* or *solid*.

Concept 10: Part-to-whole relationships

Concept 11: Some groups of objects can be broken into two smaller groups while the total number remains the same.

Concept 12: Some groups of objects can be broken into two smaller groups in more than one way.

Concept 13: Numbers from 11 to 19 can be represented as one group of ten *ones* and another group containing fewer than ten *ones*.

Demonstration of Learning:

Objective 1: count orally by ones up to 70.

Objective 2: count orally by tens up to 70.

Objective 3: identify measurable attributes.

Objective 4: describe the measurable attributes of multiple objects.

Objective 5: describe multiple measurable attributes of a single object.

Objective 6: directly compare and describe two objects with measurable attribute in common using *more of* or *less of*.

Objective 7: sort objects into groups.

Objective 8: sort the group by count.

Objective 9: correctly names shapes regardless of their orientation or overall size.

Objective 10: identify shapes as two-dimensional (lying in a plane, *flat*) or three-dimensional (*not flat, solid*).

Objective 11: compare two- and three- dimensional shapes, in different sizes, and orientations.

Objective 12: decompose numbers less than or equal to ten into two numbers.

Objective 13: record the decomposition with a drawing.

Objective 14: record the decomposition with an equation.

Objective 15: decompose the same number in more than one way.

	<p>Objective 16: find a missing part of 10 using objects.</p> <p>Objective 17: given a number from 1 to 9, use drawings, or equations to find the number that makes 10.</p> <p>Objective 18: compose and decompose numbers from 11 to 19 into a group of ten <i>ones</i> and another group of one(s).</p> <p>Objective 19: use the term <i>ones</i> to describe the number of objects in each group.</p> <p>Objective 20: record each composition or decomposition using objects and drawings.</p> <p>Objective 21: record each composition or decomposition by a drawing or equation.</p> <p>Objective 22: add and subtract within 5 with accuracy and efficiency.</p>
<p>Core Instructional and Supplemental Materials:</p> <p>Carter, John A., Ph.D., Cuevas, Gilbert Ph.D., Day, Roger Ph.D., Malloy, Carol Ph.D.. <i>McGraw-Hill Education: My Math grades k-8</i>. McGraw-Hill Education, 2016. www.connectED.mcgraw-hill.com</p> <ul style="list-style-type: none"> • “Model the Math” activities in Teacher Edition for each lesson • “Literature Connection” found in Teacher Edition for each lesson • “Real-World Problem Solving Reader” • RTI Differentiated Instruction / ELL Support for each chapter • Laptops • Math centers/stations • Video tutorials for anticipatory set/guided visuals • Anchor charts created by teachers • Reference sheets created by teachers • Vocabulary Activities/Math Word Wall • Problem of the day(s)/Weeks 	<p>Technology Integration:</p> <ul style="list-style-type: none"> • www.ixl.com • www.softschools.com • www.mathisfun.com • www.jmathpage.com • www.illuminations.nctm.org • www.k-5mathteachingresources.com • https://gradecommoncoremath.wikispaces.org/kindergarten+home • www.connectED.mcgraw-hill.com • https://xtramath.org • https://www.khanacademy.org <p>Illustrative Mathematics:</p> <ul style="list-style-type: none"> • Counting Circles • Choral Counting • Number Tic Tac Toe • Counting Mat • Finding Equal Groups • Ten Frame Edition • Sort and Count 1

<p>Suggested Activities: Roll dice- write numbers Find numbers around the room Ten, Nine, Eight by Mollie Bang https://www.youtube.com/watch?v=l7xXYw9ldZQ Ten Sly Piranhas by William Wise (Counting Back from 10) http://www.youtube.com/watch?v=LN0eYUgx4u0 The Greedy Triangle by Marilyn Burns http://www.youtube.com/watch?v=kPul4XyyZUE So Many Bunnies by Rick Walton (Counting to 26) https://www.youtube.com/watch?v=4wO-v53RnkU</p>	<p>Ten Monsters in a Bed by Rozanne Lanczak Williams Anno’s Counting House by Mitsumasa Anno One More Bunny by Rick Walton (Adding from One to Ten) Quack and Count by Keith Baker (combinations to 7) https://www.youtube.com/watch?v=qyFWbhR7MOA Measuring: Me and the Measure of Things by Joan Sweeney The Shape of Things by Dayle Ann Dobbs http://www.youtube.com/watch?v=1h1HcChju_0</p>	<p>Matching numbers, trace numbers, read numbers Rainbow write Shape by Henry Arthur Pluckrose Round Trip by Ann Jonas ☐ Eight Hands Round by Ann Whitford Paul Ten Black Dots by Donald Crews https://www.youtube.com/watch?v=h3ePDTSThq0 When a Line Bends ... A Shape Begins by Rhonda Gowler Greene https://www.youtube.com/watch?v=fob70WluWk&list=PL8gb4LkBXeKMhxeYfHoKKoa8vBeESRy7u Measuring Penny by Loreen Leedy https://www.youtube.com/watch?v=-kH1Qh6bgq0</p>
<p>Formative/Summative/Benchmark Assessments: Diagnostic Assessment (as Pre-Assessment): Assesses a student’s strengths, weaknesses, knowledge, and skills prior to instruction.</p> <ul style="list-style-type: none"> • STAR 360, iXL, Pre-assessments per grade level • Summer packet review • Daily Problem of the Day • Diagnostic Pre-Chapter Assessment “Am I Ready” for each chapter <p>Formative Assessments: Assesses a student’s performance during instruction, and usually occurs regularly throughout the instruction process.</p> <ul style="list-style-type: none"> • Writing Prompts, Journals, and Portfolios, Do-Now(s), Exit Tickets, iXL (performance assessments), Hands on Labs, Projects, Menu Choice boards, Anticipatory Sets, Problem of the Week <p>Summative Assessments: Measures a student’s achievement at the end of instruction.</p> <ul style="list-style-type: none"> • Diagnostic Quizzes, Activities, Tasks, Challenge Problems, Unit Tests, Chapter Tests, End of Unit Writing Submissions, End of Unit Projects, Benchmark Assessments, midterms and finals (if applicable per grade level) • Assessment Masters – Diagnostic Test for each unit Chapter Test – on level (2A) <p>Criterion-Referenced Assessment: Measures a student’s performance against a goal, specific objective, or standard.</p> <p>Norm-Referenced Assessment: Compares a student’s performance against other students (a national group or other “norm”)</p> <ul style="list-style-type: none"> • Alternate Assessments <p>Interim/Benchmark Assessment</p> <ul style="list-style-type: none"> • Evaluates student performance at periodic intervals, frequently at the end of a grading period. Can predict student performance on end-of-the-year summative assessments. 		

Unit 3: Differentiation/Accommodations/Modifications

	Content Curriculum, standards	Process How students make sense or understand information being taught	Product Evidence of Learning
G&T	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Independent study/set own learning goals ❖ Interest/station groups ❖ Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Use of technology ❖ Journals/Logs 	<ul style="list-style-type: none"> ❖ Choice boards ❖ Podcast/blog ❖ Debate ❖ Design and conduct experiments ❖ Formulate & defend theory ❖ Design a game ❖ Rubrics
ELL	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Vocabulary lists ❖ Visuals/Modeling ❖ Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Chunking ❖ E-Dictionaries, bilingual dictionaries ❖ Extended time ❖ Differentiated instructional outcomes ❖ Use of technology ❖ Frequent checks for understanding 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests with various types of questions ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play
At Risk	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Vocabulary lists ❖ Visuals/Modeling Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Chunking ❖ Extended time ❖ Differentiated instructional outcomes ❖ Use of technology ❖ Partner work ❖ Frequent checks for understanding 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests ❖ Oral Assessments ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play
IEP/504	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Visuals/Modeling Varying levels of resources and materials 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Extended time ❖ Differentiated instructional outcomes ❖ Preferential Seating 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests ❖ Oral Assessments ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play

	<ul style="list-style-type: none"> ❖ Use of technology ❖ Provide word boxes ❖ Use of a calculator ❖ Present fewer multiple choice answers ❖ Acknowledge alternate responses such as pictures and/or verbal instead of written ❖ Teacher may scribe for student ❖ Oral assessment instead of written 	<ul style="list-style-type: none"> ❖ Use of technology ❖ Small group/one-to-one instruction ❖ Teach information processing strategies ❖ Chunking ❖ Frequent checks for understanding ❖ Access to teacher created notes ❖ Use of visual and multisensory formats ❖ Use of assistive technology ❖ Use of prompts ❖ Vocabulary walls and anchor charts available ❖ Provide a Study Guide ❖ Graphic organizers ❖ Teacher modeling or anchor charts on board ❖ Provide multi-level reading material ❖ Chunk learning into smaller segments ❖ Small group instruction 	
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Instructional Routines for Core Instructional Delivery

<p>Collaborative Problem Solving Connect Previous Knowledge to New Learning Making Thinking Visible Develop and Demonstrate Mathematical Practices Inquiry-Oriented and Exploratory Approach Multiple Solution Paths and Strategies</p>	<p>Use of Multiple Representations Explain the Rationale of your Math Work Quick Writes Pair/Trio Sharing Turn and Talk Charting Gallery Walks Small Group and Whole Class Discussions Student Modeling</p>	<p>Analyze Student Work Identify Student’s Mathematical Understanding Identify Student’s Mathematical Misunderstandings Interviews Role Playing Diagrams, Charts, Tables, and Graphs Anticipate Likely and Possible Student Responses Collect Different Student Approaches</p>	<p>Multiple Response Strategies Asking Assessing and Advancing Questions Revoicing Marking Recapping Challenging Pressing for Accuracy and Reasoning Maintain the Cognitive Demand</p>
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Content Area: Geometry	Grade Level : Kindergarten
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Unit 4: Place Value and Geometric Shapes	Time Frame: April - June
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Interdisciplinary Connections

NGSS Connection:

Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

- K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
 - **Cross cutting concepts to NJSL math standard(s):** K.CC Counting and Cardinality
 - **Cross cutting concepts to NJSL math standard(s):** MP.2 Reason abstractly and quantitatively.
 - **Cross cutting concepts to NJSL math standard(s):** MP.4 Model with mathematics.

Weather and Climate

- K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
 - **Cross cutting concepts to NJSL math standard(s):** K.CC Counting and Cardinality

ELA Connection:

Range of Reading and Level of Text Complexity

- RL.K.1. With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how).
- RL.K.10. Actively engage in group reading activities with purpose and understanding.

Key Ideas and Details

- RI.K.1. With prompting and support, ask and answer questions about key details in a text.
- RI.K.2. With prompting and support, identify the main topic and retell key details of a text.
- RI.K.3. With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

Comprehension and Collaboration

- SL.K.3. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

Presentation of Knowledge and Ideas

- SL.K.5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
- SL.K.6. Speak audibly and express thoughts, feelings, and ideas clearly.

Text Types and Purposes

- W.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
- W.K.3. Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

Career Ready Practices

CRP4. Communicate clearly and effectively and with reason.

Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.

CRP12. Work productively in teams while using cultural global competence.

Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.

9.1 Personal Financial Literacy: By the end of grade 4, students should be able to...

STRAND D: PLANNING, SAVING, AND INVESTING

- 9.1.4.D.1 Determine various ways to save.

9.2 Career Awareness, Exploration, and Preparation: By the end of grade 4, students will be able to...

STRAND A: CAREER AWARENESS

- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Technology Standards (8.1 and 8.2)

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

D. A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.*

Select and use applications effectively and productively.

Understand and use technology systems.

8.1.2.A.1: Identify the basic features of a digital device and explain its purpose.

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

E: Research and Information Fluency: *Students apply digital tools to gather, evaluate, and use information.*

Plan strategies to guide inquiry

Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.

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

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

E. Design: *The design process is a systematic approach to solving problems.*

The attributes of design.

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

Unit 4: Place Value and Geometric Shapes

Standards:

K.CC.A. Know number names and the count sequence.

- K.CC.A.1. Count to 100 by ones and by tens. **(benchmarked)*

K.OA.A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

- K.OA.A.5. Demonstrate fluency for addition and subtraction within 5 (by the end of Kindergarten). **(benchmarked)*

K.NBT.A. Work with numbers 11–19 to gain foundations for place value.

- K.NBT. A.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, *e.g. by using objects or drawings*, and record each composition or decomposition by a drawing or equation (*e.g. $18 = 10 + 8$*); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. **(benchmarked)*

K.G.B. Analyze, compare, create, and compose shapes

- K.G.B.4. Analyze and compare two- and three- dimensional shapes, in different sizes, and orientations, using informal language to describe their similarities, differences, parts (*e.g. number of sides and vertices “corners”*) and other attributes (*e.g. having sides of equal length*).
- K.G.B.5. Model shapes in the world by building shapes from components (*e.g., sticks and clay balls*) and drawing shapes.
- K.G.B.6. Compose simple shapes to form larger shapes. *For example: “Can you join these two triangles with full sides touching to make a rectangle?”*

Essential Questions:

- How do we show how many?
- What do numbers tell me?
- How can I show numbers beyond 10?
- How many groups can be made with objects arranged in a circle up to 10?
- How many groups can be made with objects arranged in a rectangle up to 10?

Enduring Understanding:

Learning Goal 1: Count to 100 by ones and by tens.

Learning Goal 2: Fluently add and subtract within 5.

Learning Goal 3: Use informal language to describe similarities, differences, parts number of sides, number of *corners*, and other attributes (having sides of equal length) when comparing two- and three- dimensional shapes, in different sizes and orientations.

	<p><u>Learning Goal 4:</u> Model shapes in the world by building and drawing shapes.</p> <p><u>Learning Goal 5:</u> Compose simple shapes to form larger shapes</p> <p><u>Learning Goal 6:</u> Compose and decompose numbers from 11 to 19 into a group of ten and one(s) with or without manipulatives. Record each composition or decomposition through a drawing or equation.</p>
<p>Knowledge and Skills: Students will...</p> <p><u>Concept 1:</u> Number names and the count sequence up to 100</p> <p><u>Concept 2:</u> Orientation does not alter attributes or size.</p> <p><u>Concept 3:</u> Shapes may have sides of unequal or equal length.</p> <p><u>Concept 4:</u> Shapes may or may not have the same number of sides or ‘corners’.</p> <p><u>Concept 5:</u> Basic shapes exist in real world objects.</p> <p><u>Concept 6:</u> Shapes can be combined to make larger shapes.</p> <p><u>Concept 7:</u> Numbers from 11 to 19 can be represented as one group of ten <i>ones</i> and another group containing fewer than ten <i>ones</i>.</p>	<p>Demonstration of Learning:</p> <p><u>Objective 1:</u> count orally by ones <u>up to 100</u>.</p> <p><u>Objective 2:</u> count orally by tens <u>up to 100</u>.</p> <p><u>Objective 3:</u> add and subtract within 5 with accuracy and efficiency.</p> <p><u>Objective 4:</u> compare two- and three- dimensional shapes in different sizes and in different orientations and identify similarities and differences.</p> <p><u>Objective 5:</u> compare parts of two- and three-dimensional shapes [e.g. number of sides, number of vertices (<i>corners</i>)].</p> <p><u>Objective 6:</u> compare attributes of two- and three-dimensional shapes [e.g. sides have equal length.]</p> <p><u>Objective 7:</u> use informal language to describe similarities, differences, parts, and other attributes when comparing two-and three-dimensional shapes, in different sizes and orientations.</p> <p><u>Objective 8:</u> recognize basic shapes in the real world.</p> <p><u>Objective 9:</u> use objects (clay, sticks, etc) to model shapes.</p>

	<p>Objective 10: model shapes in the world by drawing shapes.</p> <p>Objective 11: compose simple shapes to form larger shapes.</p> <p>Objective 12: compose and decompose numbers from 11 to 19 into a group of ten <i>ones</i> and another group of one(s).</p> <p>Objective 13: use the term <i>ones</i> to describe the number of objects in each group.</p> <p>Objective 14: record each composition or decomposition using objects, drawings, AND equations.</p>	
<p>Core Instructional and Supplemental Materials:</p> <p>Carter, John A., Ph.D., Cuevas, Gilbert Ph.D., Day, Roger Ph.D., Malloy, Carol Ph.D.. <i>McGraw-Hill Education: My Math grades k-8</i>. McGraw-Hill Education, 2016. www.connectED.mcgraw-hill.com</p> <ul style="list-style-type: none"> • “Model the Math” activities in Teacher Edition for each lesson • “Literature Connection” found in Teacher Edition for each lesson • “Real-World Problem Solving Reader” • RTI Differentiated Instruction / ELL Support for each chapter • Laptops • Math centers/stations • Video tutorials for anticipatory set/guided visuals • Anchor charts created by teachers • Reference sheets created by teachers • Vocabulary Activities/Math Word Wall • Problem of the day(s)/Weeks 	<p>Technology Integration:</p> <ul style="list-style-type: none"> • www.ixl.com • www.softschools.com • www.mathisfun.com • www.jmathpage.com • www.illuminations.nctm.org • www.k-5mathteachingresources.com • https://gradecommoncoremath.wikispaces.hcpss.org/kindergarten+home • www.connectED.mcgraw-hill.com • https://xtramath.org • https://www.khanacademy.org 	<p>Illustrative Mathematics:</p> <ul style="list-style-type: none"> • Counting Circles • Choral Counting • Number Tic Tac Toe • Counting Mat • Finding Equal Groups • Ten Frame Edition • Sort and Count 1

<p>Suggested Activities: Grandfather Tang’s Story by Ann Tompert and Robert Andrew Parker https://www.youtube.com/watch?v=x74l1ZM-zP0 Jack the Builder, by Stuart J. Murphy (Counting on) https://www.youtube.com/watch?v=v8MPg_mtYaA</p>	<p>The Shape of Things by Dayle Ann Dobbs http://www.youtube.com/watch?v=1h1HcChju_0 Mouse Shapes by Ellen Stoll Walsh https://www.youtube.com/watch?v=7KKYNwmxdbc</p>	<p>The Greedy Triangle by Marilyn Burns http://www.youtube.com/watch?v=kPul4XyyZUE Three Pigs, One Wolf and Seven Magic Shapes by Maccarone and Neuhaus The Tangram Magician by Lisa Campbell Ernst</p>
<p>Formative/Summative/Benchmark Assessments:</p> <p>Diagnostic Assessment (as Pre-Assessment): Assesses a student’s strengths, weaknesses, knowledge, and skills prior to instruction.</p> <ul style="list-style-type: none"> • STAR 360, iXL, Pre-assessments per grade level • Summer packet review • Daily Problem of the Day • Diagnostic Pre-Chapter Assessment “Am I Ready” for each chapter <p>Formative Assessments: Assesses a student’s performance during instruction, and usually occurs regularly throughout the instruction process.</p> <ul style="list-style-type: none"> • Writing Prompts, Journals, and Portfolios, Do-Now(s), Exit Tickets, iXL (performance assessments), Hands on Labs, Projects, Menu Choice boards, Anticipatory Sets, Problem of the Week <p>Summative Assessments: Measures a student’s achievement at the end of instruction.</p> <ul style="list-style-type: none"> • Diagnostic Quizzes, Activities, Tasks, Challenge Problems, Unit Tests, Chapter Tests, End of Unit Writing Submissions, End of Unit Projects, Benchmark Assessments, midterms and finals (if applicable per grade level) • Assessment Masters – Diagnostic Test for each unit Chapter Test – on level (2A) • STAR 360 benchmark assessments <p>Criterion-Referenced Assessment: Measures a student’s performance against a goal, specific objective, or standard.</p> <p>Norm-Referenced Assessment: Compares a student’s performance against other students (a national group or other “norm”)</p> <ul style="list-style-type: none"> • Alternate Assessments <p>Interim/Benchmark Assessment</p> <ul style="list-style-type: none"> • Evaluates student performance at periodic intervals, frequently at the end of a grading period. Can predict student performance on end-of-the-year summative assessments. 		

Unit 4: Differentiation/Accommodations/Modifications

	Content Curriculum, standards	Process How students make sense or understand information being taught	Product Evidence of Learning
G&T	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Independent study/set own learning goals ❖ Interest/station groups ❖ Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Use of technology ❖ Journals/Logs 	<ul style="list-style-type: none"> ❖ Choice boards ❖ Podcast/blog ❖ Debate ❖ Design and conduct experiments ❖ Formulate & defend theory ❖ Design a game ❖ Rubrics
ELL	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Vocabulary lists ❖ Visuals/Modeling ❖ Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Chunking ❖ E-Dictionaries, bilingual dictionaries ❖ Extended time ❖ Differentiated instructional outcomes ❖ Use of technology ❖ Frequent checks for understanding 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests with various types of questions ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play
At Risk	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Vocabulary lists ❖ Visuals/Modeling Varying levels of resources and materials ❖ Use of technology 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Chunking ❖ Extended time ❖ Differentiated instructional outcomes ❖ Use of technology ❖ Partner work ❖ Frequent checks for understanding 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests ❖ Oral Assessments ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play
IEP/504	<ul style="list-style-type: none"> ❖ Compacting ❖ Flexible grouping ❖ Controlled choice ❖ Multi-sensory learning-auditory, visual, kinesthetic, tactile ❖ Pre-teach vocabulary ❖ Visuals/Modeling Varying levels of resources and materials 	<ul style="list-style-type: none"> ❖ Tiered Assignments ❖ Leveled questions- written responses, think-pair-share, multiple choice, open ended... ❖ Centers/Stations ❖ Scaffolding ❖ Extended time ❖ Differentiated instructional outcomes ❖ Preferential Seating 	<ul style="list-style-type: none"> ❖ Rubrics ❖ Simple to complex ❖ Group tasks ❖ Quizzes, tests ❖ Oral Assessments ❖ Generate charts or diagrams to show what was learned ❖ Act out or role play

	<ul style="list-style-type: none"> ❖ Use of technology ❖ Provide word boxes ❖ Use of a calculator ❖ Present fewer multiple choice answers ❖ Acknowledge alternate responses such as pictures and/or verbal instead of written ❖ Teacher may scribe for student ❖ Oral assessment instead of written 	<ul style="list-style-type: none"> ❖ Use of technology ❖ Small group/one-to-one instruction ❖ Teach information processing strategies ❖ Chunking ❖ Frequent checks for understanding ❖ Access to teacher created notes ❖ Use of visual and multisensory formats ❖ Use of assistive technology ❖ Use of prompts ❖ Vocabulary walls and anchor charts available ❖ Provide a Study Guide ❖ Graphic organizers ❖ Teacher modeling or anchor charts on board ❖ Provide multi-level reading material ❖ Chunk learning into smaller segments ❖ Small group instruction 	
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Instructional Routines for Core Instructional Delivery

<p>Collaborative Problem Solving</p> <p>Connect Previous Knowledge to New Learning</p> <p>Making Thinking Visible</p> <p>Develop and Demonstrate Mathematical Practices</p> <p>Inquiry-Oriented and Exploratory Approach</p> <p>Multiple Solution Paths and Strategies</p>	<p>Use of Multiple Representations</p> <p>Explain the Rationale of your Math Work</p> <p>Quick Writes</p> <p>Pair/Trio Sharing</p> <p>Turn and Talk Charting Gallery</p> <p>Walks</p> <p>Small Group and Whole Class Discussions</p> <p>Student Modeling</p>	<p>Analyze Student Work</p> <p>Identify Student’s Mathematical Understanding</p> <p>Identify Student’s Mathematical Misunderstandings</p> <p>Interviews</p> <p>Role Playing</p> <p>Diagrams, Charts, Tables, and Graphs</p> <p>Anticipate Likely and Possible Student Responses</p> <p>Collect Different Student Approaches</p>	<p>Multiple Response Strategies</p> <p>Asking Assessing and Advancing Questions</p> <p>Revoicing</p> <p>Marking</p> <p>Recapping</p> <p>Challenging Pressing for Accuracy and Reasoning</p> <p>Maintain the Cognitive Demand</p>
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